THE GLOBAL FOREST OBSERVATIONS INITIATIVE IN SUPPORT OF DEVELOPING COUNTRIES

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• **International collaboration to:**
  – Support the utilisation of *Earth observation* for countries developing National Forest Monitoring Systems for **REDD+ reporting**
  – Build technical capacity and provide operational guidance
  – Facilitate access to key remote sensing data
  – Stimulate scientific advancements for forest monitoring and MRV for REDD+
Partners

- Founded under Group on Earth Observations (GEO) in 2011

- Lead partners:
  - Govt of Australia
  - Govt of Norway
  - USA via SilvaCarbon,
  - FAO
  - Committee on Earth Observation Satellites (CEOS)

- Advisory experts from UNFCCC, IPCC, World Bank FCPF, universities, etc

- Open to new partners
**GFOI Components**

### Methods and Guidance
- Guidance on integrating remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests.

### Space Data Coordination
- GFOI works with space agencies through CEOS to ensure the long-term, global acquisition of core satellite data.
- Helps countries to meet their individual data needs.

### Capacity Building
- GFOI provides capacity building in coordination with others such as UN-REDD. It supports the use of satellite and ground data to monitor forests, and estimate GHG emissions.

### R&D Coordination
- Identifying and promoting R&D needed for improved practical, global implementation of National Forest Monitoring.

### GFOI Office at FAO, Rome
- Provides overall coordination and administrative support to the GFOI Leads, components, activities and partners.

[http://gfoi.org/](http://gfoi.org/)
• GFOI Methods and Guidance Document (MGD) provides **Logical** and **systematic guidance** to REDD+ countries on the utilisation of EO data for national C emissions reporting;

• Consistent with **UNFCCC Paris Agreement** and Warsaw Framework on REDD+

• Provides **operational link** between IPCC methods and all REDD+ activities identified by UNFCCC

• Consistent with the annual review of scientific developments provided by **GOFC-GOLD Sourcebook**

• Version 2 (Nov 2016) available in **English**, **French** and **Spanish**

• Interactive web application **REDDcompass** available at **www.gfoi.org/REDDcompass**
Space Data Coordination (SDCG)

Implementation of Baseline Global Data Acquisition Strategy

- Work with space agencies to assure the **availability and continuity of consistent time-series** of optical and radar (SAR) satellite data over global forest cover.
- At least one **annual national cloud-free optical** coverage over each country.
- Based on **publicly open satellite data** – “core data” (Landsat, Sentinels, CBERS)

Space Data Services

- Supporting REDD+ countries’ specific technical **requirements, heritage, or experience**.
- Demonstrating data exploitation solutions e.g. **Data Cube, Analysis Ready Data**.
- Covers a wider range of satellite data sources, including **commercial**.

Data Supply in Support of GFOI R&D Activities

- Includes **support for science** studies assisting the **development and evolution of the MGD** for GFOI.
Global Baseline Core Satellite Data

Radar Sensors
- C-band
  - ERS-1&2 (ESA)
  - Envisat (ESA)
  - Sentinel-1A/B/C (ESA)

L-band
- SPOT 1–5 (CNES)
  - SPOT global archive data older than 5 years is available as core data.
  - SPOT coverage available over Congo basin 2008 - 2015.
- LANDSAT-7/-8/-9 (USGS)
  - Landsat Archive available from 1972
- RADARSAT CONSTITUENCY 1/2/3 (CSA)
  - Data policy to be confirmed
- SAOCOM-1A/B -2A/B (CONAE)

Optical Sensors
- CBERS Series (INPE/CRESDA)
- Sentinel-2A/B/C (ESA)
- CBERS-4/-4A

Special Core Data Sets
- ALOS (JAXA)
- ALOS-2 (JAXA)

2007 – 2010 & 2015 global 25m-resolution PALSAR/PALSAR-2 mosaics and forest/non-forest maps are freely available.

www.gfoi.org/space-data/space-data-portal/
GFOI Capacity Building

- **Interface** of GFOI with REDD+ countries;
- Jointly implemented through **US SilvaCarbon**, and **FAO (UN-REDD)**;
- **Tailored** to meet country needs and requests;
- Aims to build up **networks of experts** in countries (recent train-the-trainer workshops);
- Intended to use **MGD** as core syllabus;
- Workshops, one-on-one training, in-country experts, webinars and open sources tools;
R&D Coordination

- Coordinate global R&D activities on forest monitoring to help meet country needs
- Aimed to progress development of “Priority Research Topics” towards operational status, such as e.g.
  - Forest degradation
  - Biomass estimation
  - Sensor interoperability
  - Use of global data sets
  - Accuracy assessment and uncertainty;
- Conducting Expert Workshops on dedicated R&D Prio topics
- Ultimate goal to include mature methods as new MGD modules

GFOI.org/RD
• Currently 18 external research groups active in 32 multi-disciplinary study sites, addressing multiple GFOI Priority R&D topics
• All groups self-funded. GFOI (via SDCG) provides access to commercial satellite data (ALOS-2, COSMO-SkyMed, RADARSAT-2, Pléiades, TerraSAR-X, TanDEM-X)
Independent review undertaken 2016 to assess GFOI performance during its first 5 years

The review concluded that the GFOI has been largely successful in pursuing its initial goals:

- effective capacity building cooperation achieved
- operational guidance developed,
- data needs addressed and;
- development of new technologies pursued for the benefit of REDD+ countries.

Funding for GFOI approved for 5 more years ("Phase 2")
Phase 2

- GFOI Phase 2 focuses on **country engagement**, where coordinated **capacity building** on forest monitoring is the primary goal for the benefit of developing countries.

- MGD and the interactive REDDcompass are the backbone of capacity building in the countries providing **up-to-date information**.

- SDCG emphasis turns from systematic acquisition of satellite data to **data uptake in the countries and their applications**.

- R&D Coordination invites research groups to contribute to the **GFOI R&D agenda** and join the effort to make MRV systems more robust.
More Information

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