



GROUP ON
EARTH OBSERVATIONS

GEO-IX

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Global Forest Observation Initiative (GFOI)
Task Force Progress Report

Document 11

For consultation

Global Forest Observations Initiative Task Force Progress Report

This document has been prepared by the GFOI Leaders and provides an update on the status of the implementation of the Global Forest Observation Initiative (GFOI). The Plenary is requested to take note of the Report and to endorse the proposal to transform the GFOI Task Force into a policy-oriented GFOI Steering Committee, as described in chapter 2.5.

1 BACKGROUND

In 2008, the Group on Earth Observations (GEO) established the Forest Carbon Tracking (FCT) activity to demonstrate that international coordination and cooperation can provide data and information useful for countries in their development of national systems for forest monitoring and reporting. The FCT also pursued capacity building, both of human capacity within the eleven National Demonstrator countries, and technological capacity to process and store the large amount of data being created and utilized.

In 2009, GEO recognized that expanding these demonstrations to global perspective and sustained activity would require fostering the sustained availability of satellite data and ground observations and supporting participating countries in the use of these observations in their national forest information systems. An *ad hoc* Planning Group was established after the 2009 GEO Plenary to develop a concept plan, which was followed by the more formal creation of a Global Forest Observations Initiative Task Force established by the 2010 GEO Plenary. The Task Force had responsibility for the oversight of the GFOI Implementation Plan preparation. The GFOI Implementation Plan was approved by the 2011 GEO Plenary.

Following approval of the GFOI Implementation Plan at in November 2011, the GFOI Task Force met in January 2012 and began development of a governance structure and overall work plan for 2012-2013, coordinating shared areas of endeavour with Forest Carbon Tracking. Figure 1 illustrates the GFOI governance structure and the five areas of endeavour: Coordination of Satellite Data Supply, Capacity Building, Methods and Guidance Documentation, Research and Development, and Administration and Coordination.

2 GFOI PROGRESS SINCE GEO-VIII PLENARY

The GFOI Task Force is pleased to report progress in these five core areas as follows:

2.1 Coordination of Satellite Data Supply

Facilitation of forest observations in support of national forest information systems is a fundamental objective for GFOI. The Committee on Earth Observation Satellites (CEOS) established the Space Data Coordination Group specifically for the purpose of supporting GFOI's requirements for satellite data. The Space Data Coordination Group's first meeting (March 2012) led to a work plan (May 2012) articulating a pathway and schedule to support countries with satellite data to provide wall-to-wall coverage, address specific national needs, and coordinate and encourage GFOI-related research and development. The second SDCG meeting (September 2012) has begun to establish steps to finalise the baseline acquisition strategy (completion in late 2012 or early 2013). The next phase of the SDCG

analysis will look at specific national needs, and will require a mechanism for engagement of participating countries. To date the SDCG participating agencies have collected over 139,000 satellite images over National Demonstrator countries.

The May 2012 version of the SDCG 2012 Work Plan is provided as Attachment A to the GFOI Work Plan (Appendix A).

2.2 Capacity Building

The fundamental objective of GFOI is to help nations develop a capacity to utilise Earth Observation data in a credible national forest monitoring system that can provide input to national MRV systems for GHG emissions and removals in IPCC-compliant reporting to the UNFCCC, REDD+ and potentially future related carbon markets.

Capacity-building has continued from 2010 to present largely through seven focussed workshops organised and funded by US Silvacarbon and supported by Australia and Norway (listed in Appendix B). Additionally Australian-Indonesian and Norwegian-Tanzanian bilateral capacity-building activities have been ongoing in 2012 and will continue.

US Silvacarbon plans an additional six workshops in the 2013/14 timeframe in the Americas, with expansion into Asia and possibly Africa at similar levels during this timeframe.

It will be a priority to develop cooperation with major stakeholder organisations having capacity building as a vital part of their mandate to ensure coordination of capacity building activities crucial to a successful implementation of GFOI.

2.3 Method and Guidelines Documentation

The GFOI Methods and Guidance Documentation (MGD) is intended to provide options and support to countries in the use of ground observations and remotely sensed data and methodologies for the establishment of their national Forest Monitoring and Carbon Tracking systems, focused on addressing REDD+ objectives in compliance with IPCC good practice guidance.

MGD development began in April 2012 with the appointment of an Advisory Group (AG) to guide the development and review of the GFOI MGD (See Appendix C). The AG met on the 31st of May in Washington DC (hosted by the World Bank) to review previously produced methodology documentation and develop a draft document outline.

The MGD is being written by an Authors Team (Appendix C), most members of which met on 26-28 June in a meeting near Tromsø hosted by the Norwegian Space Centre. At that time the team produced an annotated outline of the first draft including headings, writing assignments, and an agreed timeline (see Appendix C) with rough first cut to be provided to Advisory Group for review in October 2012.

The draft will be revised in response to the AG review with the intent to submit the revision for review to GEO-nominated and additional expert reviewers by November/December. The current timeline calls for completion of a technically- reviewed version of the document in February 2013, allowing time for further rigorous review including some field testing by participating countries in the March-August 2013 time frame before the final document is submitted for endorsement by the GEO-X Plenary in November 2013. The document will acknowledge authors, advisors, and reviewers.

2.4 R&D Plan

As new sensors and related capabilities emerge, new methodologies are developed to use these in management and reporting of forest systems. The conventional forest data products of future MRV reports are current areas of research and development.

The GFOI Implementation Plan explicitly did not include a budget for GFOI R&D, leaving this as an area to be further addressed through GFOI and synergies with other R&D and donor organisations. Against this backdrop the GFOI community is developing a draft R&D plan which identifies priority areas where research is required to achieve its goals. Identified priorities include forest degradation; mapping of particular forest types (mangrove, peat forests, etc); interoperability; comparison of uncertainties associated with different forest biomass estimation methodologies including allometric considerations; and data-model integration.

GFOI is drafting a request for proposals to address forest degradation characterisations while developing data provision arrangements with SDCG and exploring complementary interests with research-funding organisations.

2.5 GFOI Governance, Administration and Coordination

GFOI Governance (Figure 1)

Implementation of GFOI's objectives will require coordination and communication across the range of stakeholders including advisory, leadership and parent bodies, the participating science and technology community, the forest countries GFOI wishes to serve, the UN bodies intended as recipients of forest country reports, potential donors, etc.

GFOI and FCT had been individual but closely cooperating work streams within GEO, and several of the leaders of the GFOI component are also leaders in the FCT. In compliance with the recommendations of the July 2012 Executive Committee meeting GFOI and FCT are moving to merge activities into GFOI.

Having completed a great portion of its implementation phase activities in 2012 the GFOI Task Force proposes to assume responsibility in a new incarnation as a policy-oriented Steering Committee at the November 2012 GEO Plenary. The governance diagram in Figure 1 below reflects the new role of the Task Force as the GFOI Steering Committee.

GFOI Work Plan 2012-2013

The GFOI Lead Team was established at the January 2012 GFOI Task Force meeting and in June 2012 released a detailed work plan for 2012 and 2013 (Appendix A).

GFOI Office Staffing

The GFOI Implementation Plan anticipated the creation of a small program office to provide support for and cohesion between its many elements. The GFOI Office will help to keep objectives in focus across the many contributing activities, provide a coordination and communication mechanism across the stakeholders, and work with participating countries, lead and donor countries, relevant UN organisations, and bodies and multinational organisations to maintain the relevance and value of GFOI operations, as well as to identify candidate host organisations for a longer term venue for the GFOI Office.

The GEO Secretariat released a vacancy notice for the position of GFOI Office Coordinator with a deadline for applications on 31 October 2012.

3 NOTIFICATION

As of the GEO-IX Plenary, we anticipate that the GFOI Task Force will be redesignated the GFOI Steering Committee.

4 PENDING/PRIORITIES

Evolving participation of recipient countries: the initial phase of FCT/GFOI country participation through the National Demonstrators and the establishment of the SDCG to provide for data acquisition and provision were critical proof-of-concept steps in validating the premises of GFOI.

The GFOI Task Force recognised the need to articulate roles and responsibilities with GFOI-participating countries including the National Demonstrators in its 21 September meeting and agreed on general principles and next steps to accomplish this in coming months.

In coming months the FCT/GFOI leads, current National Demonstrators, and anticipated new participating countries will move toward implementing the next stages of country participation in GFOI.

