

CEOS Biodiversity Study Team

CEOS New Initiative Proposal

Introduction

The CSA in its capacity as 2024 CEOS Chair proposes to continue the strategic reflection on biodiversity with a CEOS Study Team and build upon the work of the Ecosystem Extent Task Team or rather the transformation of the work that begun at Plenary 2022 and form the 2024 CEOS Chair priority. The current document is crafted in line with the CEOS New Initiative Process Paper to seek approval from CEOS Principals on the work and objectives of a Biodiversity study team for the next year nominally.

Description

CEOS Chair Team 2024, in collaboration with an impressive collection of individuals from CEOS members' organisations, set out to explore how EO could contribute in addressing or responding to the biodiversity crisis and the implementation of the *Kunming-Montreal Global Biodiversity Framework*, KM-GBF sometimes simply referred to as the Global Biodiversity Framework (GBF). In support of this goal, the EETT (using ecosystem extent as a vehicle for discussion) developed a white paper and supported the work on three demonstrators that would make best possible use of available EO data for ecosystem extent monitoring and evaluation. The objective is for insights and perspectives from these experiences/lessons learned to be developed to inform future efforts.

The CSA elevated biodiversity as their 2024 CEOS Chair theme, approved at 37th Plenary, and asked the community to spend time and effort in working through options for determining how CEOS can proceed in the future with respect to biodiversity. One aspect of this pertained to the need to develop and strengthen our relationships with other international organisations involved with the biodiversity user community, while the second was inward facing in proposing an approach that would adequately serve CEOS members in their continuing efforts to have EO contribute to the global challenges on biodiversity.

The thinking has benefitted from feedback from CEOS Principals and CEOS entities over the last year. Although there is general support to act, there was a strong expression for the need to clarify what actions would we first take. In short, there is a need to know what we are committing ourselves to, even in a best-effort collaboration. Internal discussions to date have ranged from the need to create an *ad hoc* EETT in 2022 for two years, to the need to have a more permanent biodiversity-focused entity within CEOS. While there seems to be general support for an eventual organizational approach, allowing the assignment of biodiversity responsibilities under a recommended

option, such an option would have to be properly considered by all CEOS members. In addition, there is a clear understanding of the need to better scope biodiversity activities that CEOS members already do, or are planning, as well as the need for a more formal proposal to allow CEOS Principals to make decisions on more multilateral commitment within CEOS.

The UN Convention on Biological Diversity (UNCBD) is only one international partner among others who have identified the need for support from CEOS, so additional time is also required to submit a detailed proposal for a potential approach to orchestrate CEOS' response to specific requests, such as support in implementing the Global Biodiversity Framework (*Kunming-Montreal Global Biodiversity Framework*, KM-GBF). Accepting these statements, it is therefore proposed to suggest the establishment of a CEOS **Biodiversity Study Team** to work on specific actions (see section 2 of this document) during 2025.

The proposed establishment of the Biodiversity Study Team would be complementary to on-going CEOS SEC strategic engagement with the different international actors in biodiversity.

The establishment of the CEOS **Biodiversity Study Team** seeks to provide information for CEOS to assess which shape or form biodiversity activities would take, as well as to design its potential mandate. The CEOS Biodiversity Study Team would:

- A. Assess the options for sustainable support for biodiversity in CEOS.
- B. Conduct a stakeholder assessment.
- C. In collaboration with the CEOS executive officer, develop supporting documentation for the recommended option.
- D. Consult across CEOS entities and agencies to leverage existing practices on biodiversity and implement lessons learned and recommendations.

This initiative focuses on an internal assessment and the gathering of the information to support the strategic decision on support to biodiversity at Plenary 2025. However, the longer-term benefit resides in the coordination of CEOS efforts in providing the biodiversity user community and monitoring agencies with EO data. Annex A represents CSA's input to the Study Team's work. Highlighted elements are proposed actions only and can be used by the Study Team if deemed relevant.

