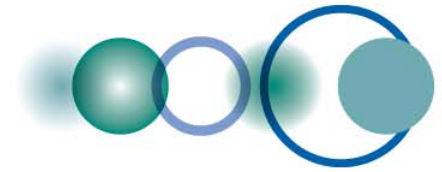


GEO Status Report

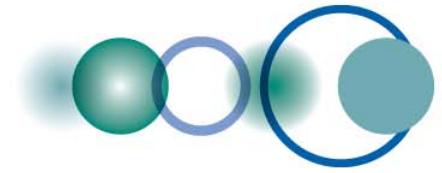
Jose Achache
GEO Secretariat
Geneva, Switzerland





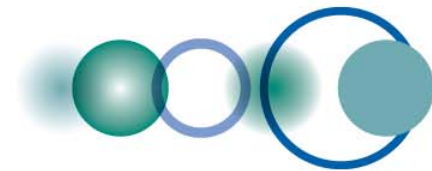
Outline

- **GEOSS Implementation Status**
 - Work Plan Progress
 - Communities Of Practice
 - GEOSS Common Infrastructure
 - Data Sharing
 - Monitoring & Evaluation
- **Latest Activities**
 - Forest Carbon Tracking
 - Supersites
 - 4th Asia Pacific Symposium
- **Upcoming Key Events**
 - Work Plan Symposium
 - Ministerial Summit



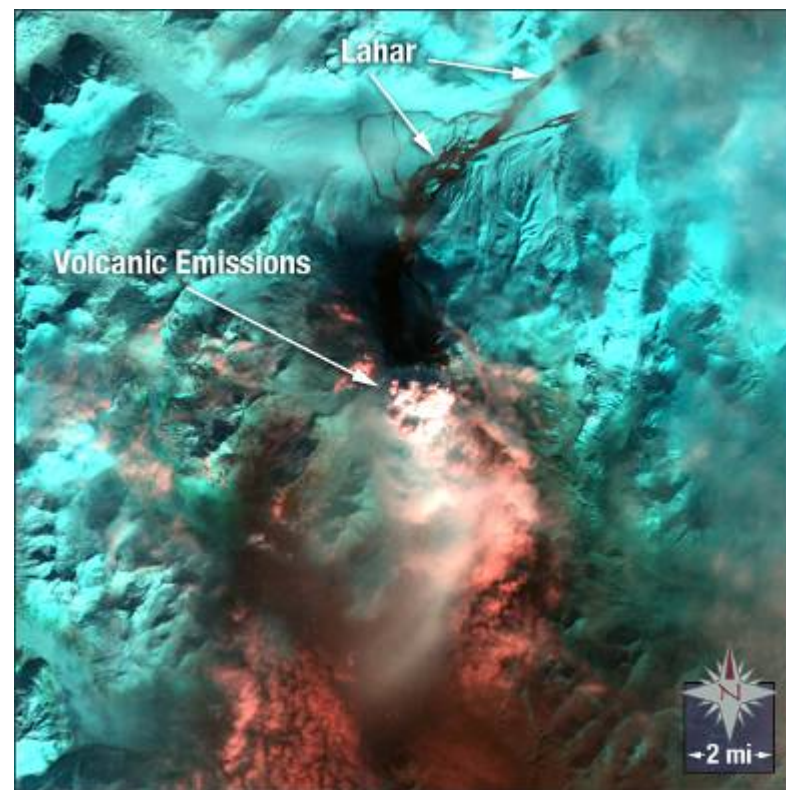
Work Plan Progress Highlights: New Observation Systems, Data and Products, Information Systems & Services



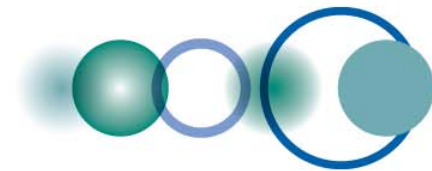


World's Largest Collection of Land Surface Imagery

- **LANDSAT (USA)**
- **CBERS (China, Brazil)**
- **SPOT (France)**
- **ALOS (Japan)**
- **THEOS (Thailand)**
- **EO-1 (USA)**
- **IRS (India)**
- **SAC-C (Argentina)**



Mount Redoubt Eruption
March 22, 2009, the Alaskan stratovolcano Mount Redoubt



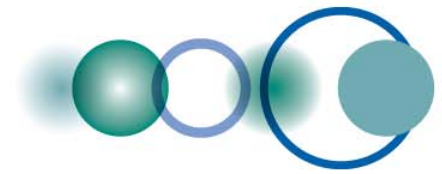
Easy Access via new LSI Portal (CEOS, GOFC-GOLD, USA)

Impact on

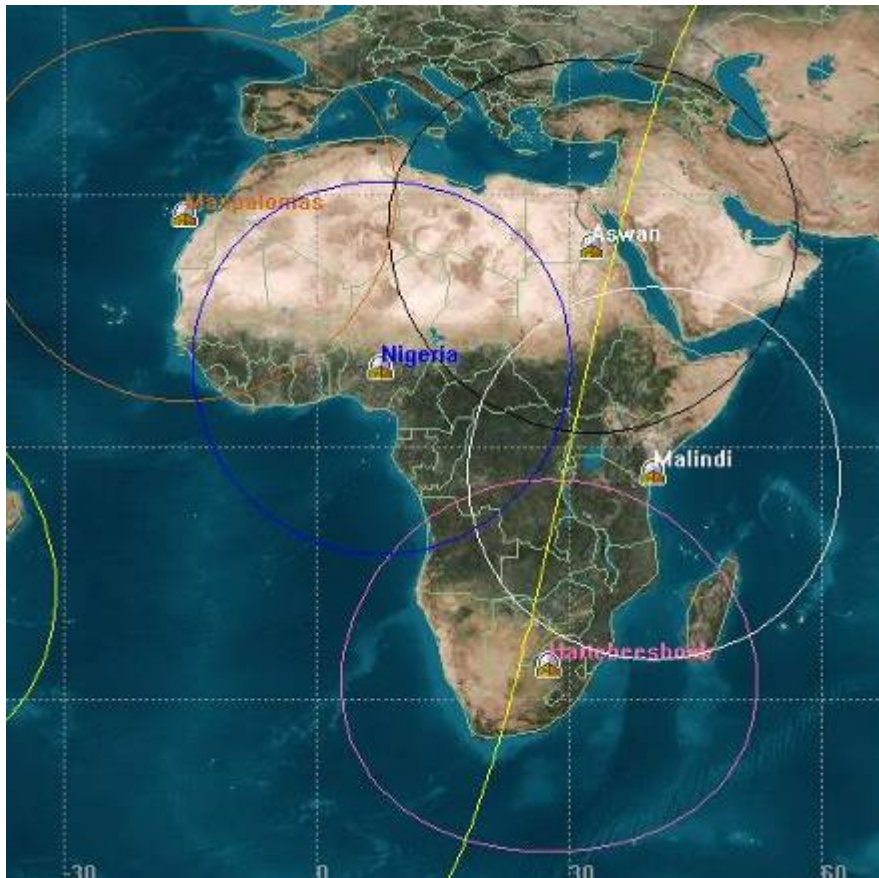
- *Water* management
- *Climate* modeling
- *Disaster* management
- *Crop* forecasting
- *Pollution* monitoring
- *Land surface* change
- *Forests* monitoring



Landsat Urban Mapping for Philadelphia, USA

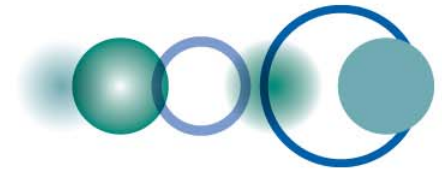


CBERS Receiving Station Operational in South Africa (*Brazil, China, CEOs*)



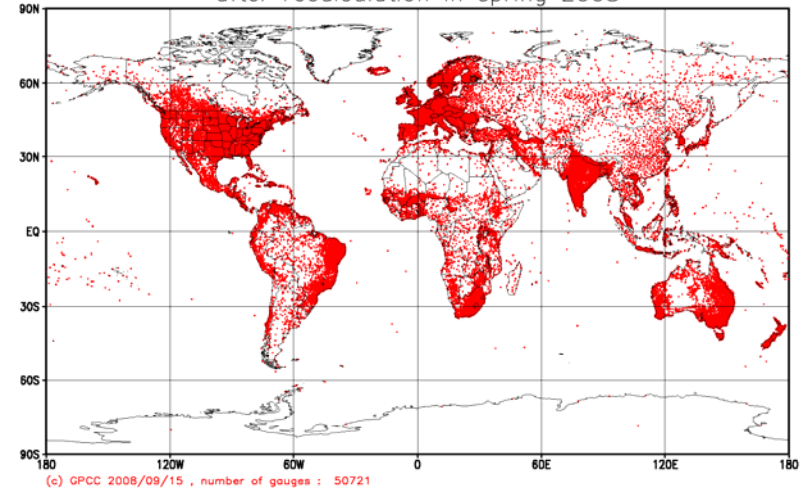
**End-user Training
to Improve
Disasters, Climate
and Health
management**



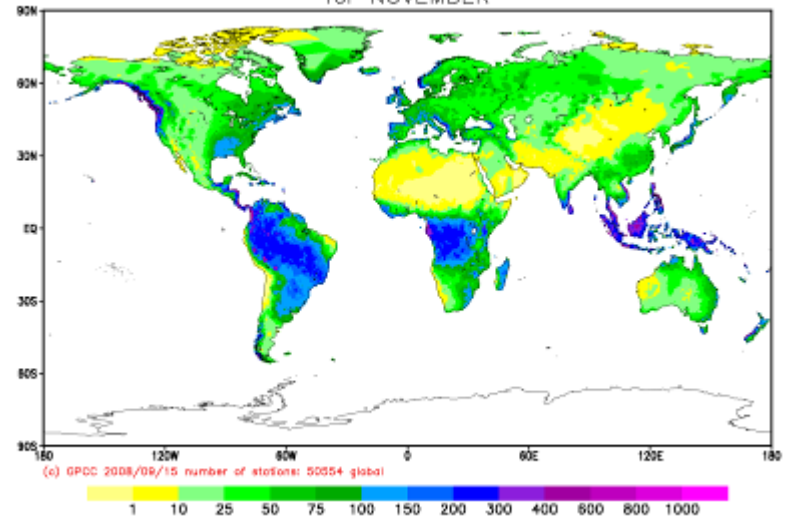


Access to Long-Records of Global Precipitation (Germany, Japan, USA, CGMS, WCRP)

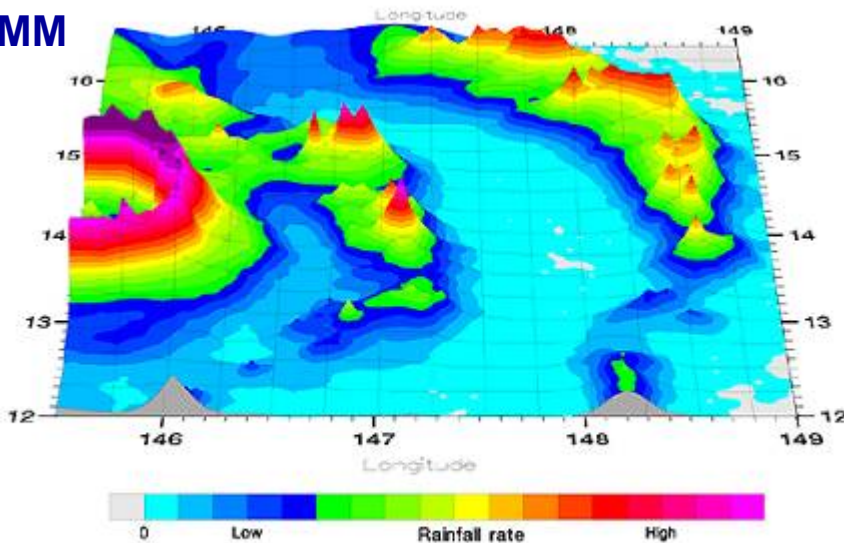
GPCC Precipitation Normals – station distribution – for JUNE after recalculation in spring 2008



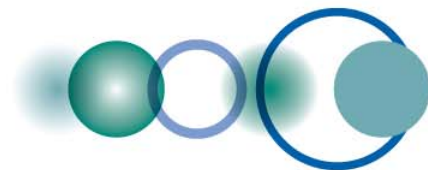
GPCC Precipitation Normals in mm/month per 0.25 degree grid for NOVEMBER



TRMM

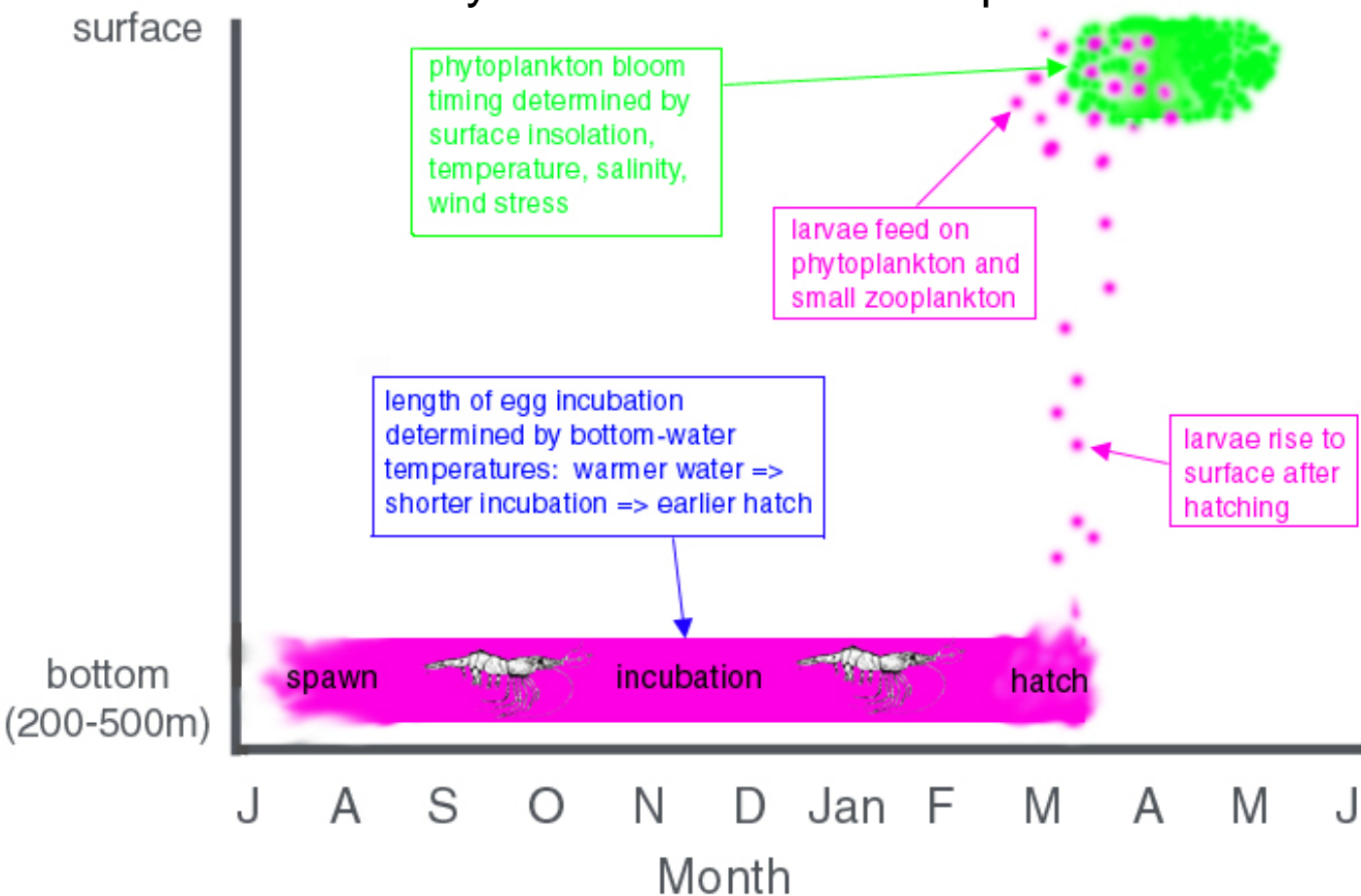


Section Through Typhoon Paka, 0443Z, 16th December 1997



New Fishery and Aquaculture Applications - SAFARI (Canada)