Linkages forum: Early in 2012 the GFOI Task Force recognised the Linkages Forum concept requires fundamental consideration and moved to postpone its organisation by at least one year. The Task Force recognises that such a forum may be of more value if addressed regionally along lines of more particular donor/recipient requirements, and the GFOI Leads are exploring this approach.

5 RECOMMENDATIONS TO THE GEO PLENARY

Noting significant progress after a delayed start due to personnel changes:

Accept this report including the redesignation of the GFOI Task Force as the GFOI Steering Committee.

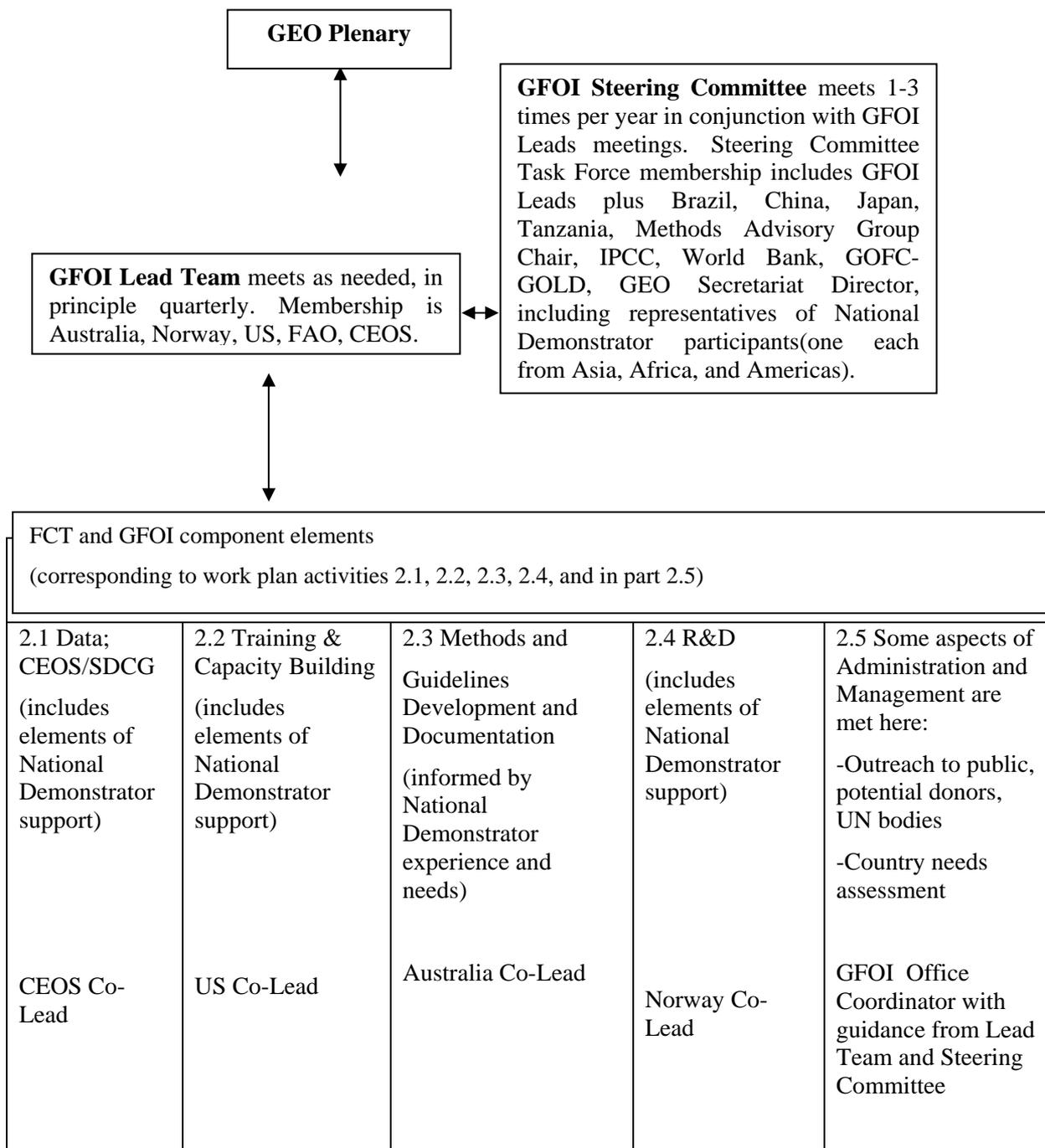


Figure 1. Governance of GFOI

Notes for Figure 1:

2.1 The CEOS SDCG was developed to prepare for longer term GFOI data requirements. The group used the provision of data for the National Demonstrators as a vehicle for establishing broad-ranging principles of data acquisition and delivery which will continue to serve GFOI. SDCG held its inaugural meeting in March 2012 under GFOI auspices.

2.2 The FCT community augmented by US Silvacarbon will continue to be responsible for Training/Capacity Building. Development of criteria for inclusion of participating countries will be coordinated between GFOI Leads. In coordination with this GFOI Office will undertake strategic assessment of potential participants' national needs.

2.3. Methods and Guidelines Documentation began under FCT auspices in 2010 to prepare for longer term GFOI data product requirements to meet international standards. When this first exercise is completed (nominally end of 2013) the Methods and Guidelines Development working group will meet as required to provide documentation updates.

2.4 Research and Development (R&D). While GFOI does not have a research budget, the GFOI Implementation Plan commits GFOI to promoting ongoing research and development. Such research is expected to have a key role in incorporating emerging technologies into GFOI and thus participating countries' approaches to forest characterisation. Funding of R&D is typically at the discretion of the co-leads and other supporting countries/organisations, and results of the R&D are showcased in vehicles such as the annual Science Data Summits.

(Figure 1 adapted from the GFOI Work Plan for 2012-2013; see Appendix A)

Appendix A

GFOI WORK PLAN FOR 2012-2013 INCLUDING MAY 2012 SDCG WORK PLAN

Global Forest Observations Initiative (GFOI) Work Plan for 2012 and 2013

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- Coordination of satellite data supply
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 - Alternative data to fill CEOS science data gaps
- In situ data

2.2 Capacity Building in Forest Countries

- Continued work with the National Demonstrator countries to develop standardised routine processes (including links to international organisations and country-specific arrangements)
- Capacity Building (2012-2013 planned activities and lead organisations/countries)

2.3 Developing Methods and Guidelines Documentation

- Production of the Forest Carbon Tracking (FCT) Methods and Guidelines Documents (FCT Leadership; see Attachment A)

2.4 Ensuring coordinated Research and Development (R&D)

- R&D closely linked to satellite data, e.g. intercomparability between different sensors, protocols for use of new sensors as these become available

2.5 Administration and Management

- Governance of GFOI
- Establishment of the GFOI Program Office (staffing and definition of budget for the year's activities)
- Develop and oversee GFOI Program Office work plan
- Feasibility studies of a long term "home" for GFOI, including transition of the GFOI Program Office if so indicated.
- Outreach/Communication Plan

3. Budget and Funding

- GFOI Program Office staff and administration
- Anticipated contributions and strategy for dealing with shortfall
- The long term financial scenario

4. References

5. Attachments

1. Background

In 2008, the Group on Earth Observations developed the Forest Carbon Tracking (FCT) program to support countries in the development of national systems for forest carbon tracking, specifically by demonstrating that international coordination and cooperation can provide data and information useful by these countries for their national monitoring and reporting. These observations are necessary for measuring emissions associated with forests which, including deforestation and associated land-use change, amount to over 17 % of all global greenhouse gas emissions. A key to documenting such emissions reduction is a credible forest monitoring system.

The FCT community, augmented by the U.S. SilvaCarbon program in 2010, has initiated work on methods and guidelines for comparability, interoperability in satellite observations and integration of these with ground measurements to support national forest monitoring systems.

Working with governments, space and forest agencies, scientists and international organizations, the projects of FCT have been testing options within the National Demonstrator countries which participated in this initiative. The projects have achieved considerable progress, helping to define appropriate and available source data; working with the CEOS community to acquire the data and assist with pre-processing; and testing and refining methods of inter-annual comparisons. Additionally, the FCT has worked on capacity building, both of human capacity within the National Demonstrator countries and technological capacity to host the large amount of data which will be created and utilized.

In 2010, it was recognized that the coordination of satellite image data providers and pre-processing centers and provision of methodological guidance for using the data would be necessary for a consistent system. This is now being developed as the Global Forest Observation Initiative (GFOI).

