GEO BON
Group on Earth Observations
Biodiversity Observation Network

GBiOS

Global Biodiversity Observing System Workshop BIOSPACE25

Alice Hughes & Andy Gonzalez

Speakers

Dr. Andrew Gonzalez

The need for GBiOS

Dr. Andrés Mármol-Guijarro

The story of EuropaBON and EBOCC

Dr. Alice Hughes

Addressing critical data challenges in the Asia Pacific region

Dr. Yelena Finegold,

FAO's Open Foris story - supporting global carbon monitoring

Dr. Gary Geller

Sage thoughts on how to design and implement GBiOS

What are the steps to implementing GBiOS?

We need to build on the the blueprint for GBiOS: what are the pillars of this plan?

The GBiOS implementation plan would identify the major practical actions that should be undertaken in the next 5 (2030?!)

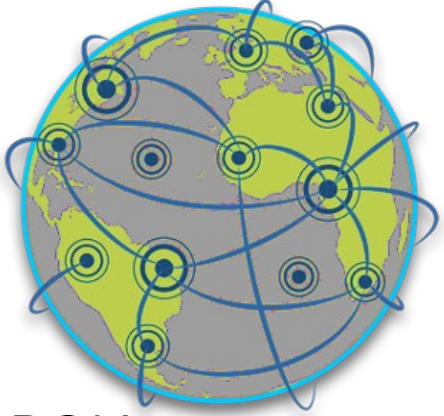
How can GEO BON - GBiOS help ESA/NASA and European Commission realize this vision together?

GBiOS - Towards an Implementation Plan

Break out groups

1. **Filling data gaps**
2. **Ensuring sustainability of capacity and funding**
3. **Engaging with countries**
4. **Managing data for use (Obs. to EBVs to indicators)**
5. **Global Biodiversity Knowledge/Data Centres**
6. **Improving data quality, availability, and utility.**
7. **Coordinating observing infrastructures**

Recommendations



What

- GBiOS - focus on an observing system built on federated national and thematic BONs. Mission: to overcome systemic barriers to data gathering and mobilisation.
- Space agencies and their satellite systems are critical to the vision and delivery.
- For funding: clarify “what is the ask?”: sustainability funding model for long-term monitoring(GEF-9)

Who

- Close coordination with space agencies (CEOS) is vital. (e.g. Copernicus services, OpenEO)
- CBD TSCs can be regional ‘nodes’ supporting coordination of observations across countries and the harmonization of methods.
- UN CBD dialogues and partnership with regional TSC for BON establishment process and indicator work flows.

