

GEO-FCT update since the CEOS Plenary

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GFOI concept report approved at the GEO plenary 2010

ND Summit-1, SDS-2 and SDC-4 meetings held in Rome and Frascati in February 2011 hosted by FAO and ESA

Structuring of the ND interaction to secure proper governmental involvement in the ND countries



2011 FCT Task meetings (1/2)

- 1st National Demonstrator Summit and 2nd Science & Data Summit (SDS)
- 7-10 Feb, 2011. Hosted by UN-FAO (Rome)
- Large interest. 70+ participants from ND countries, UNFCCC, national organisations, NGO's, research institutions, FCT team members, CEOS agencies and commercial data providers.
- National representatives from 9 out of 10 ND's
- Presentations and meeting minutes on-line at <http://www.fao.org/forestry/fra/68164/en/>



2011 FCT Task meetings (2/2)

- 4th Space Data Coordination meeting
- 11 Feb, 2011. Hosted by ESA/ESRIN
- Held in conjunction with ND Summit and SDS#2
- Representatives from CEOS agencies (ESA, JAXA, CSA, USGS, NSC), GEOSEC, and commercial providers (Astrium EADS [InfoTerra, SpotImage], e-Geos, KSAT and DigitalGlobe)
- Strong interest from commercial data providers to contribute to GEO-FCT
- Meeting minutes available from CEOS PoC (FMS)



Sensor interoperability and complementarity impact on future CEOS acquisitions (1/2)

Conclusions from SDS#2 session on EO Science Questions:

- Utility of time-series of data emphasised for *all sensor types* - the longer the time series, the better the accuracy.
- Specific PD team research task: analysis of simulated "Sentinel/RCM" time series data sets over selected ND Verification Sites (dense time series of ASAR *and* Radarsat-2)
- Sentinel-1 and RCM missions key for FCT/GFOI, but guidance to ESA and CSA will be required to assure useful acquisitions similar to what is done for ALOS and ALOS-2. Action Item: Establishment of C-band SAR Advisory Group



Sensor interoperability and complementarity impact on future CEOS acquisitions (2/2)

SDS#2 recommendations to CEOS:

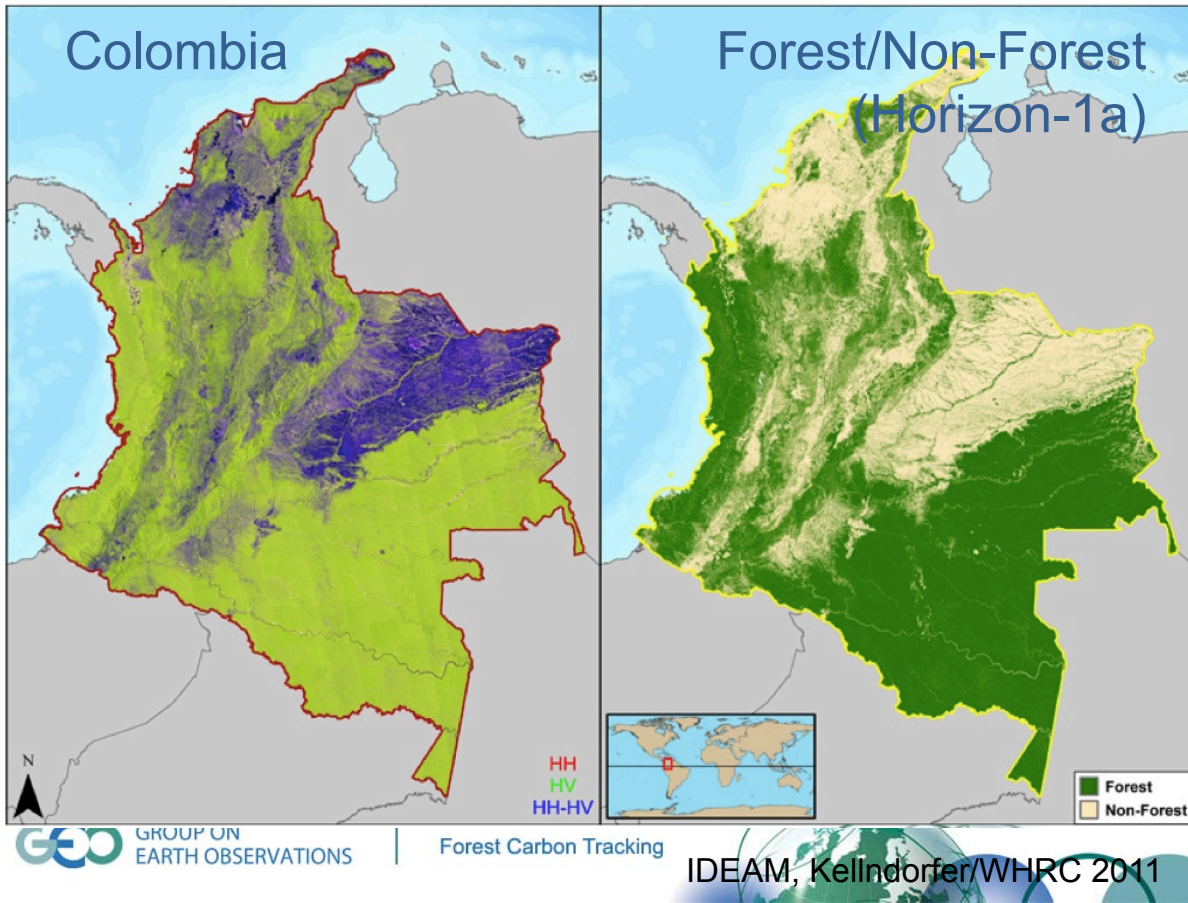
- Continue with annual, dual-season w2w coverage over the NDs with available SAR systems
- Continue with repetitive w2w coverage over the NDs with available optical systems. Aim: one cloud free coverage/year.
- Dense ASAR/RADARSAT-2 time series over certain VS to simulate new-generation C-band satellite datasets
- Progress discussions with commercial providers for VHR data (optical and X-band)