The FCT program will finalize its first set of guidance documents in late 2012/early 2013. These documents will serve as the basis for FCT and GFOI methodology in adherence to standards of multilateral organisations such as the IPCC through its greenhouse gas inventory programme. FCT has started the next set of methods testing and capacity building and this is expected to continue in the foreseeable future.

GFOI Goals

Building the GEO Forest Carbon Tracking (FCT) heritage, the Global Forest Observation Initiative (GFOI) aims to help countries develop efficient and sustainable forest monitoring systems. Its mission is to:

- A) foster sustained availability of satellite and ground observations in support of national forest information systems; and
- B) support countries in the use of observations for their national forest information systems—respecting national choices of data and tools.

GFOI seeks to facilitate such a supply and use of remote sensing data streams that can be used free-of-charge for GFOI purposes and with FCT will support international capacity building efforts in forest monitoring and reporting in developing countries in Asia, Africa, and the Americas which may be of use in developed countries as well.

FCT's capacity building activities currently include the acquisition and utilisation of in-situ data. GFOI anticipates improving this area through coordinating in situ capacity building efforts with organisations specialising in these areas.

GFOI aims to help participating countries manage their natural resources as suits their national requirements. Thus approaches to observation and data use must be tailored to the national needs of participating countries.

GFOI Institutional Background

In November 2011 the Group on Earth Observations (GEO) VIII Plenary approved the Global Forest Observations Initiative (GFOI) Implementation Plan (IP; Document 15). The GEO 2012-2015 Work Plan and the Work Plan Management (Document 21) provide the institutional framework for the implementation of GFOI and continued operations of the GEO Forest Carbon Tracking (FCT) activities. As described in the GEO Work Plan 2012-2015 Revision 1, the Information for Societal Benefit SB-03 (Global Forest Observations) consists of two components:

C1: FCT Activities for Observational and Methodological Guidelines, and

C2: Definition, Implementation and Operations of the GFOI in Support of National Forest Information Systems.

The two components have partly overlapping Leadership, with Australia, Norway, USA, the Committee on Earth Observing Systems (CEOS) and United Nations Food and Agriculture Organization (FAO) being represented in both components. Representatives of these five entities constitute the GFOI Task Lead Team. The GFOI task will build upon and continue the activities of FCT, and a close coordination of FCT activities with GFOI implementation is thus envisaged.

GFOI has a particular significance for GEO. GFOI was proposed and accepted with the intent that its activities would within some two years establish a long term operating scenario, presumably within a "home" organisation. Developing the pathway toward institutionalising standardised application for GFOI could create a template for establishing further standardised applications across GEO's Societal Benefit Areas.

The preparation of this Work Plan is based on the GFOI Implementation Plan developed under the guidance of the GFOI Task Force. The Task Force will make a submission to GEO Plenary IX proposing to assume responsibility in a new incarnation as a policy-oriented Steering Committee for the GFOI Task. The "hands-on" direction of activities will be governed by the GFOI Lead Team.

The FCT has developed collaboration with selected countries in the use of Earth Observation for domestic forest management and international reporting purposes. The collaboration includes demonstrations and developments of new approaches in the use of Earth Observation data as well as developing avenues for provision of data and training in its processing and interpretation.

This effort will continue in coming years and results will be documented regularly.

While the FCT will continue research-oriented demonstration and testing functions, the 2012

Start-up Phase of the GFOI represents the creation of a sustained provision of satellite observations for forest status and change measurement. GFOI's timeline for transition to long term arrangements requires focused coordination and scheduling that will be effectively maintained by a dedicated GFOI Office. Besides coordination of ongoing technical interaction (e.g. data storage and access, quality control, data use policy, methodology inquiries) the GFOI Office will have responsibilities such as supporting the GFOI Task Force evaluation of candidate host organisations, identifying and developing external funding sources, liaison with international organisations (inter alia, FAO, World Bank, Intergovernmental Panel on Climate Change/IPCC, United Nations Framework Convention on Climate Change/UNFCCC) and liaison with the GEO secretariat.

Developing sustainable solutions to the range of administrative challenges will require close communication with the GFOI Lead Team.

This Work Plan

In the following pages this work plan describes the activities to be undertaken during the GFOI start-up phase over the coming year and a half. The plan is laid out in accordance with the key components identified in the GFOI implementation plan for 20-12/2013. Section two deals with these in detail: 2.1 Facilitation of Satellite Data Supply, 2.2 Capacity Building in Forest Countries, 2.3 Developing Methods and Guidelines, 2.4 Ensuring Coordinated Research and Development, and 2.5 Administration and Management.

2. Main Activities for 2012 and 2013

2.1 Facilitation of Satellite Data Supply (interface with CEOS)

Facilitation of forest observations in support of national forest information systems is a fundamental objective for GFOI. CEOS has established the Space Data Coordination Group (SDCG) specifically for the purpose of supporting GFOI's requirements in publicly available Earth Observation data. The points of contact for SDCG will be the co-chairs. Attachment A (the CEOS Space Data Coordination Group 2012-2013 Management Plan) provides further detail to the work elements outlined in section 2.1.

Coordination of Satellite Data Supply

Data Acquisition

The SDCG has an initial focus on coordination of the acquisitions (the first step, ensuring that the necessary coverage is acquired on an on-going basis).

Year 1 (2012): The SDCG 2012 Work Plan (Attachment A) and GFOI Project Office planning anticipate:

1. Establishment of the SDCG and terms of reference (Mar 2012).
2. Development of GFOI dataset requirements (Mar 2012)
3. Development of a first draft of the baseline global data acquisition strategy – the background coverage guaranteed to provide necessary data supply to all countries in need (Oct 2012).

4. Inform GFOI of data gaps which may require purchase/negotiation of alternative data sources (October 2012)
5. Ongoing data acquisitions in support of FCT & National Demonstrator needs, with possible expansion to include more REDD+ countries (during 2012).
6. Initialising planning for national data acquisitions (late 2012).
7. Liaise with GFOI on the development of interface(s) with commercial data providers and possible data donors to optimise their acquisition strategies and donations (late 2012).
8. Concur with FCT/GFOI on data process/packaging and distribution process

SDCG-1 Meeting: 6 – 8 March, 2012 – Montreal

SDCG-2 Meeting: 13-14 Sept, 2012 – USA (TBC)

CEOS Plenary (adoption of the baseline strategy): 24-26 October, India

Year 2 (2013): In 2013, the SDCG activity will focus on the development of the national data acquisition strategy and will continue ongoing data acquisitions in support of FCT and National Demonstrator needs, including possible expansion to include more REDD+ countries. It will initiate the development of the national data acquisition strategy – dependent on there being suitable engagement of governments and available information on their national needs.

Data processing and supply

Mere acquisition of data is not sufficient, and measures need to be taken to facilitate the processing and supply of data to the national governments. There are no sustained institutional means in place at present for this to happen. GFOI will in its initial phase have to address these issues and take measures to find mechanisms to make different satellite data sets ready to use to create forest information products.

Steps are being taken for the CEOS Land Surface Imaging Constellation (LSI – USGS, INPE, ISRO and others) to develop one or more examples of a demonstrator national dataset for a collaborating government.

Data Access

The GEO-FCT portal (<http://www.geo-fct.org/>) is the foundation for an information system to serve as a meta-database on availability of geospatial information in support of national forest information systems, including satellite data acquisitions.

Year 1 (2012): The GEO-FCT portal will continue to evolve and become a working tool central to GFOI operations. Its content will be periodically updated.

Year 2 (2013): The GEO-FCT portal configuration will reflect the presence of consistent data sets accumulated under GFOI auspices as well as ongoing FCT data.

Alternative data to fill CEOS science data gaps

The SDCG will identify areas where CEOS/public good data may leave gaps that might be addressed using commercial satellite data sources or in situ data. GFOI leadership will consider strategies for addressing the gaps.

Year 1 (2012): SDCG provides assessment of data gaps. The GFOI leadership develops strategy to address gap through developing pathways for acquisition and donation of commercial data.

Prepare Cost/Benefit Analysis of purchase and use of alternative data sources to fill current data shortfall vs continue as usual with limited data resources through 2012 (late May)

Year 2 (2013): For data which are not generally publicly available, a model contract will be developed that defines the terms and conditions for satellite data access to GFOI-sponsored countries, and use and reuse conditions.