Life Cycle of Northern Shrimp



Landed annual value of fish at scale of North Atlantic Basin: US \$ 0.5 Billion



Global Agricultural Monitoring

(Argentina, Australia, Austria, Belgium, Brazil, China, EC, France, India, Italy, Netherlands, South Africa, USA, ESA, FAO & WMO)

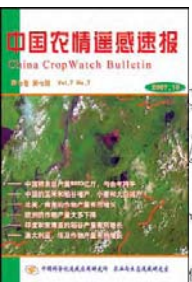
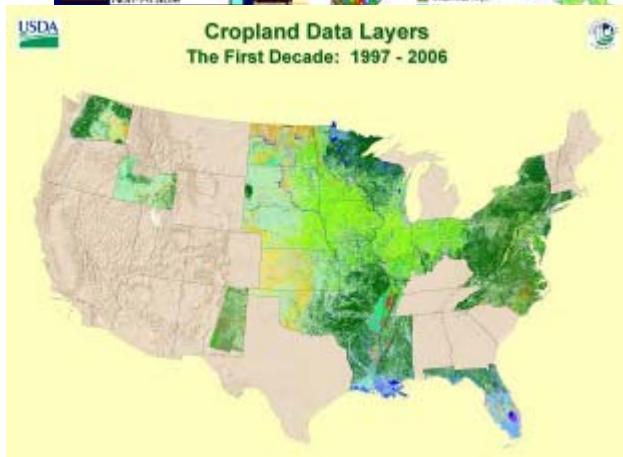
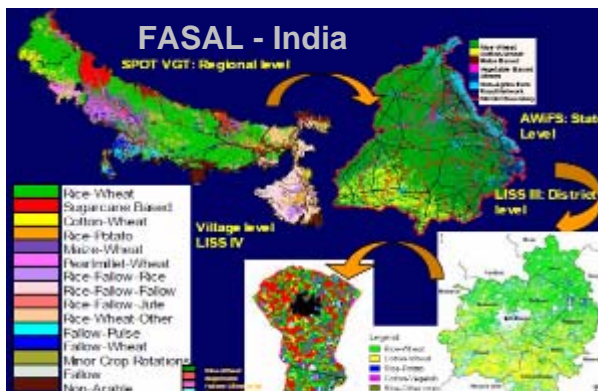
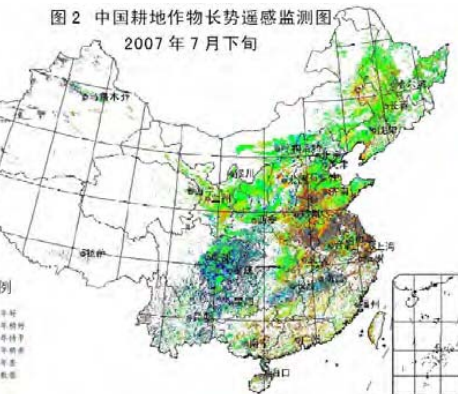


图2 中国耕地作物长势遥感监测图
2007年7月下旬



USAID FEWS NET
ETHIOPIA Food Security Emergency September 20, 2007

Trade restrictions in Somali Region worsen already extreme food insecurity

Continued restrictions on trade and movement in Somali Region are worsening food security among already extremely food insecure pastoral and agro-pastoral populations in Wajir, Korbakaya, parts of Fd, Digabar and Gode zones (Figure 1). These restrictions, which began in mid-June, have prevented livestock trade and impeded the movement of food and other commercial goods to rural areas. In date, food aid deliveries and distributions within the region have not met the needs of affected populations.

Because most people living in the affected areas of Somali Region are pastoralists or agro-pastoralists, they rely heavily on the sale of livestock and livestock products to purchase cereals and other imported food items (Figure 2). But, trade and movement restrictions make it nearly impossible for those populations to access livestock markets to sell their animals. In addition, prices for those cereals and other imported food items that are still available in restricted areas are up to three times their normal levels because of the limited supply and flow of goods. Populations in these areas are reportedly consuming wild foods, and in the worst food insecure households, slaughtering livestock – their main source of income – for consumption. If trade restrictions continue, these negative coping strategies will lead to destruction, increasing and further protracting the already extreme food insecurity of affected populations.

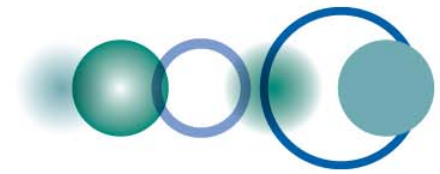
During the second week of August, military convoys began transporting some commercial food to the restricted areas within Somali Region, but the amounts of food dispatched are reported to be insufficient to meet all of the areas' needs. The Border Protection and Prohibitions Agency has also dispatched relief food aid to these areas, though most actual distributions have not yet taken place. While the movement of some commercial and relief supplies into these areas will alleviate food shortages slightly, the amount of food currently being sent through these channels is much lower than the needs in the areas. In addition, even if commercial food was allowed into these areas without restrictions, continued prohibitions on the movement of livestock and livestock products for sale in markets outside restricted areas will not allow affected populations to earn sufficient income to buy cereals and other goods. Distributions themselves need to be intensified. Used with the amount of relief food provided should be increased to cover the needs of pastoral and agro-pastoral populations living in these areas.

Figure 1. Estimated current food security conditions (July to September 2007)

Figure 2. Income and income sources by wealth group in the Wajir pastoral zone

Source: © UK Food Emergency Response Unit

For more information see: www.fews.net/ethiopia



Marine Ecosystem products available in near-real time for Africa, South America, and India (*POGO*)

ChloroGIN Africa - Microsoft Internet Explorer provided by Plymouth Marine Laboratory

http://www.npm.ac.uk/arg/projects/chlorogin/index.php?map=171&map_y=20

File Edit View Favorites Tools Help

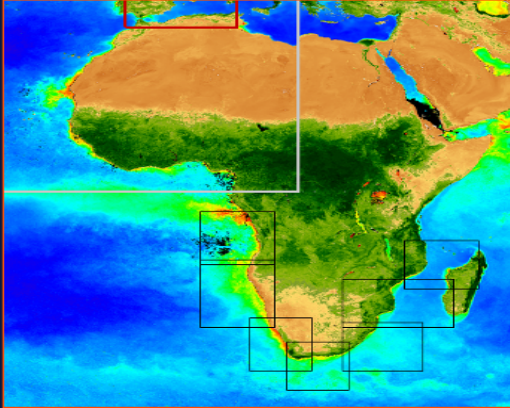
ChloroGIN Africa

ChloroGIN Africa

Home Contact

The Chlorophyll Global Integrated Network (ChloroGIN) project aims to promote in situ measurement of chlorophyll in combination with satellite derived estimates. The project was initiated following recommendations of the "Plymouth Chlorophyll Meeting and Workshops (Extended Antares Network)" sponsored by GOOS, GEO, IOCCG, PML and POGO 18 - 22 Sept 2006.

This portal provides a simple interface to ocean colour and sea-surface temperature satellite data over Africa processed by the [University Of Cape Town, EC Joint Research Centre](#) and Plymouth Marine Laboratory. The portal was inspired by the [Antares network](#) that provides satellite coverage over South America.



Areas selected:
Choose date (YYYY-MM-DD) and press 'Apply':

2007 04 10

[\[Select today\]](#)

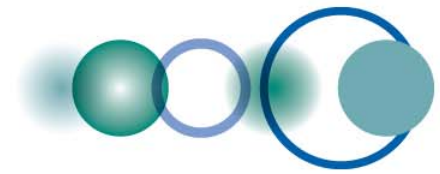
Name:	Provider:	Boundary:	
West Mediterranean	PML	44 9N, -8E, 34N, 10E	<input type="button" value="View"/>
Cape Verde Large 4km	PML	18 9N, -27E, 13N, -21E	<input type="button" value="View"/>
JRC full	JRC	-30W, -50S, 60E, 40N	<input type="button" value="View"/>

[\[Reset selection\]](#)

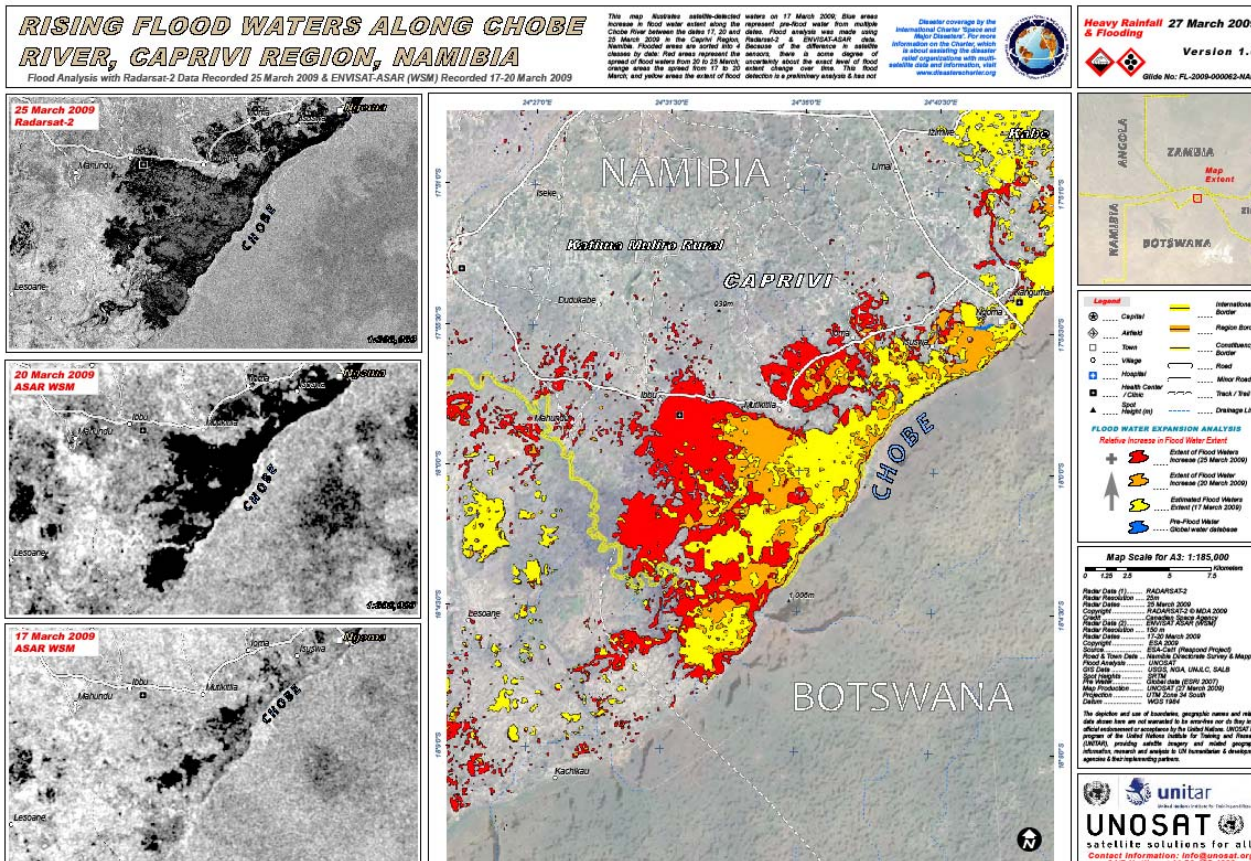
About date selection:
Data availability for preferred date selected is dependant on the individual data provider. Please verify that the data actually viewed is for the preferred date selected.

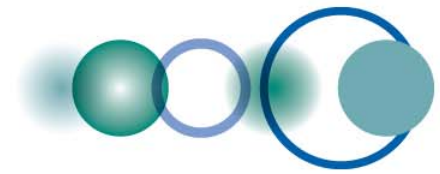
PML PLYMOUTH MARINE LABORATORY UNIVERSITY OF CAPE TOWN EUROPEAN COMMISSION Joint Research Centre

Done Local intranet 100%



Universal Access to “Charter on Space and Disasters” (Algeria, Argentina, Canada, China, France, India, Japan, Nigeria, Turkey, UK, USA, ESA)

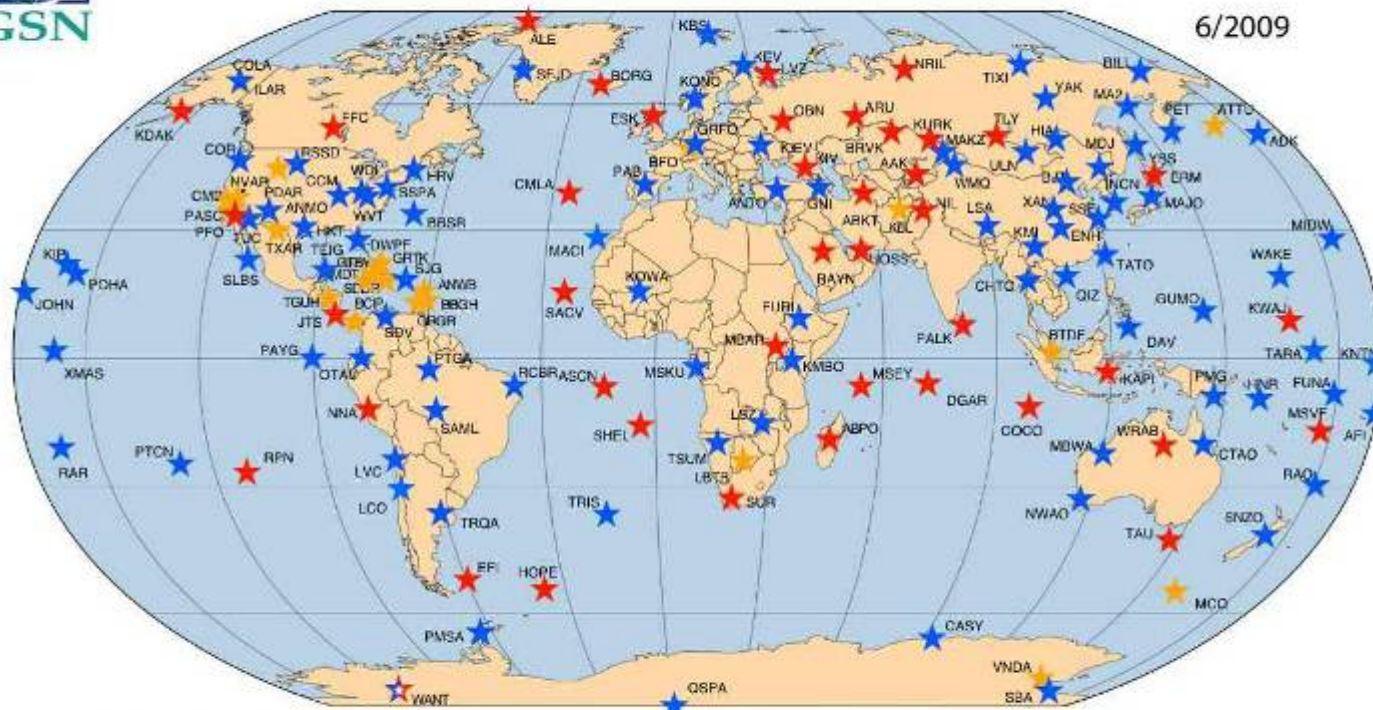




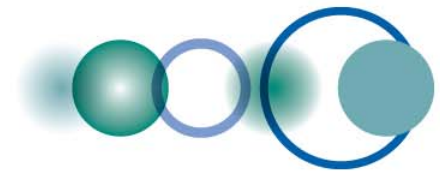
World Seismic Information Freely Available at Minimum Time Delay (EC, USA, FDSN, ISC)



GLOBAL SEISMOGRAPHIC NETWORK

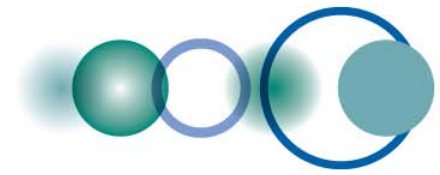


- ★ IRIS / IDA Stations
- ★ IRIS / USGS Stations
- ★ Affiliate Stations
- ★ Planned Stations