2010 Product Development Update (1/2)

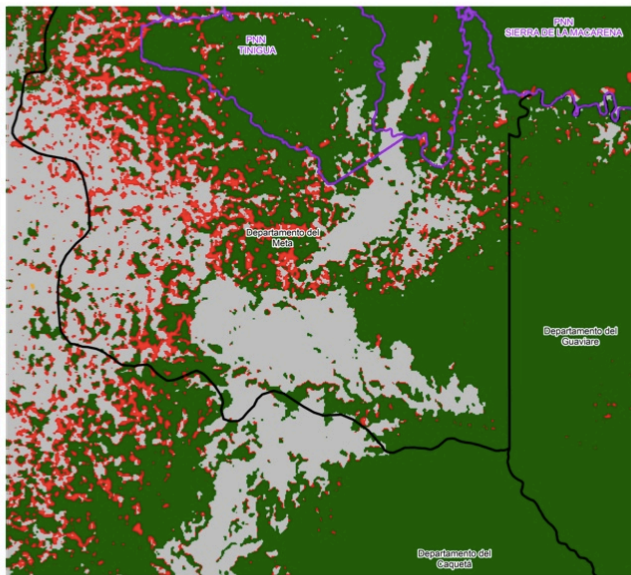
- Notable progress demonstrated at SDS#2 (Feb 2011) compared to at SDS#1 (May 2010).
- Product development now moving towards integration of multi-satellite data sources and national-scale (w2w) applications
- Issue: significant difference in technical levels between PD teams (basic vs advanced). Increased collaboration and knowledge transfer within FCT required.
- Issue: No progress in certain NDs (DRC, PER)
- Product Development Target for GEO-VIII: National-scale (w-2-w) demonstrations of Horizon 1 map products (Forest Cover; Forest Cover Change; Land Cover/Land Use; LCLU Change)





Ministry of Environment,
Housing and Territorial Development
Republic of Colombia

Colombia
(Horizon-1b)