In situ data

GFOI's focus is on the provision and use of remotely sensed Earth Observation to support national systems of forest observations. From a stand-alone perspective satellite observations are more effective in characterising deforestation than forest degradation. While GFOI activities cover use of in situ data to support Earth Observation studies, this is an area that will require expansion , especially to address forest degradation. Therefore GFOI will need to coordinate its activities with organisations adept in capacity building in in-situ observation (starting in the 2012/2013 timeframe) to provide effective ground truth.

2.2 Capacity Building in Forest Countries (joint with FCT)

The fundamental objective of GFOI is to help nations develop a capacity to utilise Earth Observation data in a credible national forest monitoring system. GFOI is meant to have a global capability, but its actions take a national focus tailored to the requirements of the country.

The meaning of the term “National Demonstrators” is evolving. It was initially coined to refer to the demonstration of FCT's ability to provide earth observation data (through SDCG) and develop capacity to utilise it with a suite of participating countries, as well as to refer to sites designed to demonstrate new technologies and approaches (e.g. Tasmania).

While these roles, possible new roles, and possible new pathways are under discussion, capacity building activities will continue:

- Continued work with the National Demonstrator countries to develop routine standardised processes
- Develop criteria for addition of new countries to participate which include official recognition of national participation in the program and development of mutually agreed end goals and pathway.

- These criteria will also reflect priorities of UN REDD+, FAO, World Bank FCFP
- Expand participation in GFOI based on existing national needs assessments and discussion between FCT, GFOI, potential new partner countries and multilateral bodies mentioned above..
- Continued work in Capacity Building including increasing numbers of trainers and developing FCT/GFOI training modules so that methodology instruction reaches greater numbers.
- Develop criteria for “graduation” from National Demonstrator status.
- Develop avenues for National Demonstrators “graduates” to have continued involvement in FCT/GFOI.

National Governments & Capacity Building:

Year 1 (2012):

Training courses on documents and applications

Needs assessments undertaken following consultation with UN REDD and FCPF at conclusion of their joint development of a Needs Assessment Methodology (expected June 2012)

National Demonstrators formalised with national governments - formally linked to REDD/MRV efforts in country

Sample national datasets developed

Year 2 (2013):

Training courses on documents and applications

Expanded national datasets and repeat datasets to show time series

2.3 Developing Methods and Guidelines (GFOI building on FCT)

Methods and Guidelines Development and Documentation began under FCT auspices in 2010 to support countries in their effort to build national forest monitoring systems and prepare for longer term GFOI data product requirements to meet international standards. When this first exercise is completed (nominally end of 2012/early 2013) the Methods and Guidelines Documentation working group plans to reconfigure itself under GFOI auspices to provide documentation updates as required.

GEO currently has no rigorous documentation approval process. This will be essential if the GEO documents are to be compatible with the related IPCC & UNFCCC processes. As the GFOI office moves toward standardised procedures, this must be addressed to ensure credibility for the GFOI outputs and confidence in their adoption by governments.

- A qualified advisory committee is needed to oversee the review and revision of the M&G documents. The Chair of the committee should have previous experience of documentation processes within IPCC and UNFCCC.
 - Production of the FCT/GFOI Methods and Guidelines (M&G) Documents by early 2013 (see nominal timeline and current suite of draft documents in Attachment B)

The documents will identify their authors, as well as the authority under which they were published (at least to the point of attributing the document group responsible and identifying the participants in that group) in order to underscore the duty of care involved. The documents may be assembled into a single volume to emphasise coherence, , and may

have an online wiki form to allow hyperlinks to appropriate sites such as IPCC and GOFCE-GOLD.

Methods and Guidelines Outcomes:

Year 1 (2012):

- Develop an approach consistent with IPCC, FAO, FCPF, GOFCE-GOLD published guidelines:
- Organise Advisory Committee and nominal timeline for review and revision (May 2012)
- Agree upon and prepare full set of MG documents drafts (May/June 2012)
- Arrange Advisory Group and Authors meeting (June/July 2012)
- Apprise ExCom of review process (July 2012)

Year 2 (2013):

- Finalise documents
- Ensure awareness within IPCC, UNFCCC
- Promote use of documents with national governments and capacity building activities

Authors will be contracted where necessary. Subsequent activity will be needed to support the documentation and develop it as necessary.

2.4 Ensuring Coordinated Research and Development (FCT)

The main objective of the R&D activities is to promote further integration of the current and near-future observation systems and, importantly, to progress integration of satellite data into carbon models. The R&D program will support the different components of the M&G documents.

The range of Earth Observation sensors available is constantly expanding. Newer sensors offer new possibilities for improving the characterisation of forest extent and condition from space. A robust research and development program can help to develop a rationale for bringing some of these new capabilities out of the R&D realm and into routine, standardised use. This will require understanding how to combine data from sensors and ground-based information to enhance the final data products, analysis of the cost/benefit of combinations, and developing credible means of relating satellite Earth Observations into information products, carbon models, and ultimately national reporting mechanisms.

There is a need:

- For R&D to be closely linked to satellite data, e.g. interoperability and complementarity between different sensors, protocols for use of new sensors as these become available
- To establish new R&D topics to progress integration of satellite data into carbon models and into national systems to produce actual estimates of carbon stock changes.
- To link the R&D topics with demonstration plans in the National Demonstrators established for R&D purposes (e.g. Tasmania).

Research and Development Outcomes

Year 1 (2012):

Further develop R&D plan with timeline; articulating specific priority areas (prepare in time frame so that this could be “vetted” at MGD authors meeting in June/July 2012)

Progress new R&D topics (integration with C models)

Prepare applications for funding using revised R&D plan

Develop approach to NGO and government science organisations for funding and/or in kind support of relevant R&D.

Year 2 (2013):

Modify R&D plan and timeline based on knowledge gaps raised by M&G documents

2.5 Administration and Management

GFOI’s objectives and stakeholder interactions call for extensive communication and coordination. The GFOI Lead Team will establish the GFOI Office in coordination with the GEO Secretariat. The GFOI Office will help to keep objectives in focus across the many contributing activities, provide a coordination and communication mechanism across the stakeholders, and work with National Demonstrators, lead countries and multinational organisations to maintain the relevance and value of GFOI operations. Attachment C lists respective tasks and duties of the GFOI Lead Team and the GFOI Office.

- Governance of GFOI

The implementation of GFOI’s objectives will require coordination and communication across the range of stakeholders including advisory, leadership and “parent” bodies, the participating science and technology community, the forest countries GFOI wishes to serve, the UN bodies intended as recipients of forest country reports, potential donors, etc.

The GFOI Implementation Plan anticipated the creation of a small program office to provide support for and cohesion between these many elements.

GFOI and FCT are individual but closely cooperating work streams within GEO, and several of the leaders of the GFOI component are also leaders in the FCT. However it is important for a range of reasons to maintain the identity of the FCT community. This relationship is illustrated in the governance diagram below, which indicates the interactions of FCT leadership with GFOI coordination and communication as well as the leadership and/or participation of FCT in the technical elements of GFOI.

The GFOI Task Force will propose to assume responsibility in a new incarnation as a policy oriented Steering Committee at the November 2012 GEO Plenary. The governance diagram in Figure 1 below reflects the new role of the Task Force as the GFOI Steering Committee.

- Establishment of the GFOI Office

Staffing

Although the original GFOI Implementation Plan anticipated that a GFOI Office would require several dedicated personnel, it will be more efficient to start small and expand as needed, perhaps filling short-term gaps with short-term arrangements.

Through the contributions of Norway and Australia, the GFOI and FCT efforts currently have two full time staff located at GEO Secretariat. In addition Norway, Australia and the US fund several individuals, mostly in the “satellite data expert” area, to provide support from their home bases. Furthermore dozens of individuals supported by their home institutions and countries provide support to FCT and GFOI through participation in various committees and working groups. This support is anticipated to continue after the GFOI Office is established.

The staff position required most urgently pertains to the GFOI Office Leadership, i.e. a GFOI Coordinator to interface with GEO leadership, the GFOI Lead Team, GFOI Steering Committee, FCT leadership, forest countries and the wide-ranging communities of international organisations and space organisations.