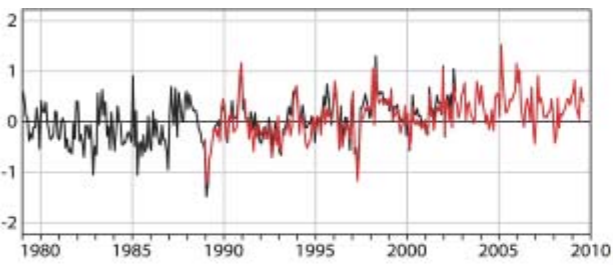


Easy Access to Geological Map Data 175 Datasets from 40 Countries (*EC, UK*)

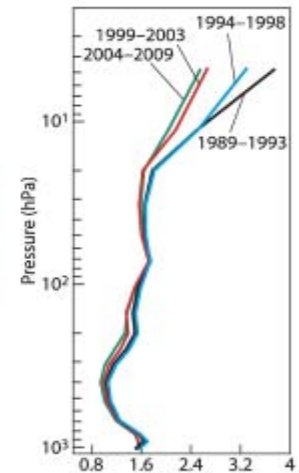
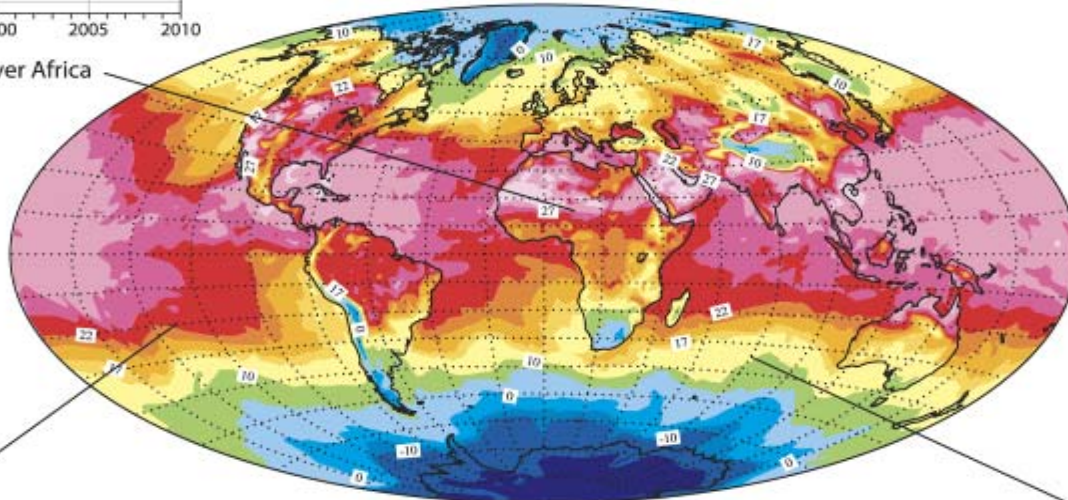
The screenshot displays the OneGeology Portal interface. At the top left is the logo for the Group on Earth Observations (GEO) with the text "GROUP ON EARTH OBSERVATIONS". To the right of the logo is the text "Making Geological Map Data for the Earth Accessible". The main title "OneGeology Portal" is centered at the top. On the right side, there is a "Contact us" link and a "Catalogue of Registered Services" link. Below these links is a language dropdown menu set to "English". The interface includes a search bar and navigation icons (home, search, zoom, pan, etc.). A toolbar contains buttons for "View layers", "Save KML context", "Save WMC context", "Load a WMC context", and "Help". The main map area shows a global geological map with various colored regions representing different geological datasets. An inset map in the top left corner provides a closer view of a specific region. At the bottom, there is a scale bar indicating 4000 km, a scale of 1 : 90 066 421, and coordinates (lon : 48.18, lat : 95.50).



New Reanalysis Data for Climate Change Detection (*Japan, USA, ECMWF, WCRP*)



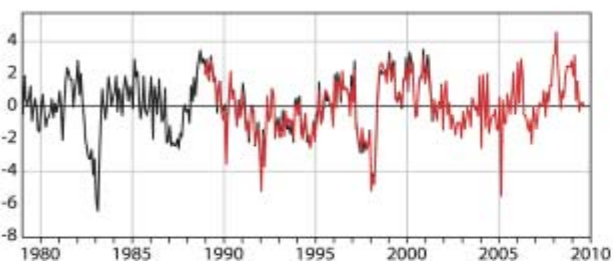
ERA-Interim 2-metre temperature (°C)
15 August 2003 03 UTC



Standard deviation of differences
between ERA-Interim and
radiosondes temperature (°C)
in the southern hemisphere

2-metre temperature anomaly (°C) over Africa

Southern Oscillation Index (hPa)



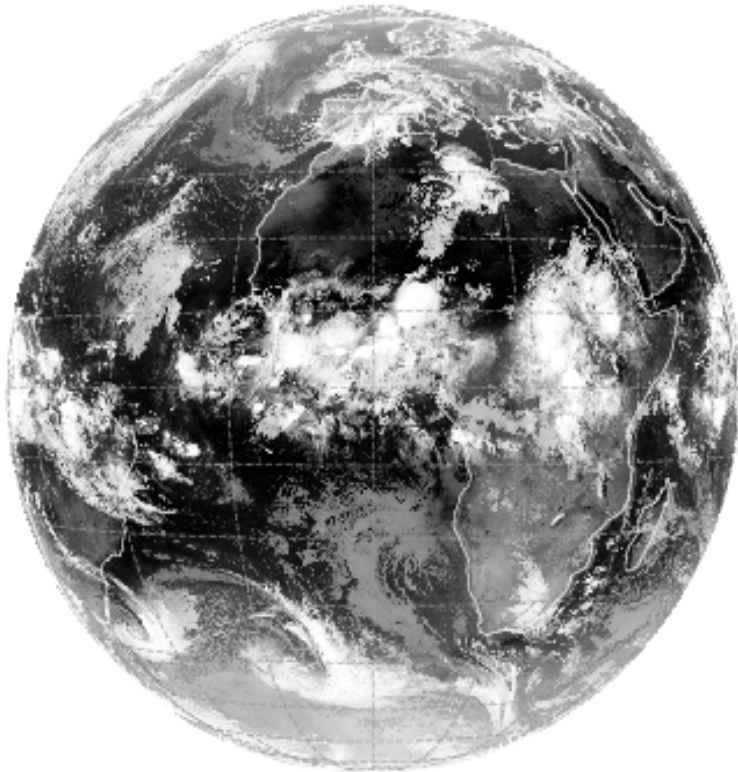
(ECMWF, 2009)

Weather Prediction (T1279, ~15 km) Compared with Satellite Observations

(courtesy of ECMWF)

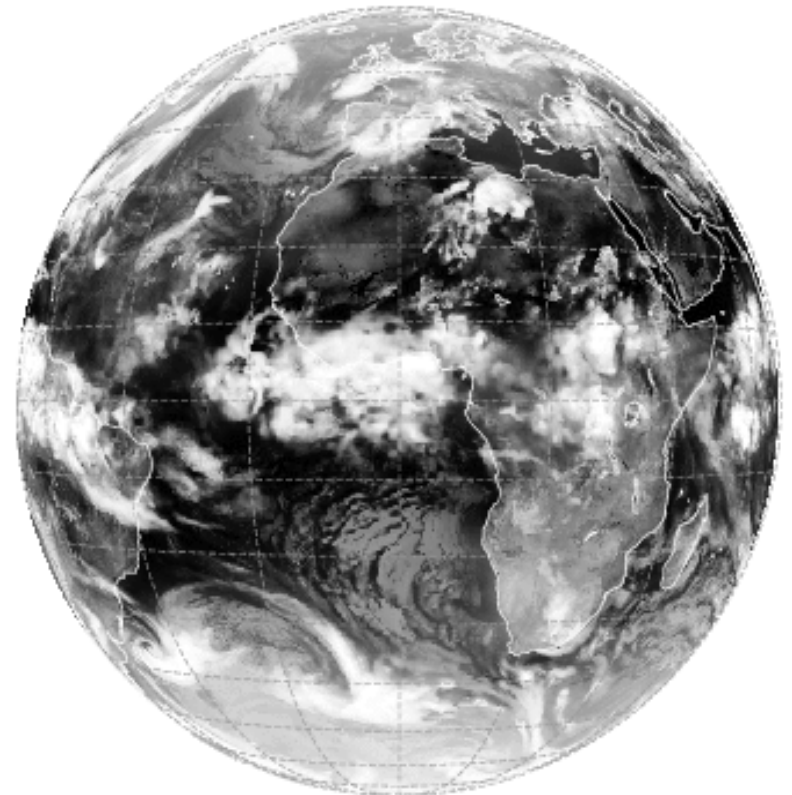
Satellite Observations

Meteosat 9 IR10.8 20080525 0 UTC



Numerical Forecast

ECMWF Fc 20080525 00 UTC+0h:



Medium-Range Ensemble Forecasts

Z500 Spaghetti Diagram (5550m)

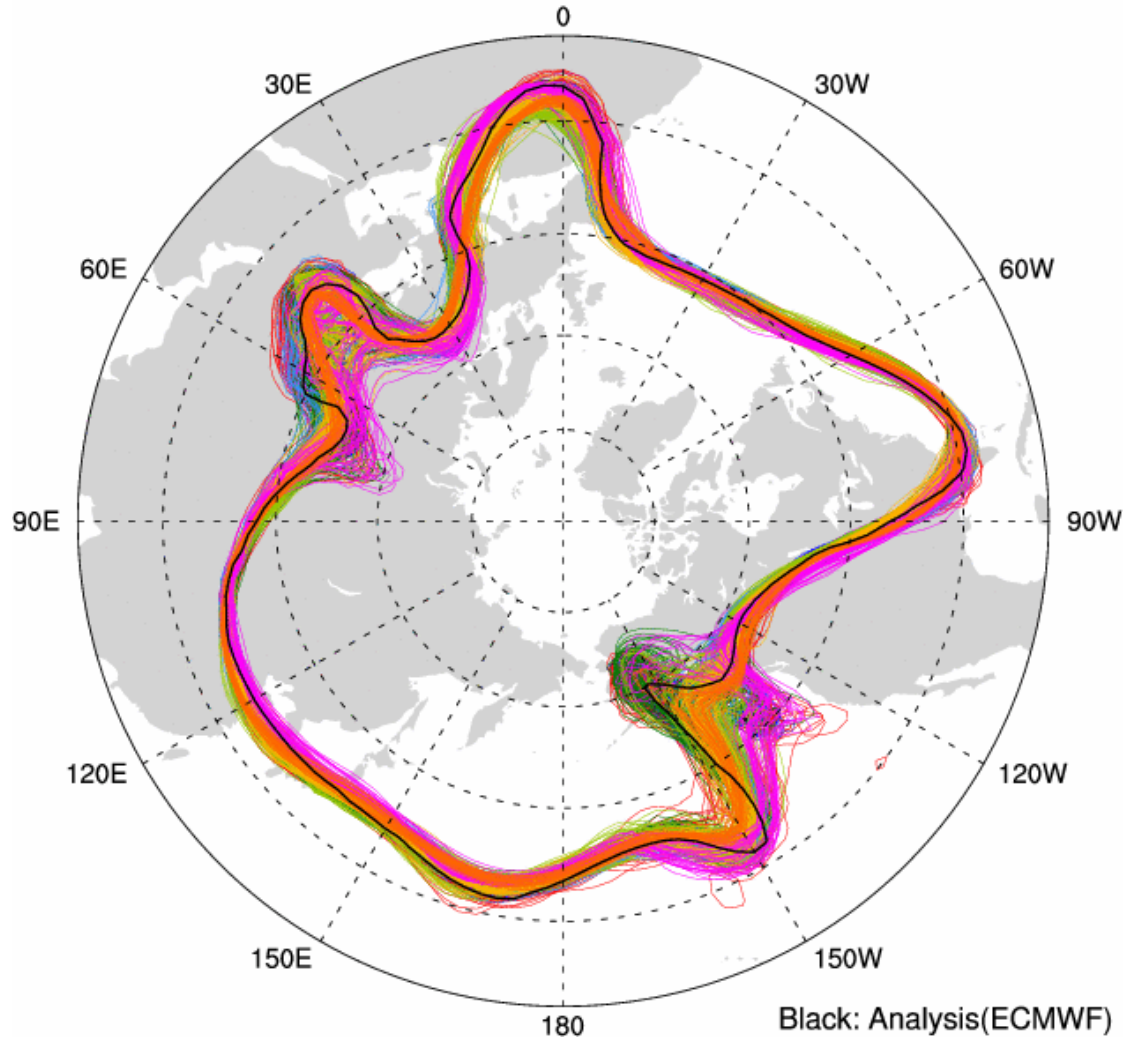
TIGGE

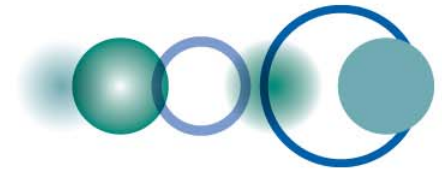
Initial Time: 20090119

Valid Time: 20090121 12UTC

BOM CMA CMC CPTEC ECMWF JMA KMA NCEP UKMO

**Prototype
Multi-Model
Applications
for Extreme
Event
Prediction
(WMO)**

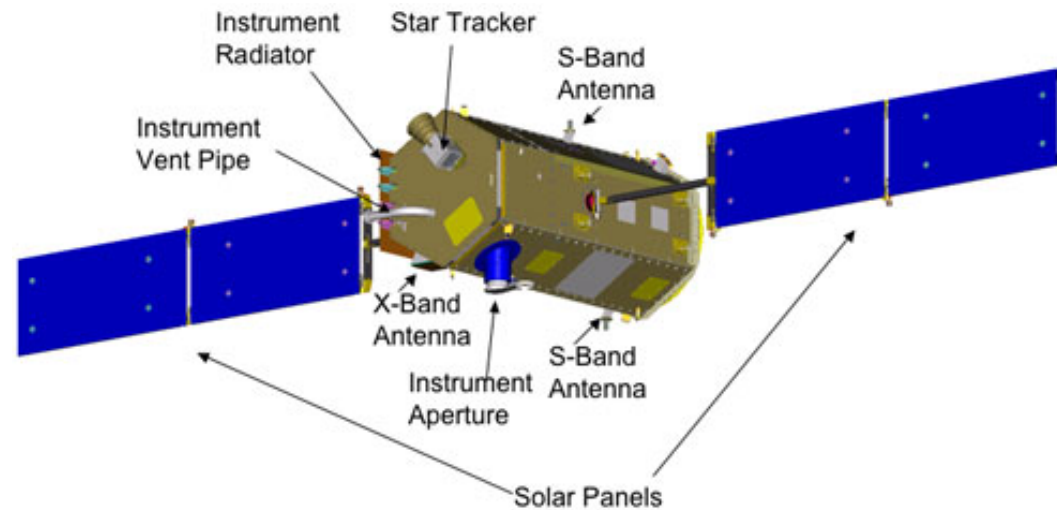




Global Carbon Monitoring

GOSAT (JAXA)
Launched on 23
January

OCO (NASA)
Launch failure



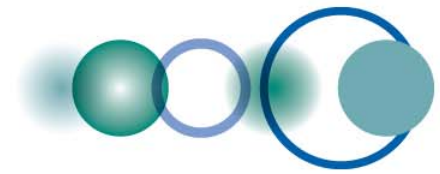
Building Capacity for a Black Sea Catchment Observation and Assessment System supporting Sustainable Development