Forest / Non Forest
2000

Forest / Non Forest
2007

Change
Forest / Non Forest
2000-2007

Forest Change
2000-2007

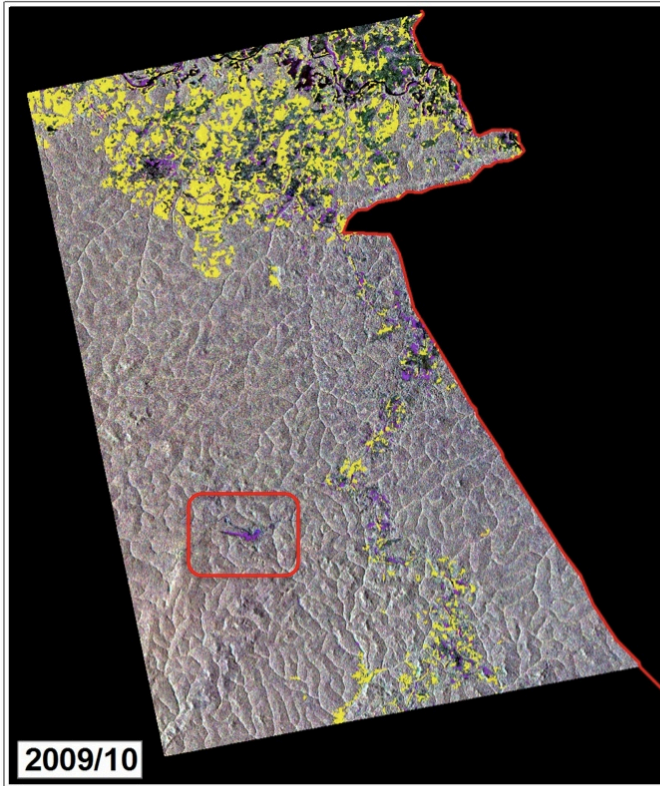


Cameroon

Forest Change (H-1b)

www.geo-fct.org

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Change Map

Testsite CAM-3

Location Diagram



Change 1986-2009

- Non-Forest -> Forest
- Forest -> Non-Forest

Administrative Information

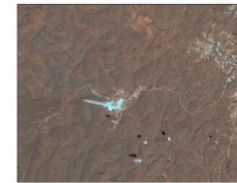
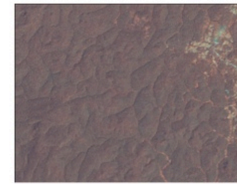
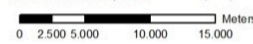
- National Boundary of Cameroon

Description

Classification 1986 derived from Landsat 5 TM; Classification 2009 derived from ALOS Palsar

ALOS Palsar

- Band 1: Jul HV, 2009
- Band 2: Oct HV, 2009
- Band 3: Jan HH, 2010



GAF, 2010

Borneo Island

Land Cover/Land Use

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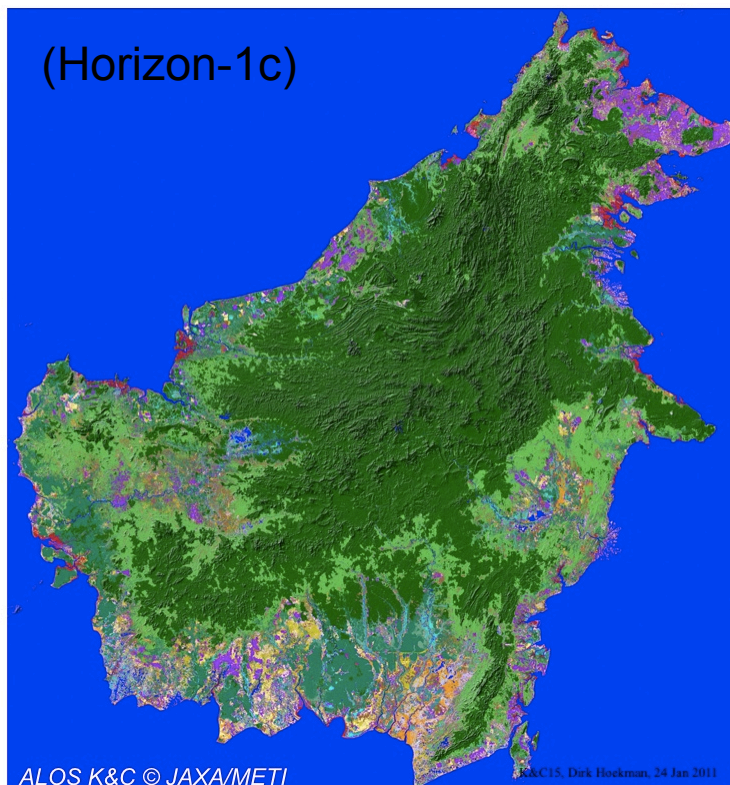
GEO-FCT Horizon 1c

LULC classification Borneo 2007

(shaded relief version)

- Lowland forest
- Riverine forest
- Swamp forest
- Mangrove forest
- *Nipah* mangrove forest
- Peat swamp forest (pole)
- Peat swamp/riverine shrub
- Forest mosaics/degraded
- High shrub
- Medium shrub
- Ferns / grass
- Grassland
- Cropland (upland)
- Cropland (irrigated)
- Plantations (oil palm)
- Tree cover, burnt
- Water bodies
- Layover /Shadow
- No strip coverage
- Mountain forest