Next Steps in Staffing. The GFOI Lead Team and GEO Secretariat should agree on a way forward to filling the GFOI Coordinator position by mid-late May. These parties will develop a position description and advertise a term appointment through GEO Sec/WMO. The term should be up to 2 years to cover transition to host organisation, perhaps allowing for extension of term by mutual agreement of the individual, the GFOI Lead Team, and the host organisation. Ideally a procedure can be decided and implemented such that the GFOI Coordinator would commence in that position as early as possible but no later than July 1, 2012. The budget for this position (see section 3) assumes a start on 1 July.

While the GFOI Coordinator reports routinely to the GFOI Lead Team for programmatic supervision, a key question will be to whom the GFOI Coordinator reports as his/her administrative supervisor. The GFOI Implementation Plan assumed this would be the Director of the GEO Secretariat, but this is an integral issue which the GFOI leadership must consider, particularly as the anticipation is for the GFOI Office to relocate in the 2013-2014 timeframe.

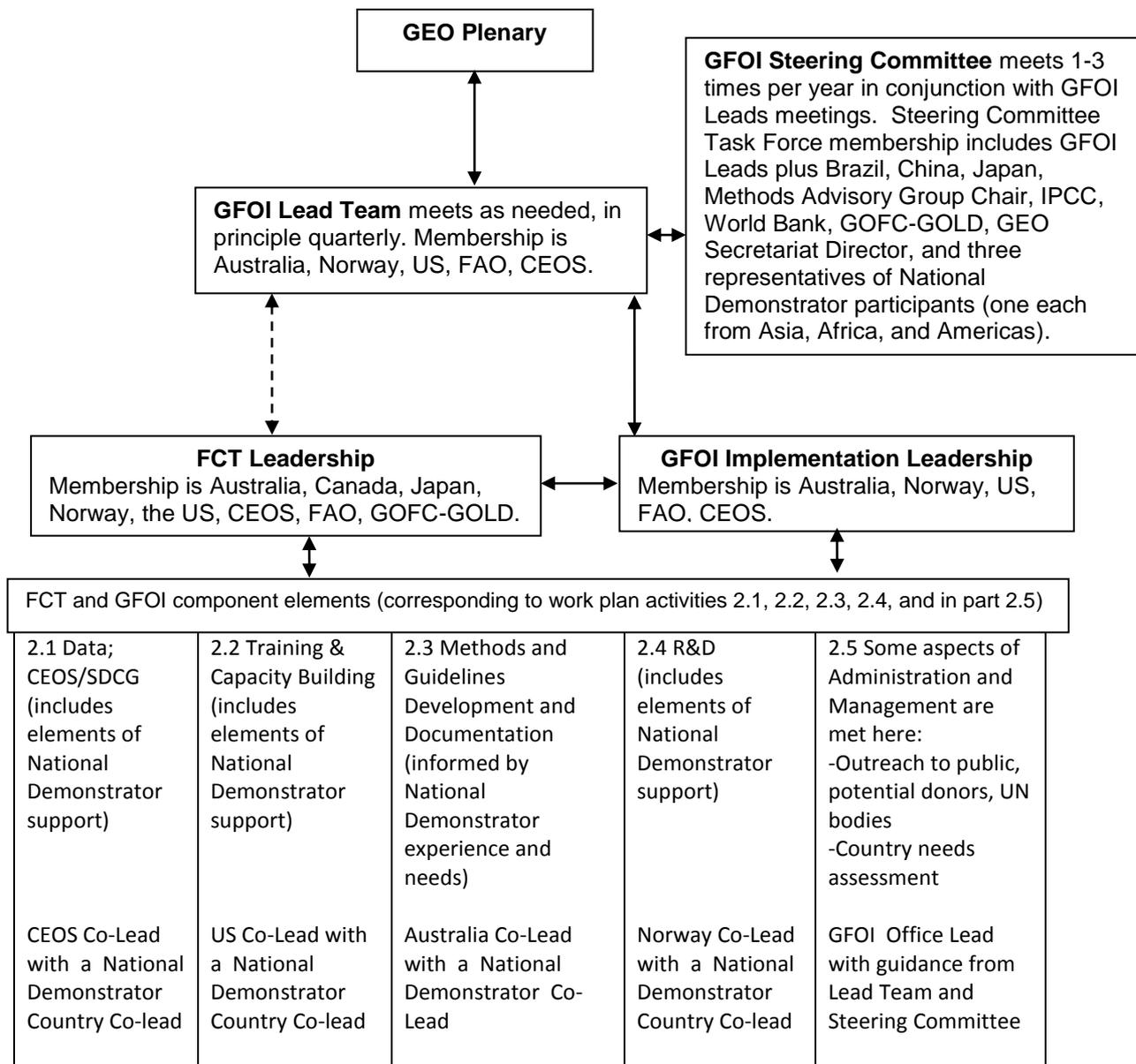


Figure 1 Governance of GFOI Component with reference to coordination with FCT Component

Notes for Figure 1:

2.1 The CEOS SDCG was developed under FCT auspices to prepare for longer term GFOI data requirements. The group used the provision of data for the National Demonstrators as a vehicle for establishing broad-ranging principles of data acquisition and delivery which will continue to serve GFOI. SDCG held its inaugural meeting in March 2012 under GFOI auspices.

2.2 The FCT community augmented by US Silvacarbon will continue to be responsible for Training/Capacity Building. Development of criteria for inclusion of additional participating countries will be coordinated between FCT and GFOI. In coordination with this GFOI Office will undertake strategic assessment of potential participants' national needs.

2.3. Methods and Guidelines Documentation began under FCT auspices in 2010 to prepare for longer term GFOI data product requirements to meet international standards. When this first exercise is completed (nominally end of 2012) the Methods and Guidelines Development working group plans to reconfigure itself under GFOI auspices to provide documentation updates as required.

2.4 Research and Development (R&D). While GFOI does not have a research budget, the GFOI Implementation Plan commits GFOI to promoting ongoing research and development. Such research is expected to have a key role in incorporating emerging technologies into GFOI and thus participating countries' approaches to forest characterisation. Funding of R&D is typically at the discretion of the co-lead and other supporting countries, and results of the R&D are showcased in FCT vehicles such as the annual Science Data Summits.

--FCT is not subsumed under GFOI, however the dashed line is included to indicate the close communication and coordination between these two elements.

Appropriate allocation of responsibilities and tasks between the two positions in the GFOI Office will become clear during the initial months of operation with a Coordinator in place. This will inform the recruiting process with respect to further personnel action that may be required.

Establishment of Office

The GFOI Lead Team should develop a simple agreement with the GEO Secretariat for implementation of the office within GEO's office area at WMO. This will detail office space and location (ideally appropriately-sized offices in close proximity), use of common facilities such as conference rooms, and access to infrastructural support.

Acceptance of this work plan by the GFOI Lead Team confirms their commitment to provide funds for 2012-13 as indicated in Section 3. Upon acceptance of this work plan the GFOI will be poised to commence recruitment of GFOI Coordinator and other positions as necessary/agreed.

Feasibility studies of a long term "home" for GFOI will be conducted, including transition of the GFOI Office if so indicated. This methodology will be summarised in a paper to be presented at the next GEO Plenary including:

- A mutual articulation of expectation with multinational organisations (e.g. IPCC, FAO, UNFCCC, World Bank). This would help focus data acquisition and processing priorities and further validate GFOI's mission.
- A clarification whether current provisions of data & services which are voluntary and not budgeted can be assumed in a routine, institutionalised scenario. If not, the GFOI community needs to understand costs associated with these voluntary services and the impact on an institutionalised scenario should the cost be prohibitive or the service not available through other means.
- Analysis of possible candidates for long term hosting of GFOI.
The GFOI Office and the GFOI Lead Team need to develop evaluation criteria for potential hosts including compatibility of missions, accessibility of venue, whether/what the host venue is able to offer in terms of infrastructural support, etc. Such criteria might include:
 - Type and strength of linkages between the host organisation and GFOI,
 - Complementarity of the GFOI Office and the candidate host,
 - Synergies of operations
 - Potential for enhanced perception of GFOI through its affiliation/identification with the host organisation
 - Financial considerations e.g. level of host support of Program Office, indirect costs to program office donors, etc.
- GFOI "Business Plan" addressing long term scenarios for resources and funding.
 - Provide work plan for GFOI Office including tasks and timelines.

- (detailed in Attachment C)
- Outreach/Communication Plan including:
 - broaden GFOI awareness and support within International Organizations, potential donors and potentially participating countries.

Administration and Management Outcomes are summarised below. Attachment C provides further detail regarding the tasks leading to the outcomes.