Dr Anthony Lehmann & enviroGRIDS consortium



SESEC, Lausanne, November 12. 2009





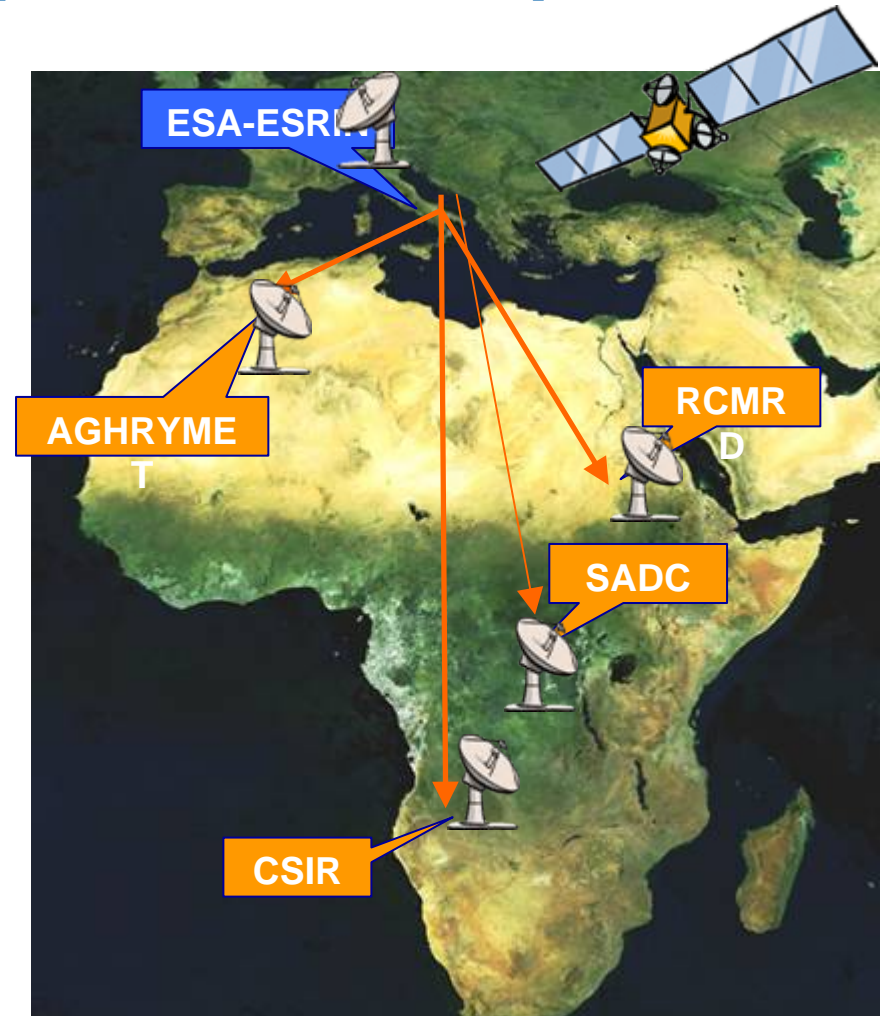
Free & Easy Access to Water Data

TIGER 2nd Phase (CEOS, ESA)

Available Data: ESA (more than 2000 scenes); Radarsat (CSA); ESA 3rd party missions (SPOT 1-4, ALOS)

More Dedicated Datasets for Africa: MERIS Mosaic; Vegetation data; Radarsat Mosaic

Capacity Building: 200 African experts, universities, technical centers, water authorities

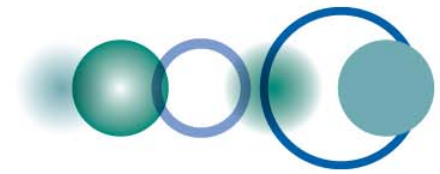




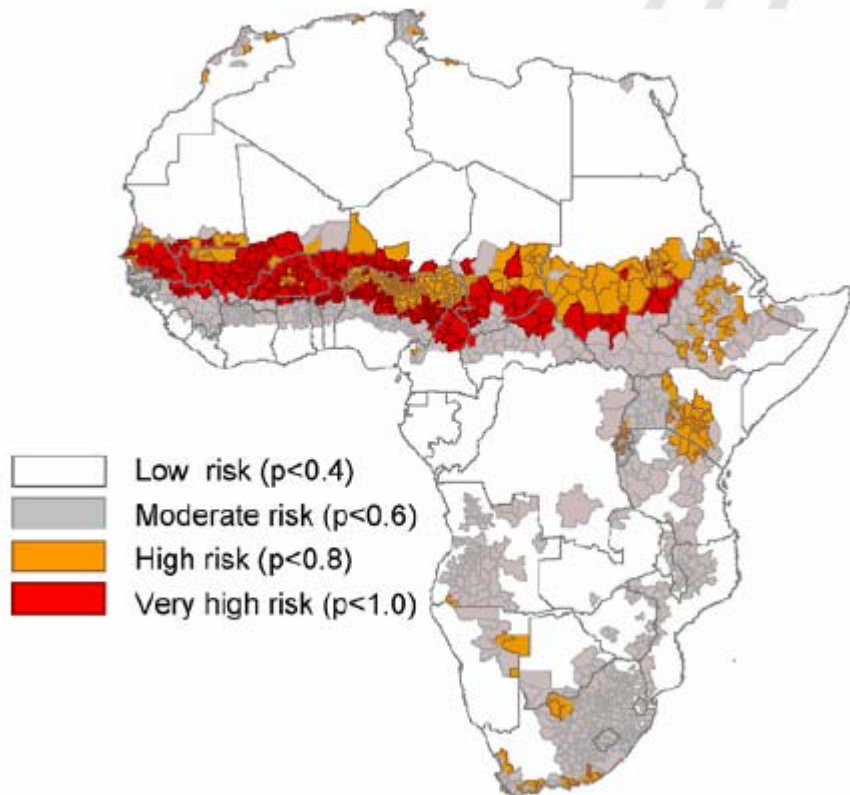
One-Stop Shop for Disaster Management From Central America to Africa (USA)

The screenshot shows the SERVIR website interface. At the top, there is a navigation menu with links for HOME, DATA & SERVICES, TOOLS & MODELS, LIBRARY, COMMUNITY, and ABOUT US. A search bar is located on the right. The main content area features a message: "The SERVIR-Africa website is under development. Over the next few weeks, we will continue to add new content and functionality. Please check back soon, or [subscribe](#) to receive notification of changes." Below this, there is a section for "Coming Soon - Online Map Tools" with buttons for "Featured Map", "Viewer 2D", and "Viewer 3D". The "Featured Map" section displays "SERVIR-Viz Climate Mapper" with a "More Info..." link. A globe image shows a climate map of Africa. Below the globe, there is a line graph titled "Average change in precipitation for 2011-2040 by month" with a legend for "SLR Scenario (A1B) and GCM Model(s)". The graph shows monthly precipitation changes from January to December. On the right side of the website, there are sections for "SLR-VIR Mission" (Enabling the use of Earth observations and predictive models for timely decision making to benefit society), "Latest Community News" (listing various international organizations like FAO, UNEP, and WFP), and "Latest SERVIR News" (listing recent news items).

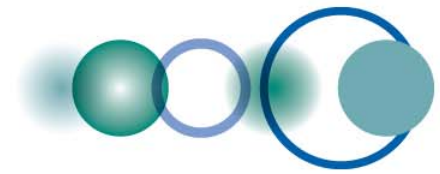




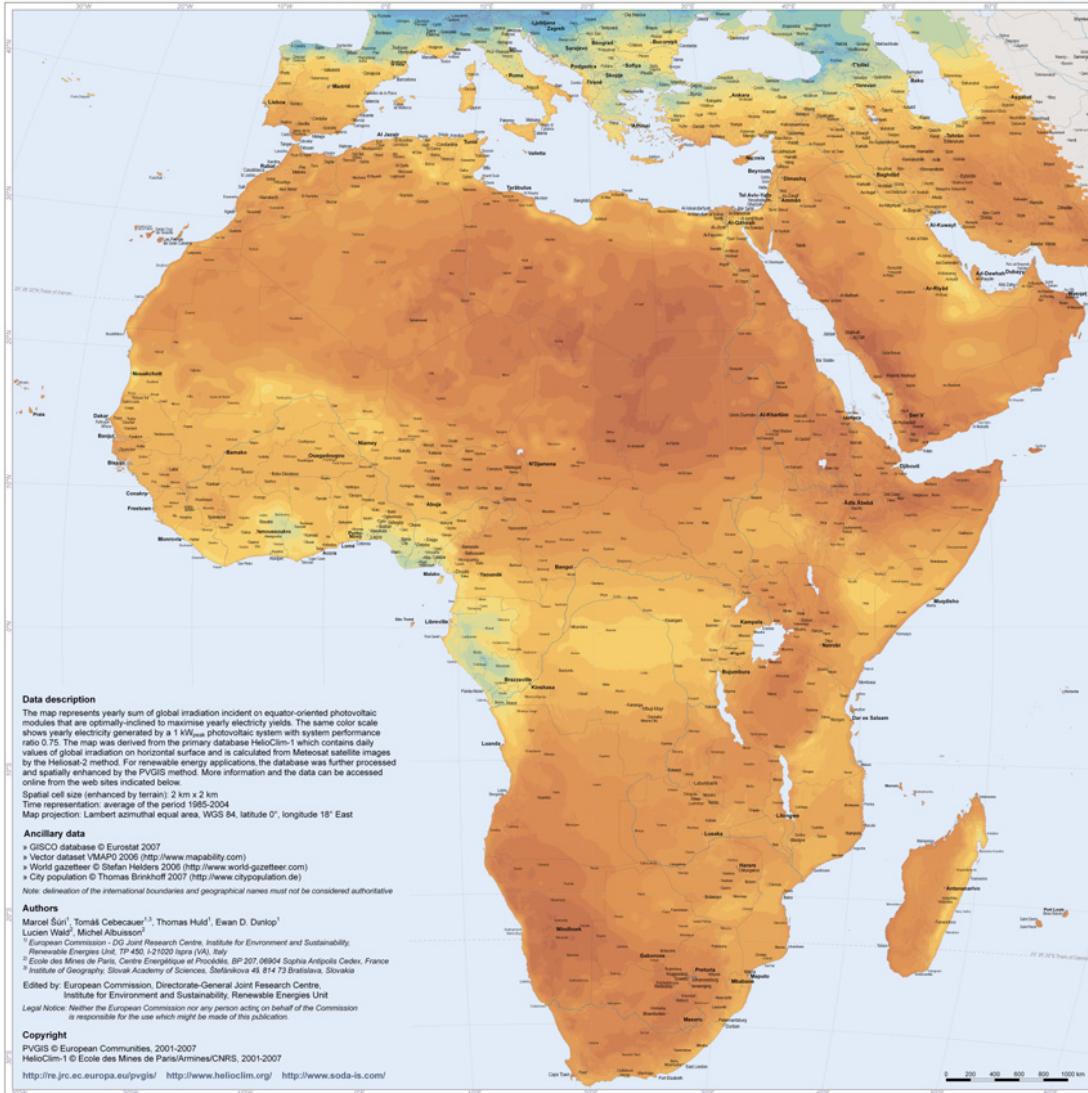
New Health Decision-support Tools to Mitigate Meningitis Outbreaks in Niger & Ethiopia (*USA, France, WMO, WHO*)



- Meningitis Environmental Risk Information Technologies (MERIT) project ~30 organizations
- Forecasts of Dust and Rainfall used to Plan Vaccination Campaigns
- Decision-support Tools currently tested. Modeling framework under dvpt



Photovoltaic Solar Electricity Potential in the Mediterranean Basin, Africa, and Southwest Asia



Data description
The map represents yearly sum of global irradiation incident on equator-oriented photovoltaic modules that are optimally inclined to maximise yearly electricity yields. The same color scale shows yearly electricity generated by a 1 kW_{max} photovoltaic system with system performance ratio 0.75. The map was derived from the primary database HelioClim-1 which contains daily values of global irradiation on horizontal surface and is calculated from Meteosat satellite images by the Heliosat-2 method. For renewable energy applications, the database was further processed and spatially enhanced by the PVGIS method. More information and the data can be accessed online from the web sites indicated below.
Spatial cell size (enhanced by terrain): 2 km x 2 km
Time representation: average of the period 1965-2004
Map projection: Lambert azimuthal equal area, WGS 84, latitude 0°, longitude 18° East

Auxiliary data

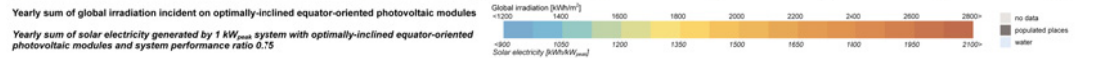
- GISCO database © Eurostat 2007
- Vector dataset VMAPD 2006 (<http://www.mapability.com>)
- World gazetteer © Stefan Helders 2006 (<http://www.world-gazetteer.com>)
- City population © Thomas Brinkhoff 2007 (<http://www.citypopulation.de>)

 Note: delineation of the international boundaries and geographical names must not be considered authoritative

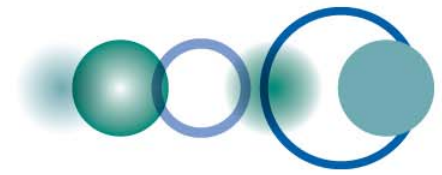
Authors
 Marcel Suñi¹, Tomáš Čebecauer^{1,3}, Thomas Huld¹, Ewan D. Denlip¹, Lucien Wald², Michel Abusson³
¹ European Commission - DG Joint Research Centre, Institute for Environment and Sustainability, Renewable Energies Unit, TP 450, I-21020 Ispra (VA), Italy
² Ecole des Mines de Paris, Centre Energétique et Procédés, BP 207, 06904 Sophia Antipolis Cedex, France
³ Institute of Geography, Slovak Academy of Sciences, Štefánikova 48, 814 73 Bratislava, Slovakia

Edited by: European Commission, Directorate-General Joint Research Centre, Institute for Environment and Sustainability, Renewable Energies Unit
 Legal Notice: Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

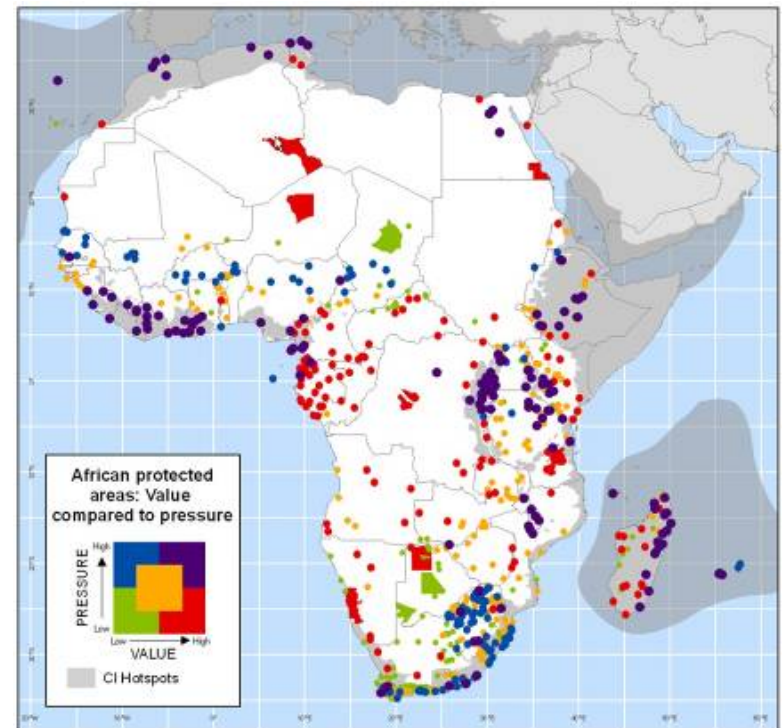
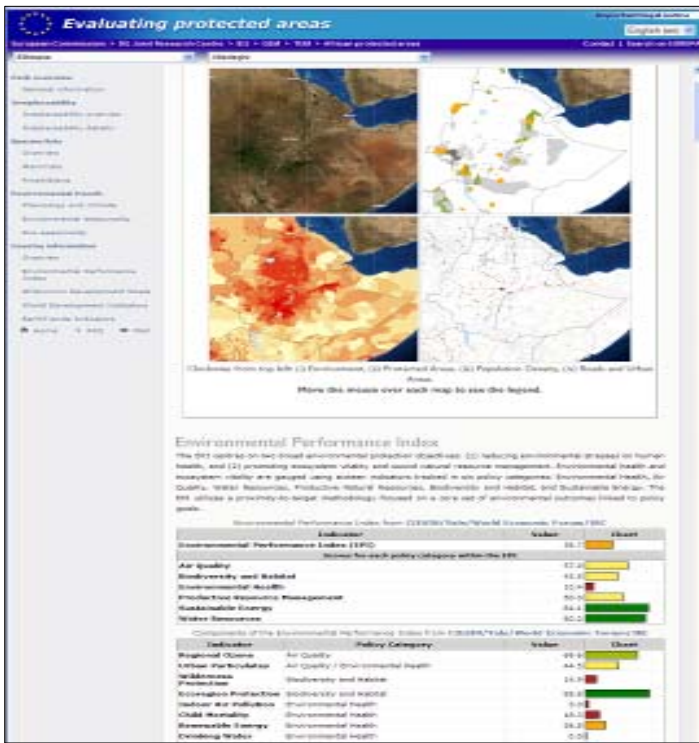
Copyright
 PVGIS © European Communities, 2001-2007
 HelioClim-1 © Ecole des Mines de Paris/Armines/CRIS, 2001-2007
<http://re.jrc.ec.europa.eu/pvgis/> <http://www.helioclim.org/> <http://www.soda-is.com/>