(Horizon-1c)



WAGENINGEN UNIVERSITY
ENVIRONMENTAL SCIENCES

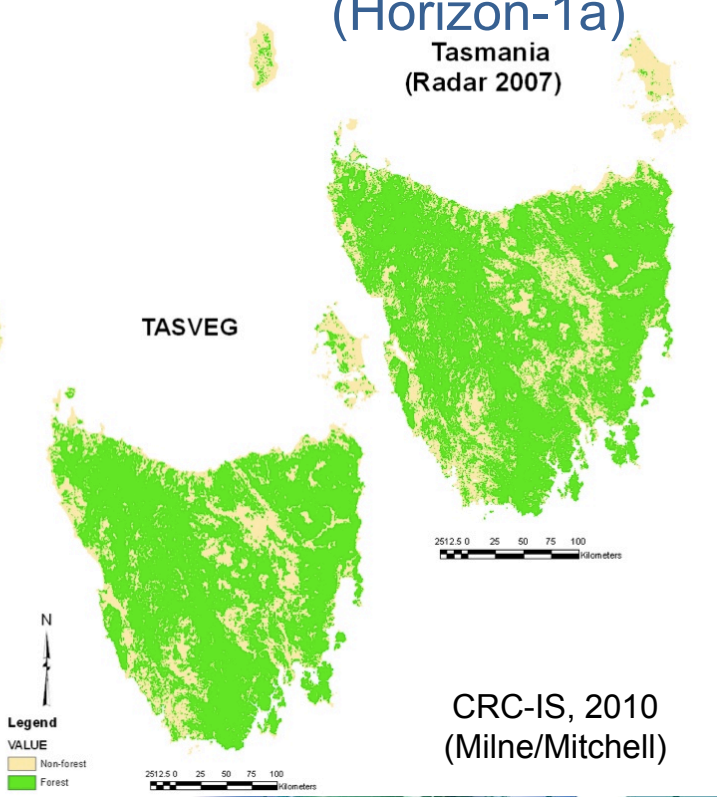
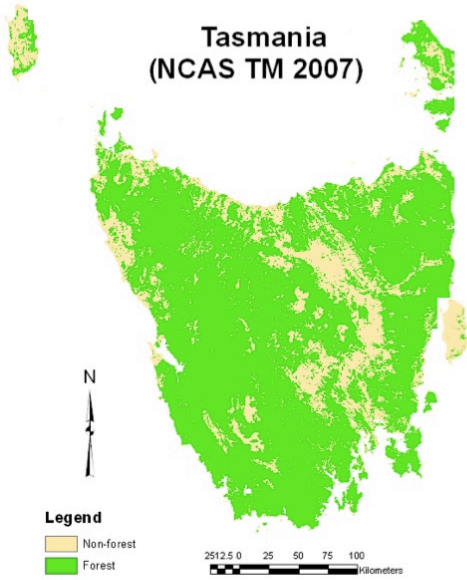
SarVision

ALOS K&C © JAXA/METI

K&C15, Dirk Hoekman, 24 Jan 2011

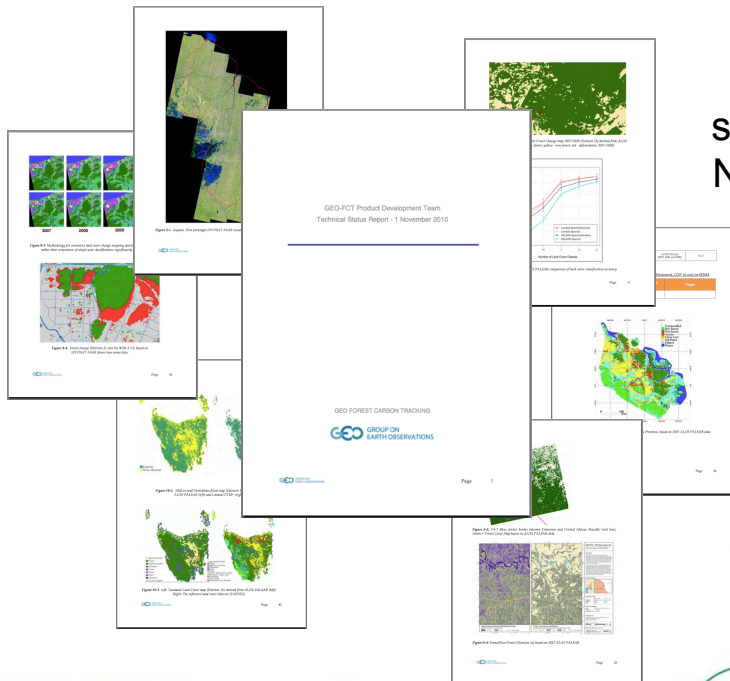
Tasmania

Forest/Non-Forest (Horizon-1a)



www.geo-fct.org

GEO-FCT Product Development Technical Reporting



Technical Progress Report for 2010 with status updates from all National Demonstrator PD teams.