Year 1(2012):

- Develop budget, secure funding and human resources
- Establish GFOI website for internal and external communication (complete by end May 2012)-Initialise the GFOI Office, including appointing a GFOI Coordinator
 - GFOI Lead Team develops job description and appointment process with GEO Secretariat (May 2012); commence implementation (May/June 2012)
 - Norway and Australia, respectively, to develop documentation with GEO Secretariat to transfer funds to GFOI Trust Fund account
- Commence exploring institutional candidates for long term hosting
- Coordinate within IPCC, UNFCCC

Year 2(2013):

- Coordinate within IPCC, UNFCCC
- Liaise with national governments
- Support and update documents
- Recommend long term institutional host arrangement
- Commence planning transition to institutional host

3. Budget and Funding

The GFOI GEO participants support GFOI activities through supporting the contribution of their personnel to meetings, documentation, capacity-building activities, etc.

In addition to these in-kind arrangements, Norway and Australia are prepared to support the GFOI Program Office, subject to concurrence on the budget and work plan outlined in this document. The resources would be transferred to the World Meteorological Organisation and accounted for independently of the host GEO Secretariat office.

The budget for GFOI Office is based on the activities listed in the previous sections. It is assumed that the Program Office will commence operating from the second half of 2012 with a staff of 2 ½ person-months per month during this year. The detailed assumptions for the budget are given in Attachment D. These assumptions include:

- The office will be co-located with the GEO Secretariat and will “buy” administrative/office services from the Secretariat
- The office will be staffed by two full-time persons during the initial year(s) assisted by short term consultants
- For purposes of budget construction the salary levels are based on rates used by WMO/GEO

Table 1 summarises the budget requirements of a GFOI Office. These numbers do not attempt to capture the in-kind contributions of the many organisations supporting GFOI. Such contributions include the efforts of CEOS, the participation of personnel from GEO members and participating organisations in GFOI meetings, and domestic support of contributions to GFOI by various participating countries. Attachment D contains detail on basis and assumptions leading to Table 1.

Year	Total	WMO 7% indirect costs	Staff	Office Support	Meetings	Staff Travel	National Capacity Building	Methods and Guidelines
2012*	584	39	263	75	35	69	55	55
2013	1,023	73	525	123	35	138	110	33
2014	1,018	67	525	123	35	138	110	33
2015	1,032	68	525	136	35	138	110	33

*six months

Table 1. GFOI budget for 2012-2015. Numbers are in thousands of USD (using exchange rate of 1 CHF = 1.1 USD)

As seen from the table the budgeted costs amount to about USD 1M per year from 2013. About half of this is staff costs. Costs of office rental, support and WMO overheads are obtained from the GEO Secretariat. Costs of meetings, extensive staff travel, capacity building and the production of methods and protocols are estimated based on the specified activities. There are clearly uncertainties linked to the cost estimates, the basis for which needs to be further detailed in annual budgets. Such budgets need to be reconciled with expected and committed funding to secure a sustained operation.

Currently Australia and Norway anticipate providing roughly equal levels of resources to support the GFOI Office costs for 2012 starting about mid-2012 and some 80-100 % of the current estimated cost for 2013-2014. Table 1 currently shows a conservatively estimated shortfall of up to some \$200K in 2013 and 2014 depending upon several factors, such as whether current capacity building efforts can be assumed to continue being supported outside of GFOI Office means (if so the estimated shortfall decreases significantly), or whether other countries donate resources toward GFOI.

- The overall long term financial scenario

Table 1 focuses on GFOI Program Office costs and thus does not capture the overall GFOI effort. If GFOI is to develop a standardised routine capability with certain responsibilities for provision of information to/with its host organisation, then the role and responsibilities of participating organisations must be clarified. GFOI is dependent on the current public good data providers being prepared to commit to long term obligations. Will current voluntary contributors of related services and activities be similarly prepared to continue with these contributions? If not, GFOI must be able to identify other means of fulfilling these obligations, including the identification of resources for this.

These issues must be clarified in 2013/2014 as part of the transition to host organisation.

4. References

Global Forest Observations Initiative (GFOI) Implementation Plan (IP); GEO VIII Plenary (2011) Document 15
GEO Work Plan 2012-2015 Revision 1, December 2011

5. Attachments

A. SDCG Work Plan-Current Revision - Attached

B. Current Methods and Guidelines Documents Status (page 16)

C. List of GFOI Administrative and Management Tasks (page 17)

D. GFOI Budget Detail (page 18)

E. Current points of contact in the GFOI organisation (page 19)

Attachment B. Nominal review and revision timeline to develop Methods and Guidance Documentation (MGD) and current status of draft documents.

2012

February-GFOI country co-leads agree that Australia will lead pursuit of this area.

March -Australia invites Dr. Jim Penman to chair an advisory group (AG) made up of technical expertise and IPCC, MRV, & UNFCCC expertise.

April-invitation to participate in AG is issued. Includes invitation to AG to a one day session in **May** to assess current documents for end-to-end completeness, identify gaps, redundancies and unnecessary sections in the papers. Added some authors/sections as a result.

April-checking availability of current Documents authors to continue, define available resources to support writing and finalize proposed authors list before the AG one-two day session in May.

May- first AG meeting as described above. Draft Terms of Reference finalised .

June-as early as possible following May AG meeting the authors and AG will meet, discuss AG recommendations re: overall content revision as appropriate and achieving compliance w/IPCC practices. Some rewrite to take place during workshop.

July-invite GEO members and Participating Organizations to nominate reviewers for a review to start in October and last about three months

June/July to Sept/Oct- electronic correspondence during rewrite. Aim for reviewable drafts by **end of October**.

Oct/Nov-commence external review of documents; aim for completion by end of calendar year/early 2013

Nov-status report included in GFOI report to GEO IX Plenary

2013

Jan-Feb -electronic correspondence during digestion/response to reviews

February-AG and Authors meet for finalisation of documents

April-publication of Methods and Guidance Reference beta version

April-Sep-field testing of Methods and Guidance Reference

Sep-Oct-revisions as necessary from field test

Nov-submission for approval at GEO Plenary X and publication

Document will include attribution of Advisory Group, Authors, Reviewers

Attachment C. List of GFOI Administrative and Management Tasks (Section 2e)

C1 GFOI Lead Team tasks

- Define office program including specification of work, job descriptions, assignment of responsibilities, available budget, and staffing (2012)
- Mobilise funding for GFOIs operations/prepare for a GFOI Trust Fund (2012-)
- Establish, resource and manage the GFOI Office (2012) including development of near term workplan (tasks and timelines to be pursued in the 12-24 months following establishment of the office).
- Clarify and establish GFOI Office's institutional location and hosting of its office (2013-2014) (with support from GFOI PO)
- Progress the priority methods and guidelines documentation with goal to present for acceptance at the 2012 GEO Plenary (2012); update as appropriate. (Australian lead with support from GFOI Office)
- Develop and circulate draft Terms of Reference for Methods and Guidelines Documentation Advisory Group (prior to late May meeting of AG)
- Develop and circulate draft Terms of Reference for the GFOI Steering Committee (draft and circulate for finalisation in 4th quarter 2012)

C2 GFOI Office Duties

- Establish interfaces and cooperation with other international forest-related initiatives and institutions, in particular to UNFCCC (SBSTA), IPCC, FAO and the World Bank FCPF (2012-2013)
- Negotiate with potential donor organisations to assure adequate funding for R&D and product development activities in the GEO FCT National Demonstrator countries (2012-ongoing)
- Develop criteria and pathway for participation of countries in GFOI for approval by GFOI Lead Team (2012)
- Interface with SDCG to assure ongoing data supply in support of participating country requirements (2012-ongoing)
- Coordinate with FCT Capacity Building programs to assure participating countries' representation as required (2012-ongoing)
- Negotiate with potential donor organisations to facilitate bulk purchases of (non-core mission) satellite data required to complement the SDCG Data Strategy/Work Plan (2012-2013) (see Attachment A)
- Keep stakeholders informed of progress and activities which may impact their interest wrt GFOI implementation (ongoing)

Attachment D. GFOI Budget Details for Table 1. Revised GFOI budget reflecting 2012-2013 Work Plan submissions. Numbers are in thousands of USD (using 1 CHF = 1.1 USD)