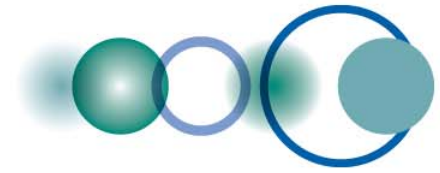


New Energy Service for Siting Solar Plants (France, Germany, EC)



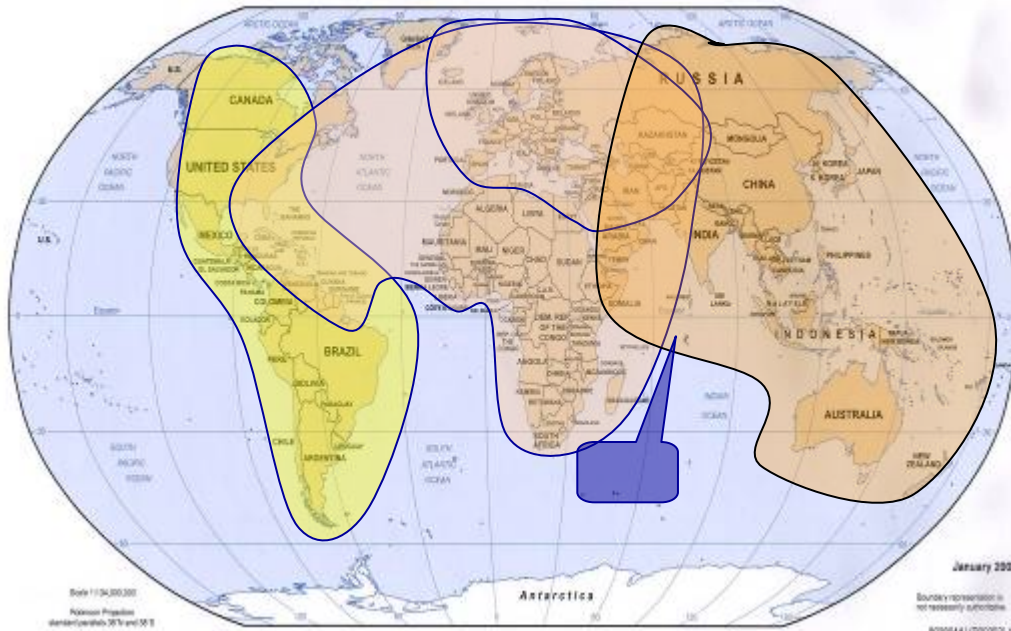
First GEO BON Product Identifies Threats to Biodiversity in Africa from 740 Protected Areas (*Diversitas, EC, Switzerland, USA, GBIF, UNEP*)





GEONETCast Now Fully Operational

New Product Navigator and Training & Alert Channels



**Global Broadcast of
Environmental Information**

Contributors



EUMETSAT



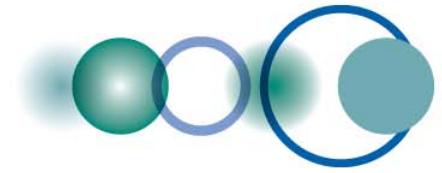
CMA

中国气象局
www.cma.gov.cn



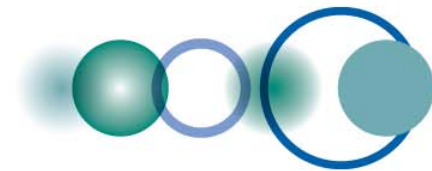
NOAA

ROSHYDROMET



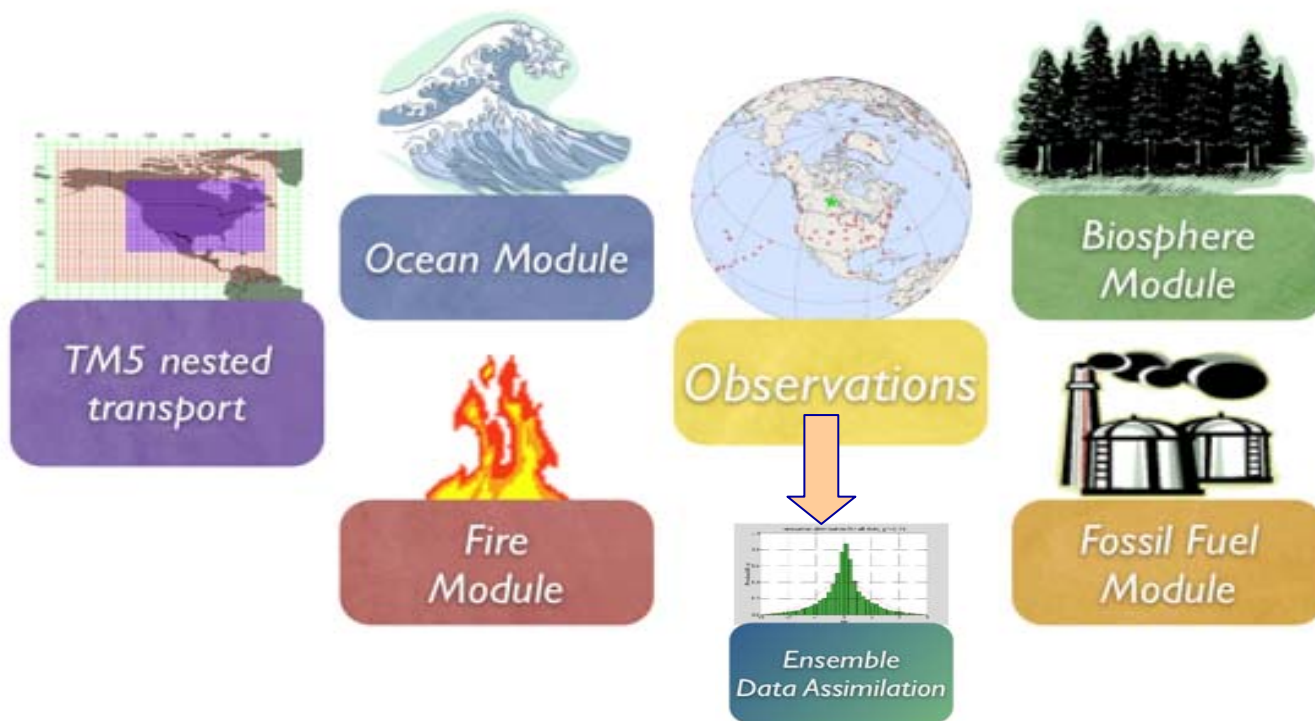
User Engagement: New Communities of Practice (CoP)

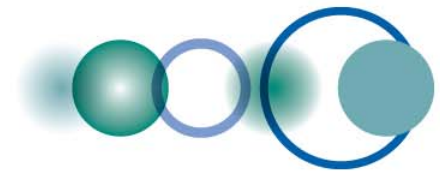




Carbon CoP

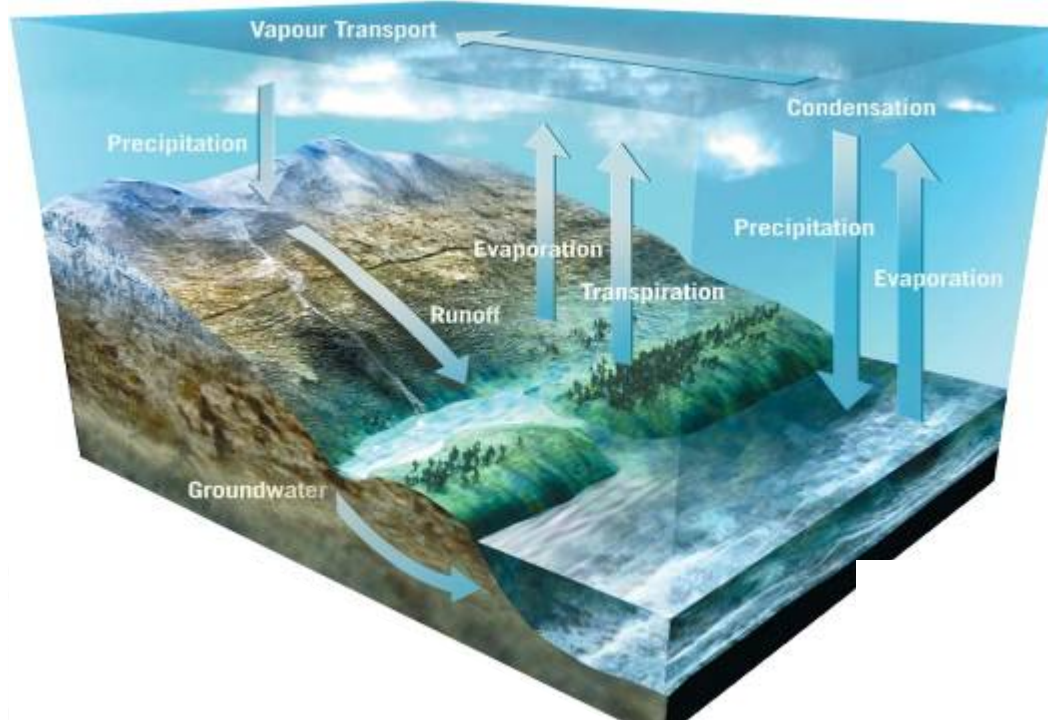
*Australia, Canada, France, Germany, Japan,
Netherlands, Norway, South Africa, UK, USA, CEOS,
ESA, GCOS, WCRP & WMO*

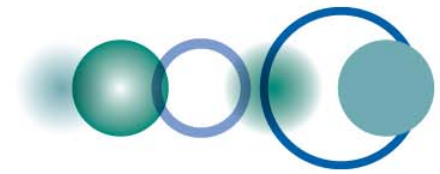




Integrated Global Water Cycle CoP

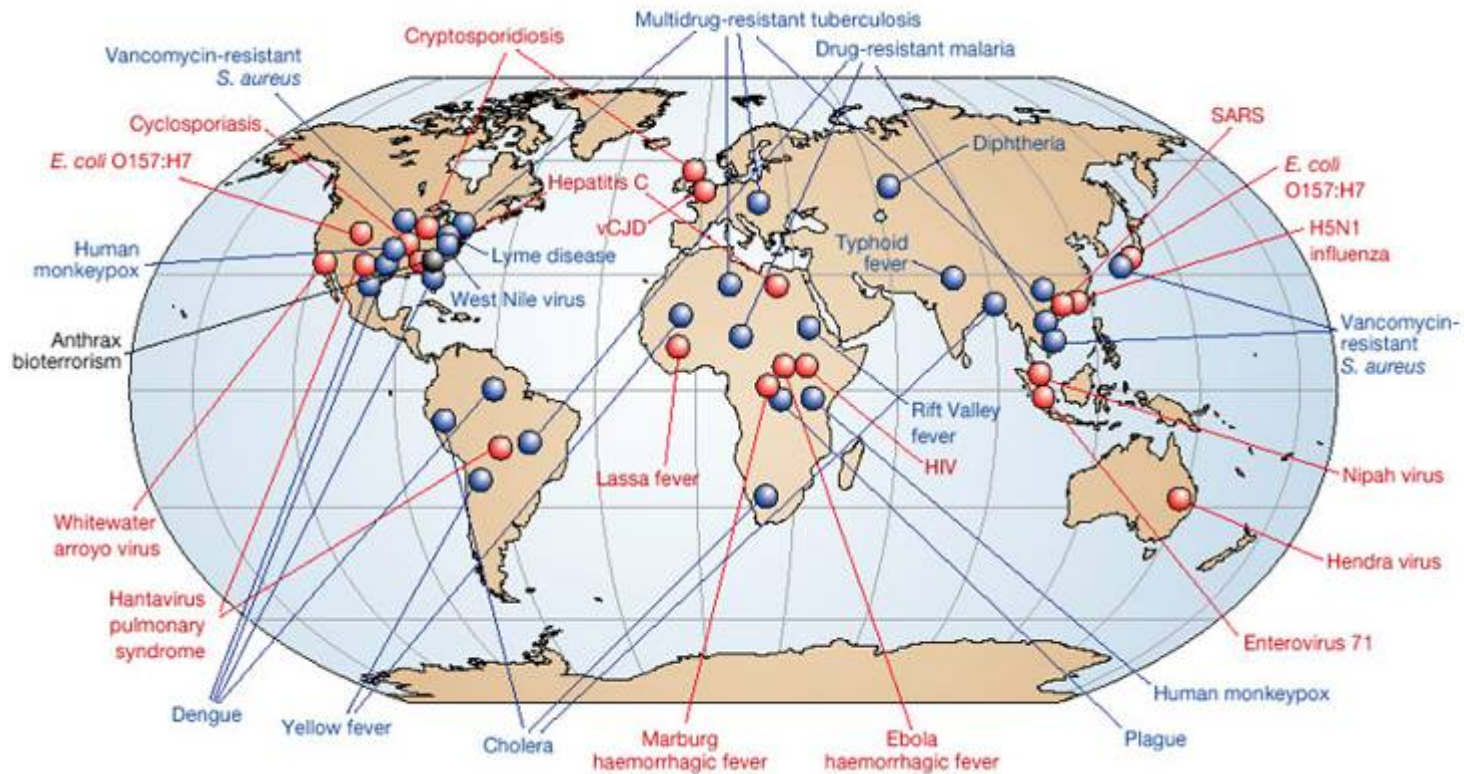
*Argentina, Australia, Canada, China, Finland,
France, Germany, Japan, Netherlands,
Panama, Portugal, Switzerland, UK, USA,
UNESCO, WCRP & WMO*





Health and Environment CoP

*Brazil, EC, France, Senegal, USA, IEEE, UNOOSA,
WHO & WMO*

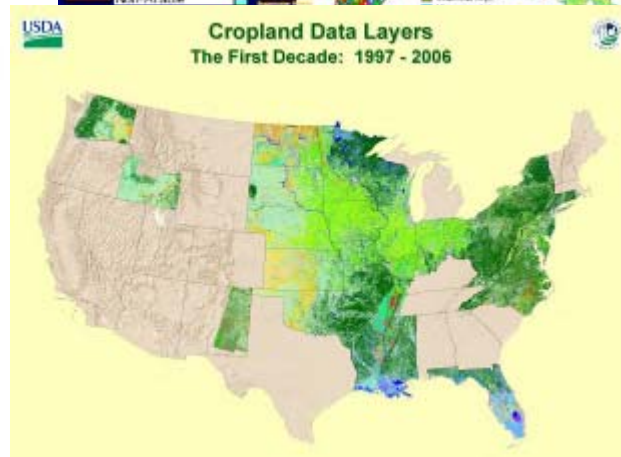
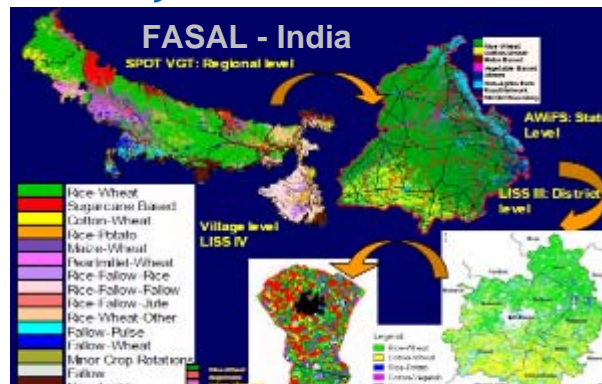
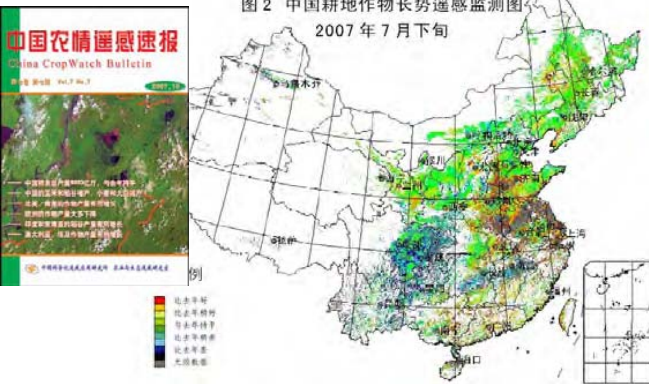


Global Emerging Diseases (Morens et al.)



