GEO Community of Practice for Forest Observations

User Interface Committee Meeting

1-3 August 2007, Washington

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Forest observations and GEO

- Forests are a key terrestrial ecosystem and habitat
- GEOSS reference plan:
  - *land cover and forests are important for all areas of societal benefit*
  - *terrestrial observation domain least developed*
- Forests and the environmental conventions:
  - *carbon and water cycle*
  - *response to climate change*
  - *continued deforestation and forest degradation*
  - *biodiversity*

Justification

- Combining remote and in situ observations is under utilised
- Lack of co-ordinated long term observation plans
- Earth observation challenges:
  - *varying user requirements*
  - *observation continuity (satellite, in situ)*
  - *move from research to operations*
  - *harmonization of forest information*
  - *data access issues (regional/national data sets, in situ)*
  - *capacity building and outreach*

Objectives

1. Create a community of practice with broad representation of producers and users of forest data and information
2. Advise the User Interface Committee, other CoPs and GEO on matters relating to forest observations and related societal benefits, and on cross-cutting issues of interest
3. Provide GEO with information about organisations and networks that could help carry out forest observation related GEO tasks
4. *Identify, gather, and seek agreement on user community requirements for forest observations, their present status and gaps to be filled*
5. *Support the forest observation community with information about activities and plans in the GEO process*

Forest Observation User Communities

Membership determined by range of uses for forest observations and information

(1) Global Change Science

(2) Timber, Fuel and Fiber

(3) Watershed Protection

(4) Biodiversity and Conservation

(5) FCCC and other Environmental Agreements

(6) Recreation and Tourism

(7) Sustainable Forest Management

(8) Forest Perturbations and Protection (fire, insects, disease)

Work to Date

- Initial focus of FCoP:
  - *integrating in-situ and space based forest observations*
  - *Involvement in planning process for upcoming global forest assessment (FRA 2010)*

Work to Date

Identify direct requirements for forest observations in GEO 2007/09 work plan tasks by eight communities of users:

- *24 tasks identified with need for forest observations*
- *Tasks in all SBAs*
- *Tasks linked to all user communities:*
  - *Global Change Science – 10 tasks*
  - *Timber, Fuel and Fiber – 4 tasks*
  - *Watershed Protection - 2 tasks*
  - *Biodiversity and Conservation - 8 tasks*
  - *FCCC and other Environmental Agreements - 5 tasks*
  - *Recreation and Tourism - 1 task*
  - *Sustainable Forest Management - 3 tasks*
  - *Forest Perturbations and Protection (fire, insects, disease) - 10 tasks*

Direct requirements for forest observations in GEO work plan tasks by 8 communities of users

			Predominant forest observation (R-remotely sensed, I-in situ measurement, M-mixed remote and in situ)							
Area	Task #	Task Short Title	Global Change Science	Timber, Fuel and Fiber	Watershed Protection	Biodiversity and Conservation	FCCC and other Environmental Agreements	Recreation and Tourism	Sustainable Forest Management	Forest Perturbations and Protection (fire, insects, disease)
Agriculture	AG-06-02	Data Utilization in Aquaculture			R					
Agriculture	AG-06-04	Forest Mapping and Change Monitoring	R	M	R	M	R	M	M	M
Agriculture	AG-06-07	Training Modules for Agriculture		M	R				M	R
Agriculture	AG-07-01	Improving Measurements of Biomass		M	R					
Agriculture	AG-07-02	Agricultural Risk Management		M						
Agriculture	AG-07-03	Operational Agricultural Monitoring System		M						M
Biodiversity	BI-06-02	Biodiversity Requirements in Earth Observation				M	M			
Biodiversity	BI-06-03	Capturing Historical Biodiversity Data				M				
Biodiversity	BI-07-01	Biodiversity Observation and Monitoring Network				M				
Biodiversity	BI-07-02	Invasive Species Monitoring System				M			R	M
Climate	CL-06-02	Key Climate Data from Satellite Systems	R				R			M
Climate	CL-06-03	Key Terrestrial Observations for Climate	R				R			
Climate	CL-06-05	GEOSS IPY Contribution	R			M				M
Climate	CL-07-01	Seamless Weather and Climate Prediction System	R							
Data Management	DA-06-04	Data, Metadata and Products Harmonisation	R				R			R
Data Management	DA-07-02	Global Land Cover	M							M
Data Management	DA-07-03	Virtual Constellations	M	R		R	R			R
Disasters	DI-06-03	Integration of InSAR Technology								R
Disasters	DI-07-01	Risk Management for Floods			R					R
Ecosystems	EC-06-01	Integrated Global Carbon Observation (IGCO)	M							
Ecosystems	EC-06-02	Ecosystem Classification				M				
Ecosystems	EC-07-01	Global Ecosystem Observation and Monitoring Network	M			M				
Health	HE-06-03	Forecast Health Hazards		M						M
Water	WA-06-02	Forecast Models for Drought and Water Resource Management	R	R						R