Year	Total	WMO 7% indirect costs	Staff	Office Support	Meetings	Staff Travel	National Capacity Building***	Methods and Guidelines *****
2012*	584	39	263	75	35	63	55	55
2013	1,023	73	525	123	35	125	110	33
2014	1,018	67	525	123	35	125	110	33
2015	1,032	68	525	136	35	125	110	33

* covers last six months of 2012

Basis and Assumption by budget category:

Staff annual costs (K)	
GFOI Coordinator (D1)	238
FCE (P5)	198
STC/S**	89
Total	525

** STC/S= short term consultant or secondment at P5 short term rates. Assumes 2 per year for 3 months each.

Office Support annual costs (K)—estimates	
IT support	13 1/20 of GEO's IT specialist
Admin support	55 a third of an admin assistant
WMO Office rental	55 estimate
Total	123
IT/phone purchase	13 2012 and 2015 only

Meetings	
Assuming 4 experts @ 4k/rep; 2 mtgs/year	35

Staff Travel	
Based on current P5's rate of 50K/year	
2.5 FTE @50K/FTE	125

National Capacity Building***	
Assumes lead countries cover their workshop costs so this is travel support for participating countries	
Assumes 2 workshops/year w/10 experts @5K/workshop	110
***many capacity building activities will not require GFOI Program Office support	

Methods and Guidelines Documentation	
10 writers @ 5K/writer	55
3 writers for one month	33
****2012 Includes gathering writing team for final iteration of Methods and Guidelines Documentation. Out years-updating documents. Provides for time of contributors who are not otherwise supported	

E. Current points of contact in the GFOI organisation as at May 2012

Global Forest Observation Initiative Task Force/Steering Committee members

José Achache/Director, GEO Secretariat (to 30 June, 2012); Barbara Ryan (from 1 July, 2012)
Miriam Baltuck/Department of Climate Change-CSIRO, Australia
Stephen Briggs/European Space Agency-CEOS-Lead
Gilberto Camara/National Institute for Space Research (INPE)-Brazil
Simon Eggleston/ Institute for Global Environmental Strategies, Japan-IPCC
Toshihide Fukui/Ministry of Education, Culture, Sports, Science and Technology-Japan
Martin Herold/Wageningen University (Netherlands)-GOFI-GOLD
Len Hirsch/Smithsonian Institution, USA
Eric Kamoga Mugurusi/National Execution Agency-Tanzania
Liangyun Liu/Chinese Academy of Sciences-China
Alex Lotsch/World Bank
Mette Loyche-Wilkie/Food and Agriculture Organization-FAO Lead
Doug Muchoney/United States Geological Survey-USA
Jim Penman/University College, London-Chair Methods and Guidance Documentation
Per Erik Skrivseth/Norwegian Space Centre-Norwegian Lead
Andreas Tveteraas/Ministry of the Environment-Norway
Jenny Wong/United Nations Framework Convention on Climate Change

Global Forest Observation Lead Team Members

Miriam Baltuck/Department of Climate Change-CSIRO
Stephen Briggs/European Space Agency-CEOS
Len Hirsch/Smithsonian Institution, USA
Mette Loyche-Wilkie/Food and Agriculture Organization
Per Erik Skrivseth/Norwegian Space Centre

Satellite Data Coordination Group Co-Chairs

John Faundeen/US Geological Survey
Frank Martin Seifert/European Space Agency
Ake Rosenqvist/soloEO

GEO Secretariat Support

Giovanni Rum/Forest Carbon Tracking Coordination
Georgios Sarantikos/GFOI Support

CEOS Space Data Coordination Group

2012-2013 Management Plan

Revision: 10 May 2012

1.0 Purpose

The purpose of this management plan is to outline the objectives, deliverables, milestones, and tasks and resources for the CEOS Space Data Coordination Group (SDCG). The plan intentionally covers the near term (2012) in more detail, but also includes an outline of plans for 2013.

It is expected that this plan will be updated periodically as the SDCG and its work evolve.

2.0 Objectives

The SDCG has defined the following objectives for 2012-2013.

(a) Successful start-up of the SDCG, including securing resources to advance the group's activities for 2012 and beyond [\[in progress\]](#)

- Confirmation of the SDCG co-chair arrangement [\[completed\]](#)
- Actions to bring in and activate recent new (non-ad hoc group) SDCG members [\[on going\]](#)
- Regular teleconferences at monthly intervals [\[on going\]](#)
- Assignment of a group secretariat [\[completed\]](#)
- Two face-to-face meetings set up (SDCG-1 March 2012 in Montreal, Canada and SDCG-2 September 2012 in Reston, Virginia)

(b) Development of SDCG Terms of Reference [\[in progress\]](#)

- Circulation of the draft ToR amongst SDCG members [\[completed\]](#)
- Endorsement of the ToR [\[completed\]](#)

(c) Development of draft statement of GFOI information requirements [\[in progress\]](#)

- Assessment of anticipated information requirements for national forest monitoring, compliant with IPCC and UNFCCC. Direct contacts with key individuals (e.g. IPCC Inventories Bureau, UNFCCC SEC etc), noting that formal engagement with these groups is coordinated by the GFOI Project Office. [\[in progress\]](#)
- Assessment of recommendations from FCT ND's and product development teams [\[completed\]](#)
- Presentation of GFOI information requirements at SDCG-1/Montreal [\[completed\]](#)
- Translation to technical specs for optimised acquisition planning [\[2012 Q2\]](#)
- As additional information becomes available, refinement of the GFOI information requirements. [\[2013\]](#)

(d) Development of the first revision of the baseline Global Observation Strategy for the Core Data Streams (CEOS Data Strategy - Level 1)

- **Overall objective:** to build a living global archive of spatio-temporally consistent time-series data for each relevant sensor type, responding to GFOI information requirements.
- Development of first TOC for the Level-1 data strategy [\[completed\]](#)
- SDCG member agencies to provide assessment of the capacity and availability of each individual mission (operational, near-future) to contribute to the global acquisition strategy

- Preliminary assessment [\[completed\]](#)
- Full assessment [\[SDCG-2\]](#)
- Co-chairs to work individually with each SDCG member to develop an optimal (sensor modes, timing, etc) and best-effort (system resources) acquisition strategy for each mission [\[2012 Q2-Q4\]](#)
 - Special focus on core missions nearing launch in 2013. Clarify procedures and time lines to provide input to/modify already on going acquisition planning [\[SDCG-1\]](#)
- SDCG-2 meeting to review and agree on acquisition sharing responsibilities, prior to CEOS Plenary [\[13-14 Sept 2012\]](#)
- First version of the Global Observation Strategy [\[SDCG-2\]](#)
- In 2013
 - Continued work by co-chairs and SDCG member to develop optimal and best-effort acquisition strategies for each core mission.
 - Special focus on core missions nearing launch.
 - Revisions to the Global Observation Strategy plan if necessary.

(e) Develop mitigation strategies for anticipated observation gaps

- Agreement on timing for implementation of the global observation strategy (suggestion: gradual implementation starting with LDCM operations in mid 2013) [\[on going\]](#)
- Agree on the feasibility to expand acquisitions beyond the current ND-11 to additional UN-REDD countries with the existing systems [\[SDCG-1\]](#)
- [Discuss additional data requirement initiatives \(e.g. JECAM and GEO-GLAM\) that may impact FCT/GFOI data acquisition plans \[SDCG-1 and SDCG-2\]](#)

(f) Initialising observation strategy planning for national acquisitions (CEOS Data Strategy - Level 2)

- Review of existing national requests, based on the SDS#3 outcomes and the forthcoming GFOI national needs assessment [\[2012 Q3-Q4\]](#)
- Consolidation of refined and additional national requests [\[2013\]](#)

(g) Continue FCT data acquisitions (CEOS Data Strategy - Level 3)

- Review of acquisition sharing responsibilities over the 11 FCT National Demonstrators with the existing operational systems [\[May 2012\]](#)
- Update FCT semi-annual acquisition plan for mid-2012 FCT campaign (possibly consolidated into one plan for whole 2012). To be agreed by the SDCG group for implementation [\[May 2012\]](#)
- Periodic updates of the FCT acquisition plan [\[2013\]](#)

(h) Integration of other mission contributions

- All member agencies to provide assessment of the capacity and availability of their missions to contribute to the Level-1, Level-2 and/or Level-3 acquisition plans (note: data distribution not considered here).
 - Preliminary assessment [\[completed\]](#)
 - Full assessment [\[26th CEOS Plenary Oct 2012\]](#)
- Co-chairs to work individually with each member to develop an optimal (sensor modes, timing, etc) and best-effort (system resources) acquisition strategy for each mission [\[2012 Q2-Q4 - 2013\]](#)

3.0 Deliverables

2012	Follow-up in 2013 (if any)
SDCG-1 March	
SDCG Terms of Reference	
SDCG Management Plan (2012-2013)	SDCG Management Plan Update (2013-2014)
Draft Statement of SDCG Working Requirements for GFOI Information Products	Revised Requirements as necessary
First TOC for the (Level-1) Global Observation Strategy	
Draft plan for the SDCG approach to commercial operators interface (GFOI Project Office to manage interface)	
SDCG-2 September	
Review Draft of the (Level-1) Global Observation Strategy	
... others? ...	
26th CEOS Plenary October	
First Release of the (Level-1) Global Observation Strategy	
... others ...?	

