

Increasing collaboration and joint outcomes of the GFOI Research and Development (R&D) Coordination Component and Space Data Coordination Group (SDCG)

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At the Global Forest Observations Initiative (GFOI) Plenary in March 2018, Bogota, Colombia, the R&D Coordination Component together with the SDCG discussed methods by which the two components could work together to further the goals of both components and the GFOI as a whole. Input into this process from ESA is formally incorporated through Frank Martin Seifert (ESA) who has taken a position in the Leads Group of GFOI. The Leads Group comprises a number of key institutions who make major contributions to the Initiative and are responsible for overseeing its operations.

The R&D component works on a number of activities in relation to data, tools, and methods which are considered to be either in the research phase, pre-operational or operational, and are subject to continual improvement. Data and tools are assessed using the Criteria for consistently Assessing Levels of Maturity (CALM); a framework that assists the GFOI in its decision making and communication of technology readiness for uptake by countries. It provides the R&D component a set of criteria with which to identify whether more research is required on data / tools or whether guidance should be developed to assist countries to adopt data / tools. For information see [R&D priorities](#) which form the basis for Phase 2 of the R&D Component, and [R&D outcomes from the GFOI plenary 2018](#).

Methods, tools and data which are in the research stage, have previously been investigated by a number of external science teams, mainly from universities and research institutions who have received satellite data from space agencies under GFOI agreements, with the provision that the research focus on one or more of the [GFOI Priority Research Topics](#), identified during GFOI Phase 1. The research teams have been self-managed and self-funded, some working independently, others collaborating with agencies in the countries in which their study sites. For the latest outputs, see the [GFOI R&D Programme Technical Progress Report 17 April 2018](#). The SDCG and the R&D component was managing this task and the Committee on Earth Observation Satellites (CEOS) who as Co-Lead, was responsible for the coordination of satellite data supply.

Although a number of important research questions have already been addressed with this approach, the work of the teams has mostly focused on methodology development on the level of local case studies and with only ad hoc contribution to improved guidance and training for countries. To address this, a revised strategy has been developed by the GFOI R&D together with the SDCG to address priority research gaps that relate more to pre-operational elements and focus more on large-area demonstrations rather than smaller test studies. Such targeted research is more in line with GFOI objectives for enhancing guidance, capacity development, and data supply to fill key gaps in countries.

Phase 1 will be completed in 2019. The existing research program will continue to be monitored until the end of this phase, when a Science Meeting can be foreseen. Research teams will be encouraged to consolidate their research effort and then to move to larger area and national demonstrations. The SDCG and R&D component will pursue stronger cooperation together through this effort.

For Phase 2, the approach will be to focus on a narrower list of research topics, which have been identified through the new GFOI Country Needs Assessment process and through ongoing interaction with country representatives and donors by the R&D team. A close link with the GFOI country needs assessment will ensure the regular updating of these priorities. Key topics will be prioritized for action and targeted research calls and funding support will be sought to ensure that relevant research institutions can work with GFOI to further knowledge in these areas. The list will be continually updated as new needs emerge, and stakeholders are invited to comment on these and propose new topics. Current key topics as discussed in the GFOI Plenary 2018, and which can be directly addressed by R&D and SDCG are:

- Use of data from **new satellite missions**, and integration of **Sentinel satellite data** with Landsat time series
- Use of very **high resolution data** (0.5-5 m) for targeted sampling in stratified area change estimation (for long-term monitoring) to support the wide-scale application of GFOI MGD guidance
- **Early warning**: responding to user needs, demonstration and upscaling in the theme of near-real time forest monitoring in contribution to the GFOI Early Warning task force
- **Biomass mapping from space** taking advantage of 6-7 upcoming missions in a co-ordinated and consistent way in close collaboration with CEOS WGCV LPV efforts

Results from research into the key topics will be discussed and disseminated at Science Meetings which will be organized every 2 years to ensure greater transparency and communication between researchers. Expert workshops will occur more frequently, with the aim of addressing key issues with the use of tools and data which are considered to be operational or pre-operational.

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