Global Agricultural Monitoring CoP

Argentina, Australia, Austria, Belgium, Brazil, China, EC, France, India, Italy, Netherlands, South Africa, USA, ESA, FAO & WMO



USAID **FEWS NET**

ETHIOPIA Food Security Emergency September 20, 2007

Trade restrictions in Somali Region worsen already extreme food insecurity

Continued restrictions on trade and movement in Somali Region are worsening food security among already extremely food insecure pastoral and agro-pastoral populations in Afar, Korbah, parts of Fd, Digabarbar and Gode zones (Figure 1). These restrictions, which began in mid-June, have prevented livestock trade and impeded the movement of food and other commercial goods to rural areas. In doing so, food aid deliveries and distributions within the region have not met the needs of affected populations.

Because most people living in the affected areas of Somali Region are pastoralists or agro-pastoralists, they rely heavily on the sale of livestock and livestock products to purchase cereals and other imported food items (Figure 2). But, trade and movement restrictions make it nearly impossible for those populations to access livestock markets to sell their animals. In addition, prices for those animals and other imported food items that are still available in restricted areas are up to three times their normal levels because of the limited supply and flow of goods. Populations in these areas are reportedly consuming wild foods, and in the worst food insecure households, slaughtering livestock – their main source of income – for consumption. If trade restrictions continue, these negative coping strategies will lead to destitution, increasing and further protracting the already extreme food insecurity of affected populations.

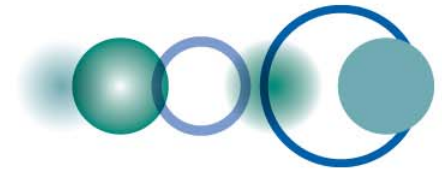
During the second week of August, military convoys began transporting some commercial food to the restricted areas within Somali Region, but the amounts of food dispatched are reported to be insufficient to meet all of the areas' needs. The Disaster Prevention and Preparedness Agency has also dispatched relief food aid to these areas, though most actual distributions have not yet taken place. While the movement of some commercial and relief supplies into these areas will stabilize food shortages slightly, the amount of food currently being sent through these channels is much lower than the needs in the areas. In addition, men if commercial food was allowed into these areas without restriction, commercial prohibitions on the movement of livestock and livestock products for sale in markets outside restricted areas will not allow affected populations to earn sufficient income to buy cereals and other goods. Distributions themselves need to be intensified, and used with the amount of relief food provided should be increased to cover the needs of pastoral and agro-pastoral population living in these areas.

Figure 1: Estimated current food security conditions (July to September 2007)

Figure 2: Income and income sources by wealth group in the Hoard pastoral zone

Source: IC, UK, Food Emergency Response Unit

FAHNE EARLY WARNING SYSTEMS NETWORK
For more information see: www.fews.net/ethiopia



GEOSS Common Infrastructure (GCI)





Main GEO Web Site

Web browser

Applications

GEOSS Common Infrastructure

Registries

- GEOSS Component and Service Registry
- GEOSS Standards and Interoperability Registry
- Best Practices Wiki
- User Requirements Registry

GEO Web Portal

GEOSS Clearinghouse

Unregistered Community Resources



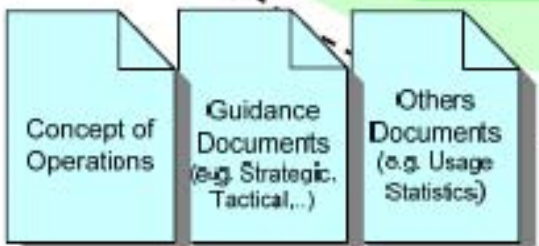
Clearinghouse provides means to connect to registered services via metadata from catalogues

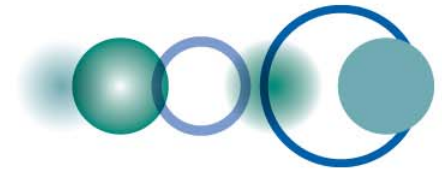
Registered components and services



Registration

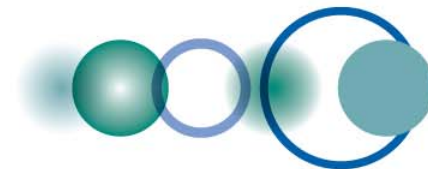
Catalog queries





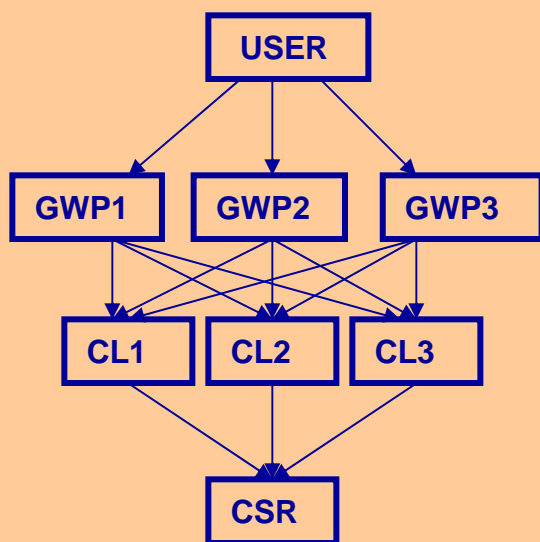
GCI Coordination Team

- The 2009 GEO VI Plenary endorsed the GCI architecture recommended by the IOC TF.
 - single GEO Web Portal (GWP) and a single Clearinghouse (CH)
- The GCI Coordination Team (GCI-CT) has been created to define the selection process and oversee the long-term operations of GCI.
 - GCI-CT Kick-off Meeting, **Feb 23-24, 2010.**

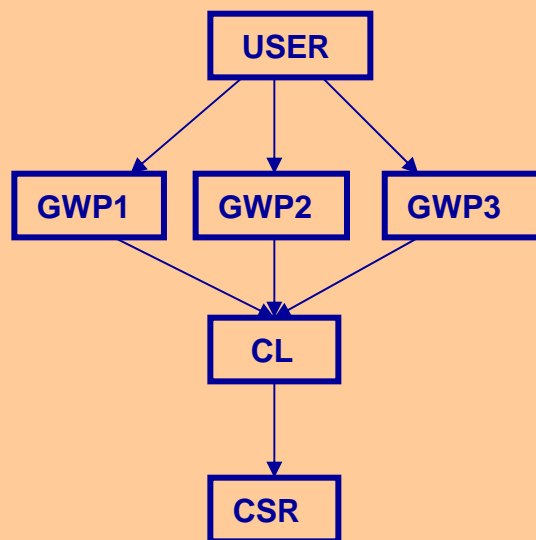


GCI-CT: Selection of a single CL & GWP

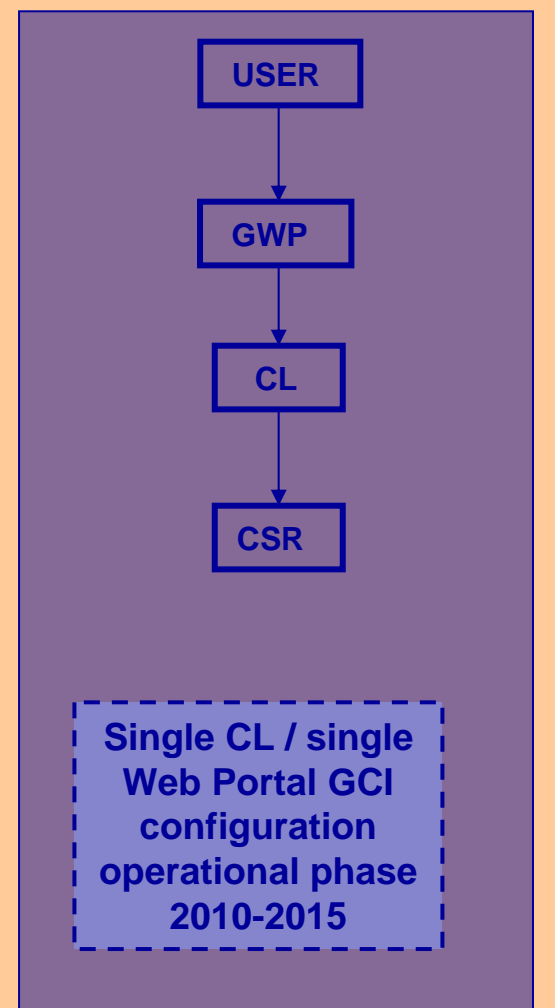
Endorsed by Plenary



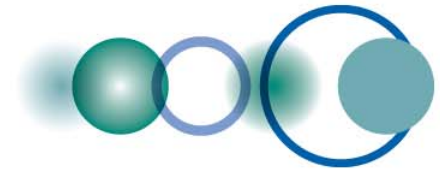
**Current GCI
configuration IOC
phase 2008-2009**



**Single CL /
multiple Web
Portal GCI
configuration
operational phase
2010-2015**



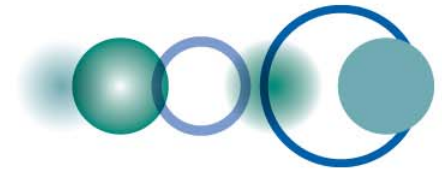
**Single CL / single
Web Portal GCI
configuration
operational phase
2010-2015**



GCI-CT: Terms of Reference

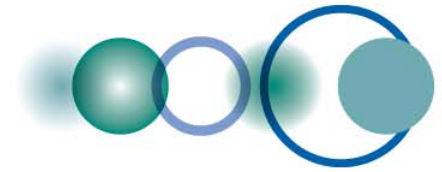
Objectives: The GCI-CT is convened:

- to provide guidance on the sustained operation of the integrated GCI and its components in light of known and evolving requirements, whilst adhering to agreed architecture standards and principles;
- to provide recommendations including provisions for resource needs, when appropriate, addressing sustainability and transparency of GCI operations;
- to engage the GEO Members, PO and component providers in assuring sustained and scalable operations of the GCI to realise the full potential of GEOSS;
- to facilitate collection of sufficient resources of documented quality in the GCI.



GCI Selection Process: Testing Phases

- Testing aims at
 - Verifying the implementation of the CSR, CLs and GWPs against Consolidated Requirements → *functional testing*
 - Involving the User Community to evaluate the Usability of the GCI through the use of the GWPs → *usability testing*
- GCI Testing Teams
 - Brazil (**INPE**) and European Commission (**JRC**) volunteer to run the Functional Tests
 - US (**EPA**) volunteer to run the Usability Tests.

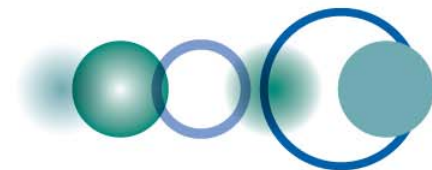


GCI-CT: Action (Work) Plan Item 4

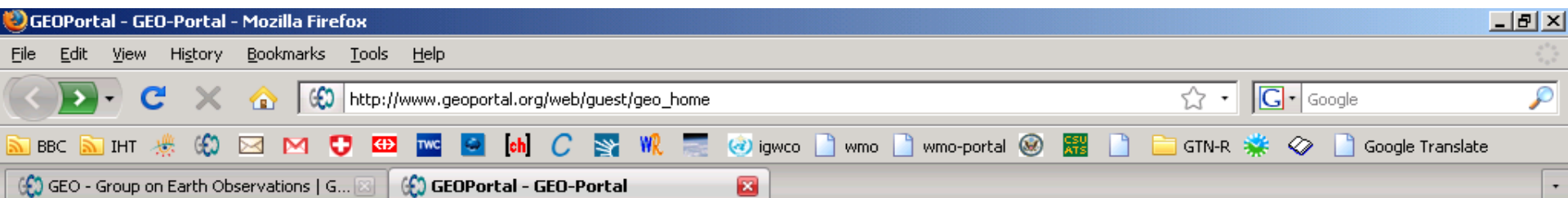
GCI Component Provider Selection Process

Based on the selection criteria and the results of the usability and the functional testing:

- GCI-CT will prepare recommendations to approve the operation of single GCI components for each function. *Due end-May 2010;*
- Finalize document to recommend the most-highly qualified provider solutions to Executive Committee.
Due mid-June 2010.



GEO Portal (ESRI, Compusult, ESA)



GROUP ON EARTH OBSERVATIONS |
 GEO Portal |
 |

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Provide Feedback to GEO

BROWSE RESOURCES BY SOCIAL BENEFIT AREAS

- DISASTERS**
- HEALTH**
- ENERGY**
- CLIMATE**
- WATER**
- WEATHER**
- ECOSYSTEMS**
- AGRICULTURE**

Europe Asia

South America Africa **Africa**

The planet's 2nd largest continent, includes (53) individual countries. It contains the Nile River, the world's longest,

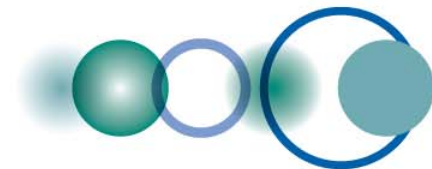
BREAKING NEWS

HURRICANES IN HAITI, EXTENSION OF CALL

On 11 September charter activation 220 was extended for a third time to cover the area hit successively by Hurricane Gustav, Hurricane Hanna, and Hurricane Ike, as the city of Gonaives remained under water and media reported about 500 dead.

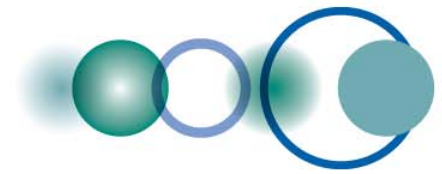


[More...](#)



Data Sharing Task Force

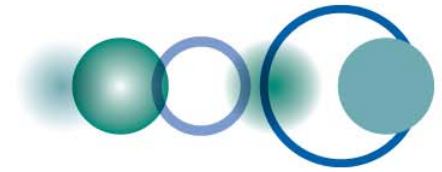




GEOS Data Sharing Principles

The societal benefits of Earth observations cannot be achieved without data sharing.

- **There will be full and open exchange of data, metadata and products shared within GEOS, recognizing relevant international instruments and national policies and legislation.**
- **All shared data, metadata and products will be made available with minimum time delay and at minimum cost.**
- **All shared data, metadata and products being free of charge or no more than cost of reproduction will be encouraged for research and education.**

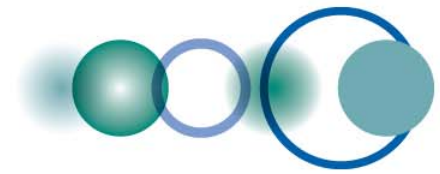


DSTF Terms of Reference

- Submit an updated draft of *Implementation Guidelines for the GEOSS Data Sharing Principles* to Plenary 2009.

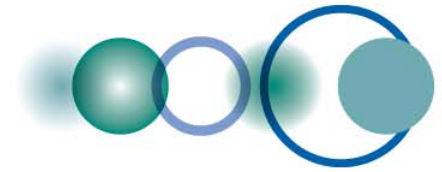
Accepted by the GEO-VI Plenary

- Promoting implementation of the principle of full and open exchange of data according to GEOSS Data Sharing Principles (DSP).
- Encouraging GEOSS users to reuse and re-disseminate shared data, metadata and products.
- Ensuring consistency in the implementation of the GEOSS DSP with relevant international instruments and national policies and legislation.
- Implement pricing policies consistent with GEOSS DSP.
- Reducing time delays for making data available through GEOSS.
- Promoting research & education uses of GEOSS data, metadata and products.