Work to Date

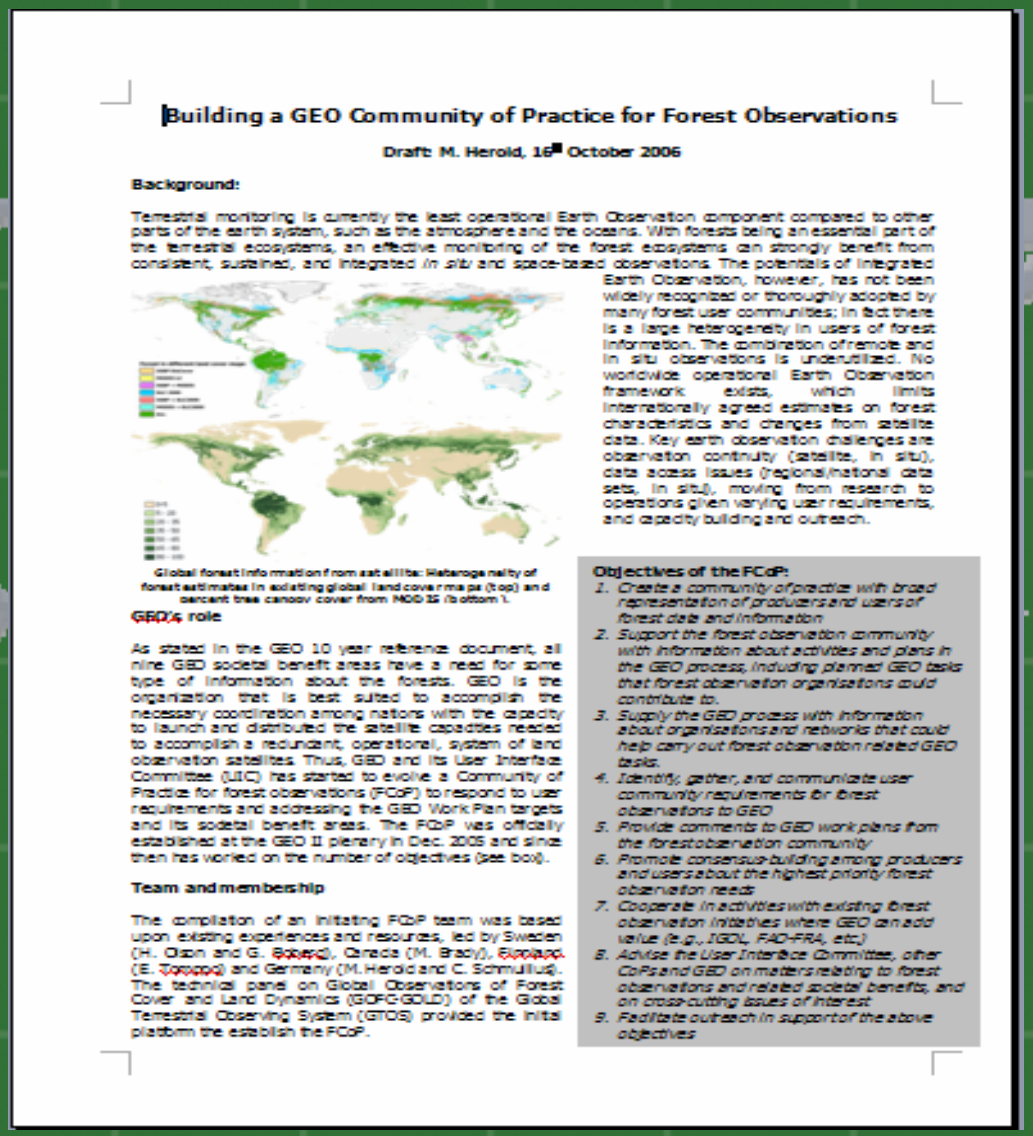
Identify and contact key forest organizations for involvement:

- *UN Org (FAO Forestry Program, Forest Resource Assessment)*
- *National Forest Inventory (ENFIN, NAFC)*
- *Conventions*
- *Regional (EC gmes)*
- *NGOs*

Work to Date

GEO III Plenary:

- *Booth for FCP*
- *Provide information on FCP, poster, handout*
- *Interact with GEO members*



Building a GEO Community of Practice for Forest Observations

Draft: M. Herold, 16 October 2006

Background:

Terrestrial monitoring is currently the least operational Earth Observation component compared to other parts of the earth system, such as the atmosphere and the oceans. With forests being an essential part of the terrestrial ecosystems, an effective monitoring of the forest ecosystems can strongly benefit from consistent, sustained, and integrated *in situ* and space-based observations. The potentials of integrated Earth Observation, however, has not been widely recognized or thoroughly adopted by many forest user communities; in fact there is a large heterogeneity in users of forest information. The combination of remote and in situ observations is underutilized. No worldwide operational Earth Observation framework exists, which limits internationally agreed estimates on forest characteristics and changes from satellite data. Key earth observation challenges are observation continuity (satellite, in situ), data access issues (regional/national data sets, in situ), moving from research to operations given varying user requirements, and capacity building and outreach.

Global forest information from satellites: Heterogeneity of forest estimates in existing global land cover maps (top) and percent tree canopy cover from MODIS (bottom).

GEO's role

As stated in the GEO 10 year reference document, all nine GEO societal benefit areas have a need for some type of information about the forests. GEO is the organization that is best suited to accomplish the necessary coordination among nations with the capacity to launch and distributed the satellite capacities needed to accomplish a redundant, operational, system of land observation satellites. Thus, GEO and its User Interface Committee (UIC) has started to evolve a Community of Practice for forest observations (FCoP) to respond to user requirements and addressing the GEO Work Plan targets and its sodetal benefit areas. The FCoP was officially established at the GEO II plenary in Dec. 2005 and since then has worked on the number of objectives (see box).

Team and membership

The compilation of an initiating FCoP team was based upon existing experiences and resources, led by Sweden (H. Olsson and G. [redacted]), Canada (M. Brady), [redacted] (E. [redacted]) and Germany (M.Herold and C. Schmullius). The technical panel on Global Observations of Forest Cover and Land Dynamics (GOFC-GOLD) of the Global Terrestrial Observing System (GTOS) provided the initial platform the establish the FCoP.

Objectives of the FCoP:

1. *Create a community of practice with broad representation of producers and users of forest data and information*
2. *Support the forest observation community with information about activities and plans in the GEO process, including planned GEO tasks that forest observation organisations could contribute to.*
3. *Supply the GEO process with information about organisations and networks that could help carry out forest observation related GEO tasks.*
4. *Identify, gather, and communicate user community requirements for forest observations to GEO*
5. *Provide comments to GEO work plans from the forest observation community*
6. *Promote consensus-building among producers and users about the highest priority forest observation needs*
7. *Cooperate in activities with existing forest observation initiatives where GEO can add value (e.g., IGOL, FAO-FRA, etc.)*
8. *Advise the User Interface Committee, other CoPs and GEO on matters relating to forest observations and related societal benefits, and on cross-cutting issues of interest*
9. *Facilitate outreach in support of the above objectives*

Work to Date

Ongoing work of Global Observation of Forest and Land Cover Dynamics:

- *GTOS/GOFC-GOLD – strategy reviews*
- *Activities of Regional Networks*
  - *Progress in Africa, Latin America, East Asia*
- *Activities of Implementation Teams:*
  - *GEO land and fire tasks (forest assessment, fire early warning*
  - *IGOL (IGOS-P land theme)*
  - *Conventions (standards, REDD)*

Needs from UIC

- Point of contact among co-chairs
  - *Communications and reporting*
  - *Advice and guidance*
- Status of AG tasks
- GEO UIC protocols
  - *Process to create interface with users*
- Feedback, lessons learned
  - *Other CoPs*

Thank you - Questions?

Point of contact:

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Work to Date

- Following existing community of practice guidance materials and experiences
- Recruit CoP co-leads, establish work routine
- Address forest observations for societal benefits in:
  - *AGRICULTURE:* *forestry and resources*
  - *DISASTERS:* *loss due to forest fires*
  - *CLIMATE:* *deforestation and carbon cycle*
  - *ECOSYSTEMS:* *services and functioning*
  - *BIODIVERISTY:* *conservation of habitats*
  - *CAPACITY BUILDING:* *local - global communities*
  - *… others …*
- Link to GEO 2007/09 work plan targets

Work to Date

- Preliminary identification of user needs:
  - *consistency and continuity of observations*
  - *Accessible and low/no cost*
  - *user involvement: from observations to applications*
  - *Adapting to emerging approaches and technologies*
  - *integrating in-situ and local to global scale information*
- Initial focus of FCoP:
  - *integrating in-situ and space based forest observations*
  - *Involvement in planning process for upcoming global forest assessment (FRA 2010)*