

Activities and research priorities of the GFOI R&D Coordination Component 2018

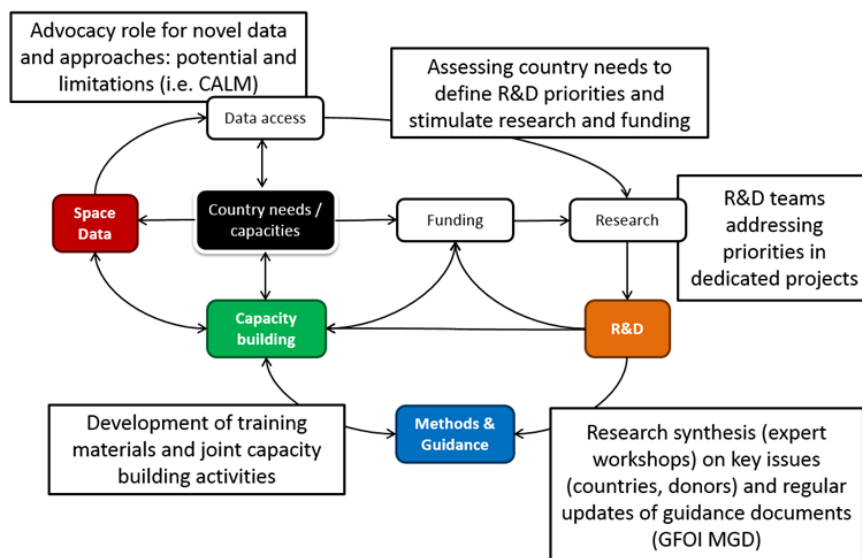
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Background: The recent [Paris Climate Agreement](#) emphasizes efforts for reducing emissions from deforestation and forest degradation and enhancing carbon stocks (REDD+) for mitigation of greenhouse gas emissions in developing countries. Dedicated research and development (R&D) have been instrumental in developing technical solutions integrating remote sensing and ground based observations for national forest and GHG monitoring in both developed and developing countries¹.

About GFOI: To help fulfil the monitoring and reporting needs, the Global Forest Observations Initiative (GFOI) is an informal partnership which coordinates international support to developing countries (countries) on forest monitoring and greenhouse gas (GHG) accounting for REDD+ and related activities.

About the R&D component: [The Research and Development Coordination Component of GFOI](#) seeks to ensure that methodological and technical issues hindering action are brought to the attention of the scientific community and prioritized for new research and development. The Component's goal is to identify existing or develop new operational science and technology, which can improve monitoring efforts and address unmet country needs. One of the key outputs of this Component is providing a regular forum for the coordination and progression of research towards operational status. Once solutions have been identified and proven ready for operational purposes, these can then be proposed for inclusion in new guidance materials or modules by the MGD Component and subsequently used in capacity building activities. In 2016, the [Land Cover Project Office of the Global Observation of Forest Cover & Land Dynamics \(GOFCGOLD\)](#) took the lead of the GFOI R&D Component; thanks to the support of the European Space Agency. The 2017-2019 Work Plan of the R&D Coordination component aligns with the objectives of the GFOI as a whole, and previous achievements, bringing forward an updated list of priority R&D topics, and criteria to consistently assess levels of maturity (CALM) framework to monitor R&D progress (Fig. 1).

Figure 1 illustrates how the R&D Component is rooted to the evolving country needs and acts as a catalyst for R&D activities aimed at delivering practical solutions toward operational NFMS. The list of priority research topics is regularly revised to further facilitate research activities through interacting with stakeholders, facilitating remote sensing data access and fostering joint research activities. Dedicated expert workshops are aimed to provide a synthesis of state-of-the-art forest monitoring methods that can be incorporated into the MGD and capacity building materials. The R&D Coordination Component interacts closely with the other GFOI components and external partners engaged in capacity building activities. There is direct communication with space agencies and commercial data providers to facilitate data access to research groups (SDCG Element-3).



¹ <http://www.gofcgold.wur.nl/documents/GFOI-RD-Activities.pdf>

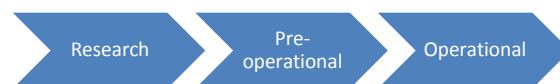
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The R&D component develops and coordinates R&D activities to align with countries' unmet needs.

Tasks include:

- **Identifying methodological and technical issues hindering progress in countries'** monitoring and reporting efforts – and regularly updating these needs through interactions with countries ([see: priority research topics below](#))
- **Joint work planning** to address priority gaps and challenges and in all activities – including with donors
 - A science meeting will be held every 2 years to ensure greater transparency and communication between researchers
- Set up a registry / **database of tools, methods and technologies which are being used actively by countries**
- Assessing and communicating the operational readiness of proposed technologies and methods using **CALM**
- Relating to technologies, methods or tools identified as **Research** ([see: priority research topics below](#)):
 - encourage the formulation of targeted research calls to meet specific R&D gaps and fund promising (early and mature stage) research.
 - Providing a forum for the coordination of existing research activities, focusing on progressing GFOI Priority R&D Topics towards operational status
 - Identifying possible resources and organizations to conduct the research or working collaboratively with these organizations – phasing out the 18 research teams, and allowing other research institutions to work together on these issues
- Relating to **pre-operational and operational technologies**, methods or tools, as defined by CALM
 - Fostering a large and diverse group of experts and practitioners that can be assigned to help address challenges and bottlenecks that hinder progress ([see: expert workshops below](#))
 - Facilitating science meetings, and producing publications and other communication products that synthesize research findings and existing knowledge to support country uptake
 - **Working with the GFOI Methods and Guidance Documentation (MGD)** Component to develop and maintain guidance materials on operational methods and technologies
- Working with the **GFOI Capacity Building Component** to: ([see: capacity building collaborations below](#))
 - support the identification of gaps and training in new methods and technologies
 - act as expert advisors to advocate practical solutions and robust technologies and approaches, while highlighting their potential and limitations
 - Ensuring that new science and technology, as it becomes operational, is considered for improving monitoring efforts and addressing unmet country needs
- Working with the **GFOI Data Coordination Component** to address new science and technologies needed to support improved methods for accessing and using datasets and tools.

Criteria for consistently assessing levels of maturity (CALM) of REDD+ concepts



CALM is a set of quantitative criteria used by GFOI components for internal communication of concepts under assessment relating to co-ordination activities. Concepts assessed by CALM can be processes, technologies, methods, tools and/or data.

Priority research topics

- Use of data from **new satellite missions**
- Integration of **Sentinel data** along with Landsat data for example
- Use of **high resolution data** for targeted sampling in stratified area change estimation (for long-term monitoring)
- **Early warning**: responding to user needs, demonstration and upscaling in the theme of near-real time forest monitoring
- **Biomass mapping from space** taking advantage of 6-7 upcoming missions
- Exploring the idea of **super-sites for key research activities**

Expert workshops: A number of expert workshops have been held to address challenges related to forest monitoring using available methods and guidance. Recently two expert workshops have been held on the topic of uncertainty estimation related to [activity data](#), and related to [emissions factors and the use of biomass maps](#).

Capacity building collaborations: Together with the capacity building component, and in collaboration with other partners, a range of [learning and teaching materials](#) to enable countries to develop capacities and implement REDD+ monitoring and reporting have been developed. This successful model for collaboration will be used in future. Four regional workshops and a webinar series were also implemented as part of the [project sponsored by the World Bank Forest Carbon Partnership Facility](#).

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