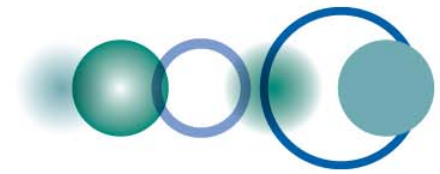
DSTF Terms of Reference

- **Prepare an Action Plan** to implement the Data Sharing Principles and **to enable** the development of **working procedures for data sharing** within GEOSS.
- **Produce documentation** (including assessments on the actions to be taken; some representative costs and benefits; and, responsibilities for the proposed data sharing processes) to support adoption of the *Implementation Guidelines* and the Action Plan by the 2010 GEO Ministerial Summit.



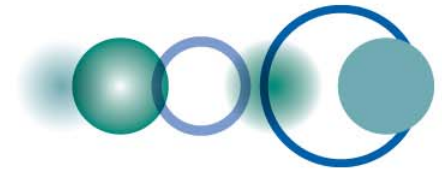
Issues Not Yet Fully Addressed

- **Handling data registered in the GCI with restrictions**
 - The Implementation Guidelines confirm that:
“**GEO welcomes all data contributions into the GEOSS.** When registering data in GEOSS, the contributor should present any restrictions arising from relevant international instruments and national policies and legislation, and the duration of each restriction, that is applicable to the exchange of the data, metadata, and products submitted.”
 - GEO should therefore **enable data users to be made aware of any restrictions on data contributed** by data providers.
- Some GEO Members state that GEO must ensure that any restrictions are strictly adhered to by users.
- Other Members state that GEO cannot and should not be put in the position of ensuring or policing data provider restrictions. The GCI, however, could send a user back to the data provider to access its data and comply with any restrictions.



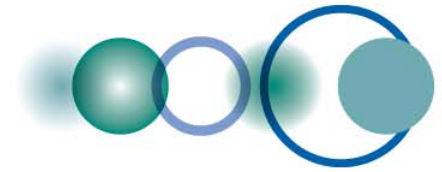
Issues Not Yet Fully Addressed

- **Reuse/re-distribution and data tagging**
 - Some restrictions on re-distribution, reuse and copying of data are legally derived from copyright.
 - In order to “police” any possible infringement of a data provider’s IPR / copyrights, **should the GEO facilitate or introduce a “data tagging”** mechanism into the GCI? And if so, how far should this go and how sophisticated should it be?
 - Whilst it is the responsibility of data providers to adopt data tagging if they wish, does GEO become legally responsible if GEO facilitates it, and legally liable for failed tagging?"
 - Data tagging **may also impact citation and attribution of data sources**, a concept the DSTF fully endorses. How would this work?



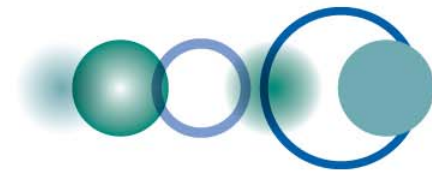
Issues Not Yet Fully Addressed

- Licenses
 - There is currently **no consensus** within the DSTF on the **use or advantages of licensing**.
 - There is **consensus that providing metadata information that assigns categories** to data and products **may be useful**, e.g.:
 - Full and open with no restrictions
 - Full and open with attribution requirements
 - Full and open with attribution and non-commercial use requirements
 - Re-distribution restrictions
 - Price above the cost of reproduction and distribution (or marginal cost of fulfilling the user request)
 - Re-distribution restrictions and price above reproduction and distribution
 - If GEO were to facilitate license arrangements between and amongst GEO Members and Pos, would this place GEO in a position of legal responsibility for enforcing these licenses?



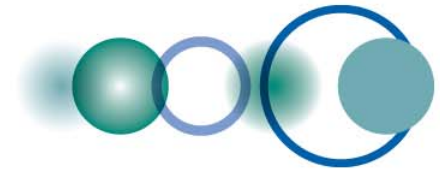
Next Steps

- Initial drafts of the Data Sharing Action Plan documents are presented to the GEO Executive Committee, 22-23 March, for **review and guidance**.
- A full consultation with the GEO Community, including GEO Committees and Task Leads, will take place in May, following the release, by 1 May, of an updated Action Plan and the complete set of Supporting Documents.
- Based upon the feedback from the GEO Community, updated versions of the Action Plan and Supporting Documents will then be prepared for the July meeting of Executive Committee.



GEOSS Monitoring and Evaluation





GEOS Monitoring and Evaluation

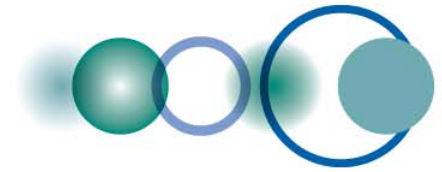
M&E Working Group established to define the framework and to provide oversight of the M&E process

Monitoring is based on existing tools and practices while yearly evaluations will be performed by dedicated teams, one per year, starting from 2010

First evaluation, the mid-term assessment in 2010, is focused on progress on Cape Town Declaration;

Second evaluation will begin transition to a systematic progress evaluation against GEOS strategic Targets and will include one GEOS Transverse and one Societal Benefit Area.

Third and subsequent evaluations will start the regular evaluation cycle and will include two or three Transverse and three Societal Benefit Areas per year.

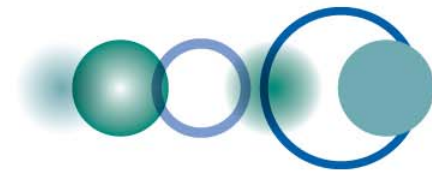


Evaluation Plan for 2010

The Evaluation Team plans to acquire data through different mechanisms:

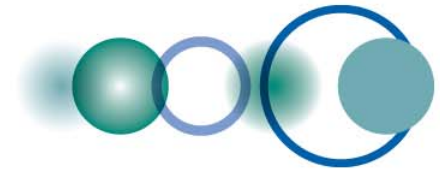
- Review of various internal (to GEO) and external documents to help guide the midterm evaluation
- Text comparisons of key documents;
- Individual interviews
- A broad web-based survey, directed inside and outside the GEO Community

The mid-term Evaluation Report will be distributed to the Executive Committee meeting, on 15-16 July 2010.



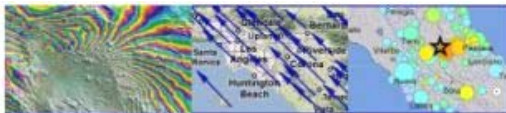
Latest Developments





Progress since GEO-VI

- New web portal established for “Haiti Supersite”. First time that satellite agencies have provided data and products quickly to central data repository accessible by researchers
- Real-time tool developed to update river discharge and support flood forecasting. Pan-African flood early-warning system initiated based on the European Flood Alert System
- Western-Pacific ocean-wave forecasting system developed strengthening operational oceanography in GEOSS. A global sea-surface temperature analysis based on 7 satellites was made operational. The Jason-3 programme was approved by EUMETSAT Member States ensuring continuity of the Jason series
- Climate reanalysis dataset spanning the entire 20th century (1891 to 2008) released, including global 4-times-daily atmospheric and surface analysis fields
- Global Phenology Network expanded throughout the world. Plant phenological database developed and phenological forecasts produced for Europe



SUPERSITES

- main
- documents
- apply for access
- collaborators
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- Los Angeles
- Seattle-Vancouver
- Vesuvius
- Etna
- Istanbul
- Tokyo
- Chile
- Haiti
- L'Aquila

Welcome to the Supersite Website

The Supersites have data for the study of natural hazards in geologically active regions, including information from Synthetic Aperture Radar (SAR), GPS crustal deformation measurements, and earthquakes. The data are provided in the spirit of GEO, ESA, NASA and the National Science Foundation (NSF), that easy access to Earth science data will promote their use and advance scientific research, ultimately leading to reduced loss of life from natural hazards.

Click on a site in the map below, or see the regions listed below in Phase 1 and Phase 2 Supersites.

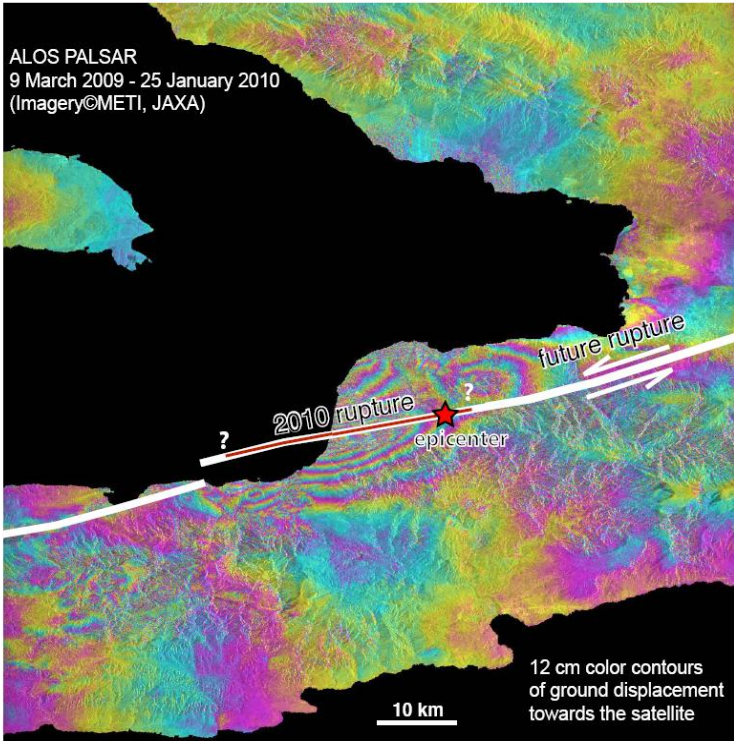
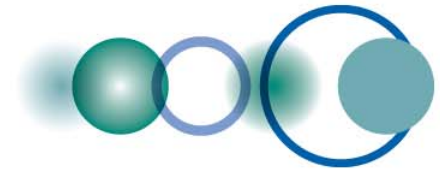
This website is a prototype created by [UNAVCO](#) and [WInSAR](#) on behalf of the Group on Earth Observations ([GEO](#)) and the European Space Agency ([ESA](#)). The web site will attain an official design and move to a permanent home once a host is selected.



Summary

Supersites is an initiative of the geohazard scientific community. The Supersites provide access to spaceborne and in-situ geophysical data of selected sites prone to earthquake, volcano or other hazards. The initiative began with the "Frascati declaration" at the conclusion of the 3rd International Geohazards workshop of the Group of Earth Observation (GEO) held in November 2007 in Frascati, Italy. The recommendation of the workshop was "to stimulate an international and intergovernmental effort to monitor and study selected reference sites by establishing open access to relevant datasets according to GEO principles to foster the collaboration between all various partners and end-users". This

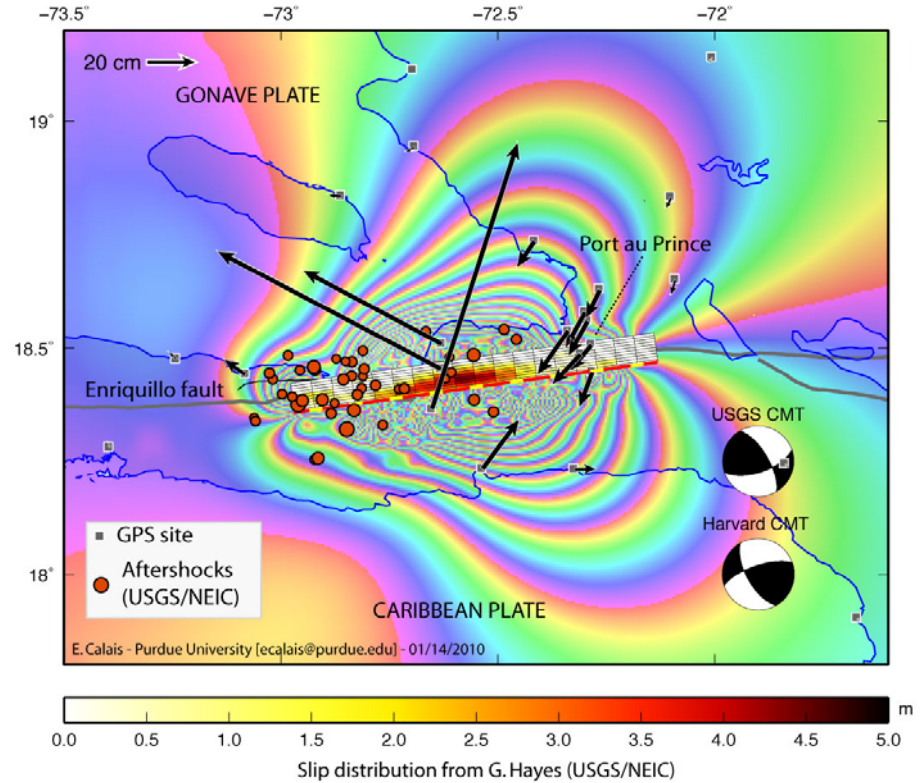




Sang-Hoon Hong, Falk Amelung, Tim Dixon, Shimon Wdowinski, Guoqing Lin, Fernando Greene
Rosenstiel School of Marine & Atmospheric Science, University of Miami

PALSAR interferogram
(Falk Amelung, Miami Univ)

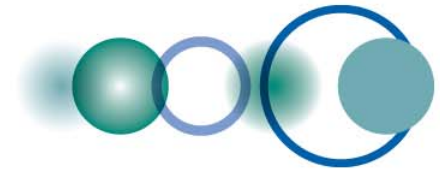
SIMULATED COSEISMIC GROUND DEFORMATION
HAITI - Mw=7.1 - January 12, 2010



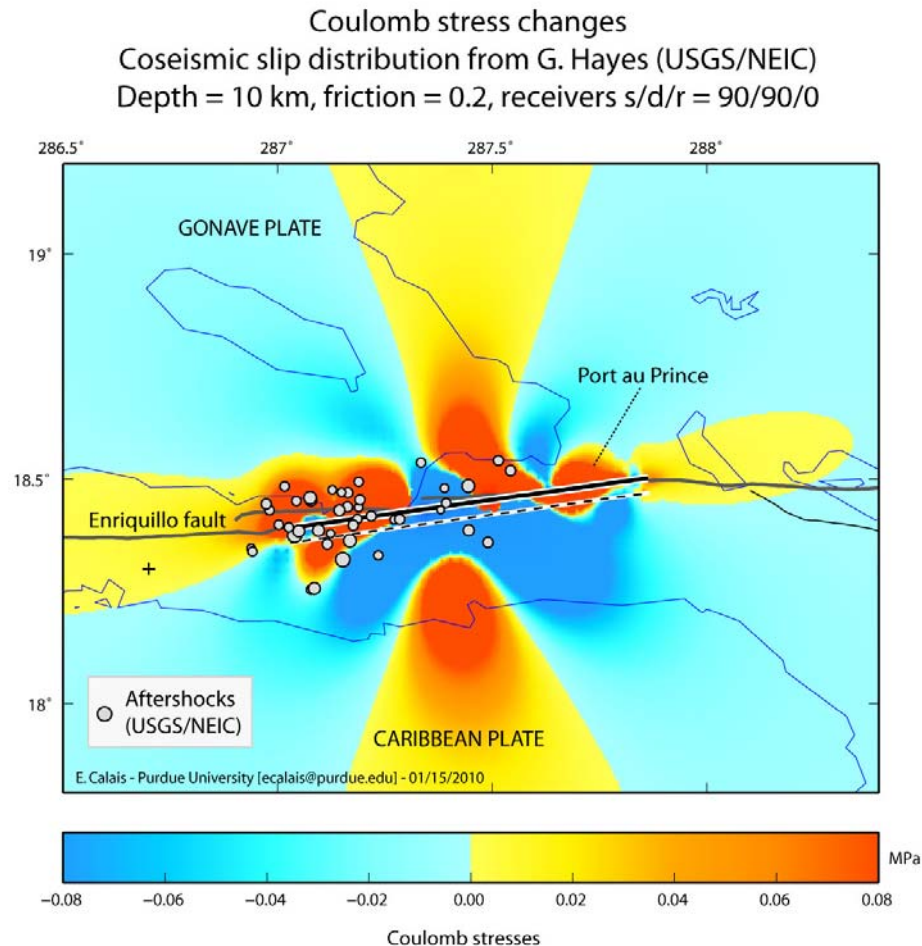
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 m