Available for download at the GEO-FCT Portal
<http://www.geo-fct.org/>



2010 Product Development Update (2/2) Commercial data provider inputs from PD teams

- Requests for VHR optical and X-band SAR data have been collected from the PD teams (Validation Site priority lists; preferred acquisition time windows; acquisition modes).
- Responses from MEX, COL, GUY, CAM, TNZ, IND & TAS PD teams.
- Requests passed on to Line Steinbakk/KSAT (FCT contact point to commercial providers)
- Active interest by DigitalGlobe, SpotImage, Infoterra to contribute with data to PD teams.
- Discussions on COSMO-SkyMed data revived - e-Geos new contact
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Upcoming FCT Task meetings (1/2)

- National Demonstrator Summit #2
- Science & Data Summit #3
- Space Data Coordination meeting #5
- Joint organisation of the three meetings probably most efficient (same as previous)
- Tentative timing: January/February 2012 (depending on timing for GFOI summit also planned Q1 2012)
- Venue: Preferably to be hosted by an FCT National Demonstrator country
- SDS#3: Increased focus on broader science issues. Hands-on workshop possible SDS add-on



PD Teams contributing organisations

ND	ND authority	PD team contributing organisations
Brazil	INPE	INPE
Guyana	GFC	WU, CI, NSC
Mexico	SEMARNAT	CONAFOR, CONABIO, INEGI, SAGARPA, CONANP, PMC, WHRC, USGS, CSA, FSU-Jena, DLR-DFD Germany, NRCan
Colombia	Ministerio del Medio Ambiente	IDEAM, WHRC
Peru	Ministerio de Ambiente	SIGMINAM, WHRC
D.R. Congo	Ministry of Environment, Nat. Conserv. and Tourism	TBC
Cameroon	MINEF	ESA, GAF with GSE Forest Monitoring consortium
Tanzania	MNRT	NSC, KSAT
Indonesia	LAPAN	LAPAN, WU, CSIRO, CRC-SI, JAXA/NIES
Tasmania	DCC	CSIRO, CRC-SI



PD Team leaders (technical)

ND	ND Product Development team lead	Organisation
Brazil	Julio Dalge	INPE
Guyana	Dirk Hoekman	Wageningen Univ.
Mexico	Michael Schmidt / Sergio Ojeda / Fernando Paz	CONABIO / INEGI / COLPOS
Colombia	Josef Kelldorfer	WHRC
Peru	Josef Kelldorfer	WHRC
D.R. Congo	TBC	TBC
Cameroon	Thomas Häusler	GAF
Tanzania	Jan Petter Pedersen	KSAT
Indonesia (BOR/SUM)	Dirk Hoekman	Wageningen Univ.
Tasmania	Anthony Milne	UNSW/CRC-SI
Xingu - FCT method site	Josef Kelldorfer	WHRC



GEO FCT and GFOI

- The GEO FCT task focuses on national demonstrators and on developing methods and protocols
- The Global Forest Observation Initiative (GFOI) extends the current GEO Forest Carbon Tracking (FCT) task.
- The operationally-focused GFOI will build on the FCT science and demonstration activities and aims to enable and support the worldwide development of national forest information systems.



Forest Carbon Tracking



- Once completed the Demonstration phase, FCT may become one of the

Schedule considerations

	2011	2012	2013	2014	2015	2016
GEO Initiatives						
FCT						
Demonstration Campaigns	[Orange bar spanning 2011-2014 with a dotted extension to 2015]					
Data processing & Reports	[Orange bar]	[Orange bar]	[Orange bar]	[Orange bar]		
Science Reviews	▼ SDS-2	▼	▼	▼	▼	
GFOI						
Definition Phase	[Orange bar]					
Start-up & initial operations		[Orange bar]				
Operational phase				[Orange bar]		
Methodologies reviews	▼	▼	▼			