How

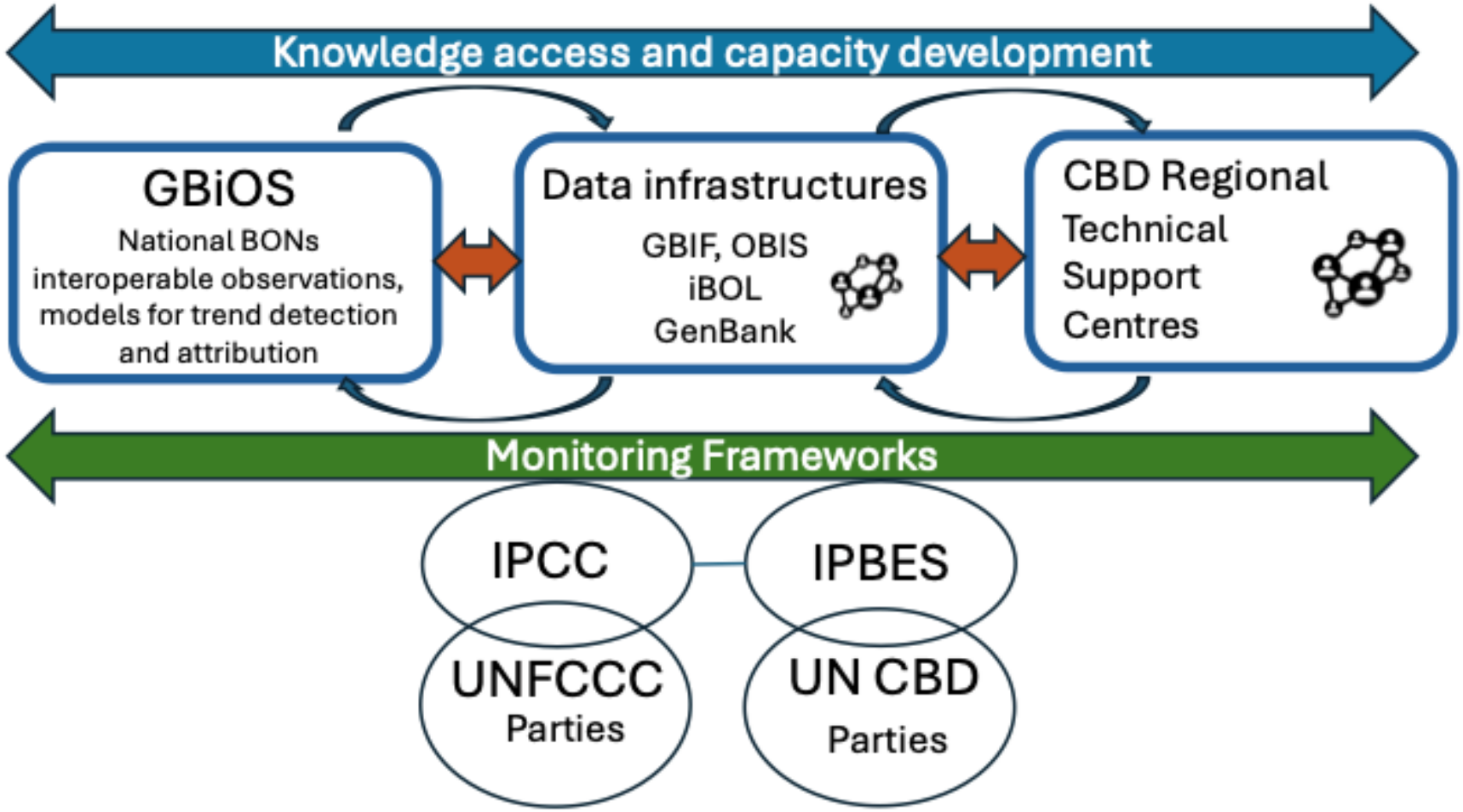
- Start small and build with the clear UN CBD GBF mandate. Phase growth
- Make the monitoring process for headline indicators much easier
- Foster community contribution of EO-based pipelines that make reporting in-situ data much easier (e.g. BON in a Box, ARIES and other open tools)
- BON development guidelines should include national and regional guidelines on implementing EBVs with EO and in-situ.
- We need an global biodiversity digital twin to assess options for GBiOS implementation (VOI and ROI) and site networks. Partnerships needed to build this with large scale simulation.
- Remarkable network of LTER, Field stations and UNESCO Biosphere reserves - GBiOS backbone.

Immediate next step

A joint statement by CBD, GEO BON and partners to COP (SBSTTA Oct. 2025) to communicate the pressing need coordinate and coalesce the monitoring community and existing data (OBIS, GBIF) observing systems (GOOS, GCOS, GTOS) to support parties.

Funding model scope and development

Linking Global Biodiversity Monitoring, Data infrastructures & Knowledge Support Services



Thank you to the team!

European Commission

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Why we need a GBiOS

- Profound inequities in data coverage, availability and access.
- Without monitoring biodiversity we cannot reach future targets
- We have to stop treating biodiversity change (loss and gain) as a distant and “trivial” issue.
- GBiOS can contribute the understanding that underpins the values and risks arising from biodiversity loss/gain.
- Making reporting easier and standardised is in everyone’s interests as it reduces reporting burden for countries and businesses etc. This increases the use and value of data
- Making monitoring easier also accentuates the value of local expertise and facilitates more efficient use of resources at all scales

Realising the GBiOS vision

- GBiOS - a sustainable observing system.
- BONs are the building block of GBiOS
- Federate the existing BONs to provide an economy of scale, adaptability to meet needs.
- Sustained national engagement requires national ownership (data sovereignty).
- Need a system for supporting engagement during development (funding, technical capacity, guidance document; transparent governance process, strong policy mandate).
- Addressing systemic barriers to data gathering and mobilisation at all stages.
- Meeting the needs of major stakeholders and partners - respecting data sovereignty.
- Build with existing opportunities better and developing structures that normalise this (Ships of opportunity)
- Making the monitoring process easier: all countries have reporting mandates.
- CBD TSCs as regional nodes that can support coordination of observations.
- Develop tools and pipelines that make reporting easier to incentivise data use standardisation (BON-in-a-Box).