Alignment with CEOS Strategic Goals

CEOS Members recognized the importance of engagement with other international organisations to coordinate efforts in responding to the biodiversity crisis, but also to improve our understanding of the biodiversity user community needs if Space-based EO is to contribute effectively.

The international acknowledgement of the global biodiversity crisis and the need to gather actionable information to support policy decisions and monitoring of effects of measures taken does align with CEOS's mission statement. The CEOS Biodiversity Study Team's work is in direct support to one of the CEOS priorities: *Ensure that space-based Earth observations support the success of the next decade of the Group on Earth Observations (GEO)*.

From the EETT white paper and consultations, it is clear that there is alignment with the different WGs and VCs. In many cases the CEOS entities' work is not specific to biodiversity and could need tailoring as in the case of educational tools and initiative within the WGCapD terms of reference.

Benefit to internal and external Stakeholders

The Biodiversity Study Team's work will directly benefit CEOS members in determining the desired approach in collectively contributing to the ecosystem extent and condition monitoring by the global biodiversity user community.

The outputs from the work of the next year will serve to address the overall coordination of CEOS efforts regarding biodiversity. The end goals are to offer coordination, capture best practices and collective use of space-based Earth observations in responding to the global biodiversity crisis. A number of external stakeholders, including biodiversity user community and national monitoring and reporting agencies will benefit from a coordinated CEOS approach that ultimately would support assessment of progress towards internationally agreed objectives.

Feasibility and Affordability

Many agencies have already committed significant resources to the work of the EETT for the last two years. The general interest was evidenced by the fact that the team comprised four co-leads. Although the composition of the Biodiversity Study Team can be different from the EETT, it is believed that organisations will want to complete the assessment of CEOS's future role in biodiversity. Canada would be pleased to contribute to the Study Team's work.

Expected Duration

The Biodiversity Study Team would have a one-year mandate and should report progress to CEOS SIT-40, as well as to quarterly CEOS SEC meetings, at a minimum.

ANNEX A: Input for consideration by the Biodiversity Study Team

Once the recommended option is identified and endorsed at Plenary 2025, specific tasks will need to be identified in order for CEOS to maintain its contributions to biodiversity monitoring and protection.

The elements below were captured during the June 2024 Biodiversity workshop as potential actions for CEOS to consider. By no means do they represent an exhaustive

nor pre-determined list of actions. The CEOS Biodiversity Study Team could use this list as a starting point for discussion.

- A. Identify missions that can contribute to biodiversity, and define the communication process that supports the needs of biodiversity practitioners:
 - i. *An understanding of currently available data/products would be beneficial*
 - ii. *Define specifically what type of satellite data would be needed for GET level 3 – provide additional detail on not just extent but condition and change.*
 - iii. *Define specifically what type of satellite data would be needed for specific EBVs – provide additional detail on where satellite data does not help with developing a data product but can be used to identify where data collection needed to occur.*
 - iv. *On the above, provide guidance on which satellites have the above information, what public data is available and what are the use cases where a country may want to buy satellite data.*
- B. Identify elements for a co-developed strategy defining how CEOS will systematically coordinate its relationships with the many existing biodiversity actors (including UNCBD, GEO, GEO BON, UNSEEA, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services - IPBES, Ramsar, FAO, and UNCCD among others).
- C. Such strategy should incorporate concrete actions in support of the *Kunming-Montreal Global Biodiversity Framework (KM-GBF)* implementation.
- D. Pull together guidance for countries looking to understand how to invest in their monitoring systems – Linkage to demos/pilots would be useful.
(ie: “for question X, here is what you might want to do.”)
- E. Identify CEOS contributions to external existing projects (e.g. GEO Maldives pilot, how EO data can be connected to Global Ecosystem Atlas, GEO BON Tools, etc).
- F. Leverage the international partnerships and the work they have done on building networks and identifying national biodiversity requirements.
- G. Identify, in collaboration with WGCapD, examples of educational tools needed by national users.