4.0 Milestones

4.1 2012 Milestones

Jan	Feb	Mar	Apr	May	Jun
	SDS-3	SDCG-1 SIT-27 LSI Workshop			
Jul	Aug	Sep	Oct	Nov	Dec
		CEOS SIT WS SDCG-2	26 th CEOS Plenary		

4.2 2013 Milestones

Jan	Feb	Mar	Apr	May	Jun
LDCM launch	SDS-4 (TBC) SDCG-3 (TBC)	CEOS SIT-28 (TBC)		Sentinel-1A launch	
Jul	Aug	Sep	Oct	Nov	Dec
		CEOS SIT WS (TBC) SDCG-4 (TBC)	27 th CEOS Plenary (TBC)	Sentinel-2A launch	

4.3 Key Meetings

SDCG-1: 6th-8th March 2012, CSA Headquarters

CEOS SIT-27/LSI Workshop/Carbon Task Force: 26th-30th March 2012, La Jolla, USA

CEOS SIT Workshop 2012: 11-12 September, USGS HQ, Reston, Virginia

SDCG-2: 13-14 September 2012, at USGS HQ, Reston, Virginia

26th CEOS Plenary: week of 22nd October, Bangalore, India

CEOS SIT-28: TBD H1 2013

SDS-4: TBD

SDCG-3: TBD H1 2013

CEOS SIT Workshop 2013: TBD Q3 2013

SDCG-4: TBD H2 2013

5.0 Tasks and Resources

Co-Chairs: USGS, ESA, and NSC

Secretariat: DCCEE/Australia

Other key contributors: CSA, JAXA, INPE and other SDCG members

Task	Resources	Due
Development of SDCG ToR	Co-Chairs	SDCG-1 [COMPLETE]
Development of SDCG Management Plan	DCC, NSC	SDCG-1 [COMPLETE]
Organisation of SDCG-1	CSA with support from the Co-Chairs	SDCG-1 [COMPLETE]
Development of a draft SDCG working statement of requirements for GFOI Information Products	NSC, DCCEE, INPE	Should be previewed to IPCC/UNFCCC prior to SDCG-1 [COMPLETE]
Informal consultation with individuals in the UNFCCC/IPCC community on draft statement of requirements	NSC with support from DCCEE	SDCG-1 [COMPLETE]
Consultation with SDS-3 community on the draft SDCG working statement of requirements	NSC	SDS-3 [COMPLETE]
Liaison with GFOI Project Office on ND Needs Assessment	NSC	SDS-3
Consultation with GFOI Project Office on draft statement of requirements	TBD	SDCG-2 (TBD)
Finalisation of the draft SDCG working statement of requirements	NSC, DCCEE, INPE	Post SDCG-1 [COMPLETE]
Development of draft ToC for Global Strategy		SDCG-1
Development of draft Global Strategy		Post SDCG-1
Development of review draft of Global Strategy		SDCG-2
Organisation of SDCG-2	USGS with support from the Co-Chairs	SDCG-2
Finalisation of Global Strategy		26 th CEOS Plenary

Appendix B

CAPACITY BUILDING WORKSHOPS 2010-2012

Capacity-building has continued during from 2010 to present largely through six focussed workshops organised and funded by US Silvacarbon and supported by Australia and Norway:

- 1st Technical Americas GEO FCT ND- Regional Forest Monitoring Workshop
Tropical Geo Forest Inventory Methodologies and LANDSAT Land Cover Mapping Methodologies
August 15-19, 2011 – Lima Peru
- 2nd Technical Americas GEO FCT ND- Regional Forest Monitoring Workshop
Topic: Developing Consistent GEO Forest Information Products from Time-series Mid-resolution Optical Data
September 19-22, 2011 – Sioux Falls, USA
- 3rd Technical Americas GEO FCTT ND- Regional Forest Monitoring Workshop
Topic: Integration of In-situ Forest Information, Remote Sensing Data and Carbon Models
October 10-11, 2011 – Toluca, Mexico
- 4th Technical Americas GEO FCTT ND- Regional Forest Monitoring Workshop
Topic: Wide-area, Optical and Multi-Frequency SAR data integration and processing for GEO Forest Products
March 05-09, 2012 - Bogota Colombia
- 5th Technical Americas GEO FCTND- Regional Forest Monitoring Workshop
Topic: Exchange of experiences on mapping methodologies
Models to Estimate Degradation, and different methodologies to map forest degradation,
June 2012, Quito, Ecuador
- 6th Special GEO FCT Global Workshop - Modelling Approaches for National-Scale Land-Surface Carbon Accounting
August, 2012 – San Jose, Costa Rica.
- 7th Technical Americas GEO FCT Workshop – Integration of simplified forest measurements and carbon models
October 2012 – Chiapas, Mexico.

Appendix C

METHODS AND GUIDANCE DOCUMENTATION(AS OF 3 OCTOBER 2012)

MGD Advisory Group

Chairman

Jim Penman/University College, London

Members

Stephen Briggs/ESA

Simon Eggleston/IPCC

John Faundeen/USGS (USA)

Martin Herold /University of Wageningen

SuthyHeth/Mekong River Commission

Alex Lotsch/World Bank

Thelma Krug/INPE (Brazil)

Kenneth MacDicken/FAO

Douglas Muchoney/USGS (USA)

Orbita Roswintiarti/LAPAN (Indonesia)

Rob Waterworth/DCCEE (Australia)

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Simon Eggleston

Giles Foody

Matt Hansen

Martin Herold

Dirk Hoekman

Leif Kastdalen

Josef Kellndorfer

Erik Naeset

Ron McRoberts

Brice Mora

Keryn Paul

Jim Penman

Shaun Quegan

John Raison

Steve Stehman

Rob Waterworth

Mike Wulder

MGD PROVISIONAL TIMELINE-KEY MILESTONES

Completed Steps-2012

- **February**-GFOI country co-leads agree that Australia will lead pursuit of this area;
- **March** -Australia invites Dr. Jim Penman to chair an Advisory Group (AG);
- **April**-invitation to participate in AG issued including invitation to a one day session in **May** to assess current draft documents for end-to-end completeness, identify gaps, redundancies, etc in the context of a single compiled document.;

- **May-** First AG meeting as described above. Authors invited to participate in MGD writing;
- **June 26-28-** the authors and AG met to discuss AG recommendations and develop document outline and content and agree to writing assignments and nominal timeline to completion;
- **Current activity (as of October 2012);**
- **June/July to October-** electronic correspondence during rewrite. Aim for reviewable drafts by end of October. Includes:
 - **-Early Oct--** 1st cut draft by Sept for review by MGD Advisory Group (AG);
 - **-Oct** –review by AG;
 - **-Nov/Dec--**revise in response to AG review.
- **Future Steps-2012 to 2013**
- **October-**invite GEO members and Participating Organizations to nominate reviewers for a technical review to start in November and last about three months. Reviewers to include recipient countries;
- **Nov-**commence GEO and external review of documents; aim for completion by end of calendar year/early.

2013

- **February-** MGD AG and Writing Team meet (nominally in Australia) to revise in response to reviews of documents;
- **March** Appointment of professional technical writing editor;
- **April-**Review by GEO principals;
- **April/May-**Completion of Methods and Guidance Book-beta version;
- **May-August-**“Field test” of Methods and Guidance Book (rigorous review by user *community*) **September--**adjustments as appropriate. (Additional Writing Team meeting may be required);
- **October-**submission to GEO-X Plenary;
- **November-**Final report approved by GEO-X Plenary.