Slip distribution from G. Hayes (USGS/NEIC)

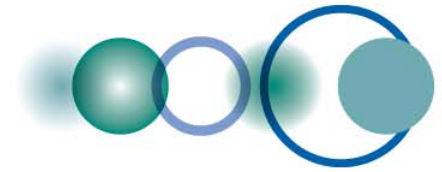
Synthetic Interferogram
(Eric Calais, Purdue Univ)



Coulomb Stress Redistribution

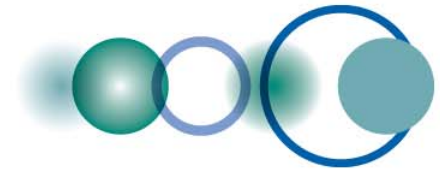


USGS-WHOI-DPRI stress triggering model



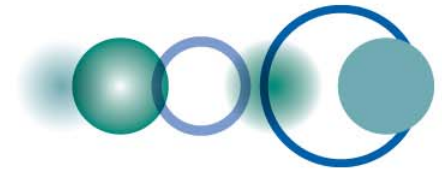
Progress since GEO-VI

- Two operational wildfire information systems contributed to GEOSS: the European Forest Fire Information System and the Global Fire Information for Resource Management System
- Internet tool developed to increase the accuracy of land cover maps. The Geo-Wiki relies on volunteers to review hotspot maps of global land-cover disagreement
- New forest maps developed. First draft of 250m forest cover maps produced and 13 500 samples of Landsat data for 1990, 2000 and 2005 pre-processed.
- Asia-Pacific Biodiversity Observation Network established. Continuous Plankton Recorder Survey contributed as a new GEO BON early product
- Public-private partnership initiated to forecast and mitigate space weather effects on high-voltage power transmission systems. Products based on NASA upper-atmospheric observations & models and private decision-support systems



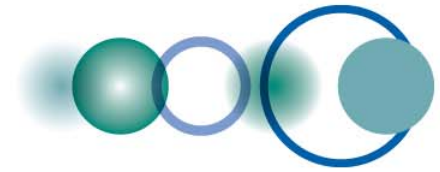
Progress since GEO-VI

- Data sharing arrangements standardized across 3 GEONETCast Network Centers. Alert GEONETCast Channel developed for several regional broadcasts. Work with the International Charter for Space and Major Disasters helped begin trial transmissions of Charter information over regional broadcasts
- The GEONETCast Product Navigator established as operating online capability.
- ITC GEONETCast toolbox, offering open, direct and real-time access to GEONETCast data, fully functional in several institutions in Europe and African countries
- GEONETCast pilot projects established to foster use and regional distribution of high-impact guidance products. First pilot about expanding receiving station capabilities in Costa Rica to disseminate Central American Flash Flood Guidance products
- Full and open access to Sentinel data approved by the European Space Agency members.



Progress since GEO-VI

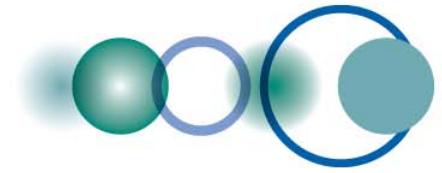
- Climate portal set up to provide a single point-of-entry for climate information, products and services. Includes interactive "climate dashboard" that shows a range of constantly updated climate datasets
- GEO Forest Carbon Tracking Portal launched - allowing users to visualize national demonstrators, acquisitions of satellite and in-situ data, and maps and information resulting from data processing
- Prototype online tool developed to measure changes in and around protected areas.
- New regional center for monitoring of tropical forests established in the Amazon region to offer training programs tailored for students from developing countries, especially from Africa.
- MoU signed between the "African Regional Centre for Mapping of Resources for Development" and "Brazilian National Institute for Space Research" – to develop infrastructure and encourage the use of Earth observation data in Africa



Forest Carbon Tracking

(Australia, Brazil, Finland, Japan, Norway, USA, EC, FAO, GOFC-GOLD, CEOS)

- demonstrate that coordinated Earth observations (space and in situ measurements linked to forest models can provide reliable information of suitable consistency, accuracy and continuity to support forest carbon Monitoring, Reporting and Verification (MARV)
- define an operational information system of systems (observations, processing to relevant forest cover information and information distribution), able to support National level assessments and international agreement

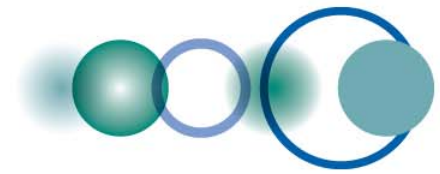


National Demonstrators

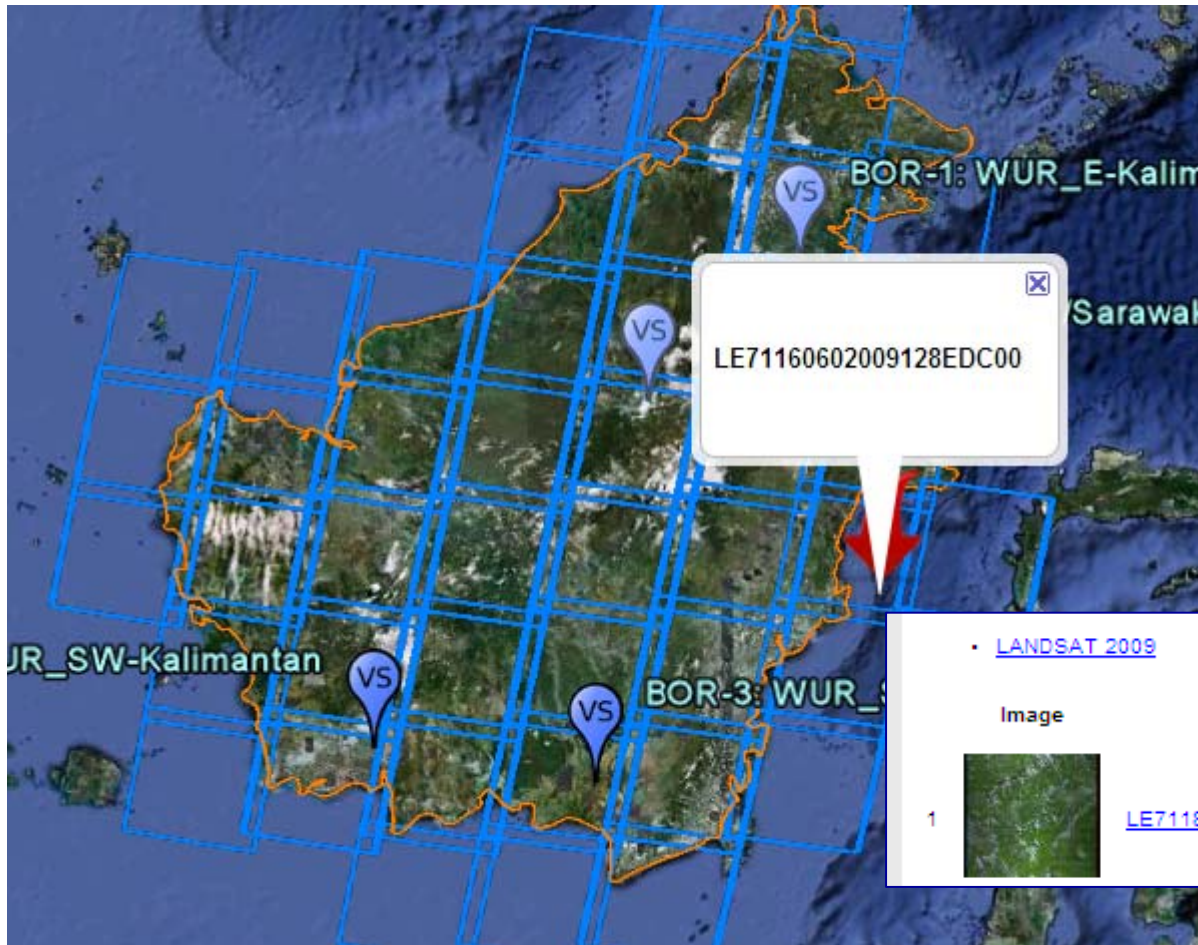
Political Map of the World, September 2008

AUSTRALIA Independent state
Bermuda Dependency or area of special sovereignty
Stuy / AZORES Island / island group
★ Capital



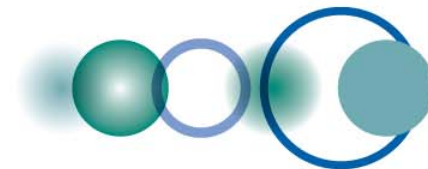


GEO FCT Portal allows image query



• [LANDSAT 2009](#)

Image	Name	Links	Date	Cloud Cover
1 	LE71180602009142EDC00	Outline Full metadata	2009/05/22	21.3%



GEO FCT

The Indonesia National Demonstrator

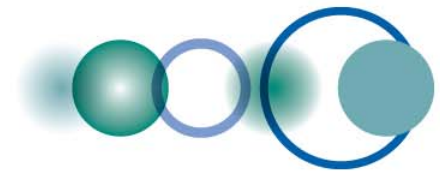


4 VS-Verification Sites

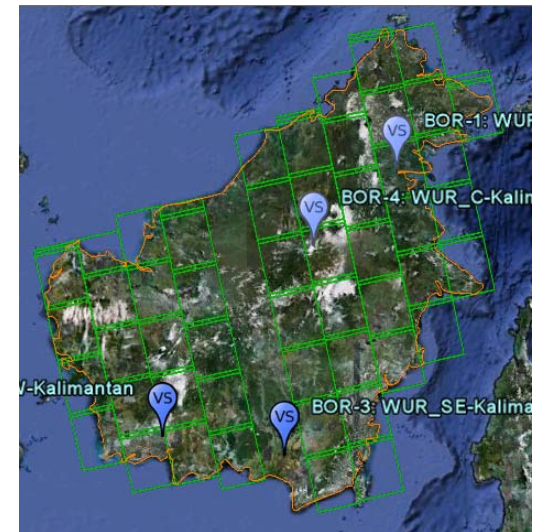
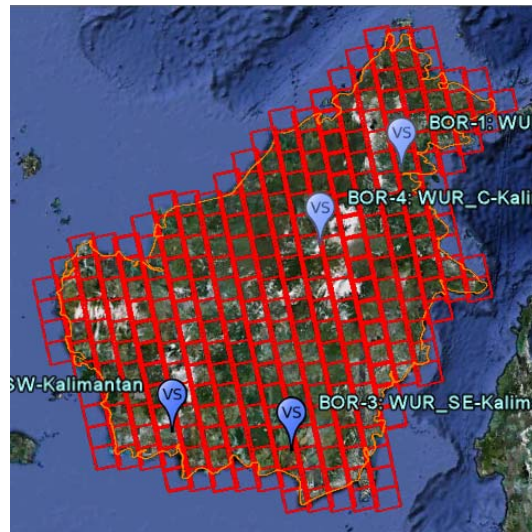
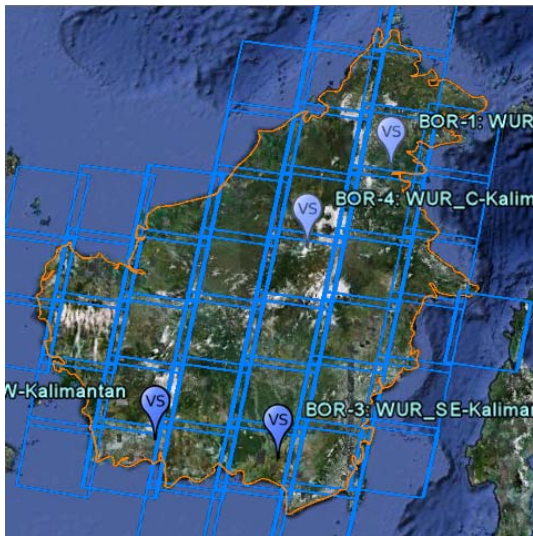
Center coordinates

BOR-1	WUR_E-Kalim/Sabah	N04.33	E117.01
BOR-2	WUR_SW-Kalimantan	S01.82	E111.61
BOR-3	WUR_SE-Kalimantan	S02.24	E114.41
BOR-4	WUR_C-Kalim/Sarawak	N02.55	E115.08

Radius 20 km



Moderate Resolution Satellite data acquired over Borneo - Summer 2009



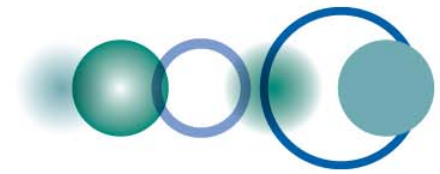
Landsat



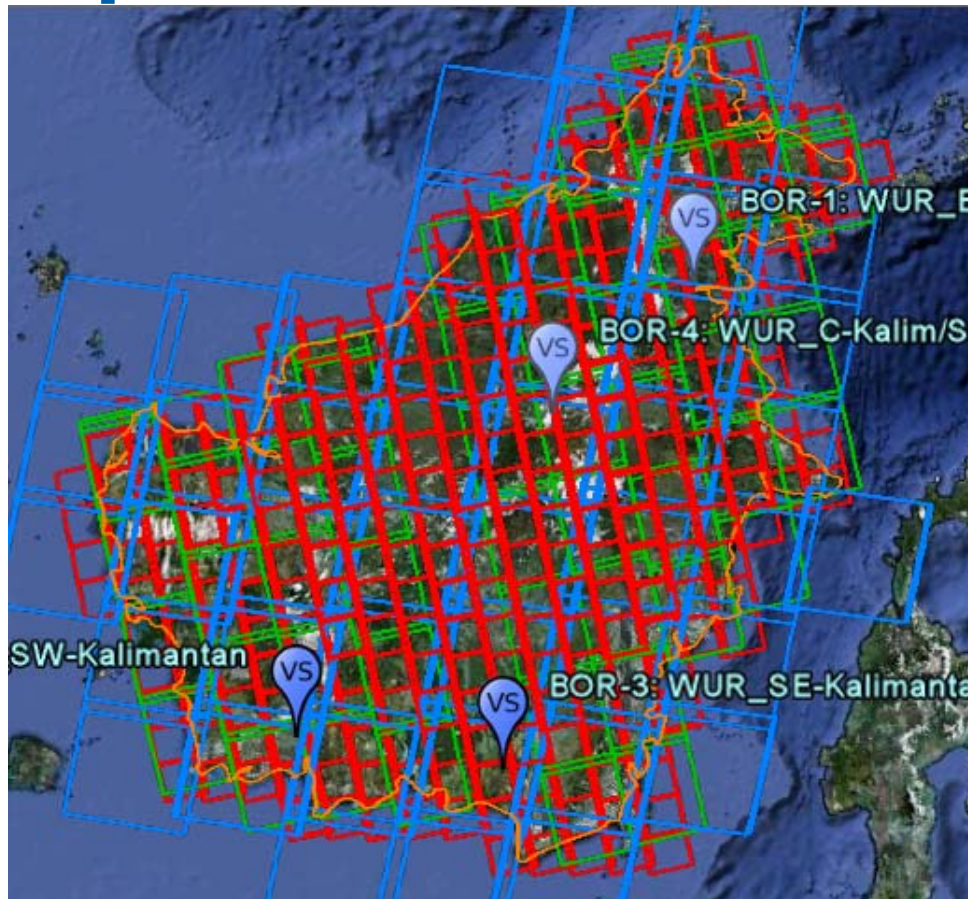
ALOS PALSAR



Radarsat 2

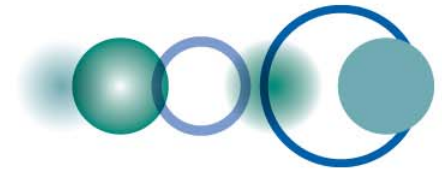


Moderate Resolution Satellite data acquired over Borneo - Summer 2009



Sensor	Borneo
ALOS PALSAR	507
RADARSAT-2	161
ENVISAT ASAR	acquisition by RADARSAT
Landsat 5 & 7	173
CBERS-2B: CCD	N/A

Scenes acquired June-Sept 2009



Satellite data available over Borneo

Moderate resolution wall to wall

Landsat (1998-2009)

ALOS Palsar (2007-2009)

Radarsat 2 (2009 + historical data)

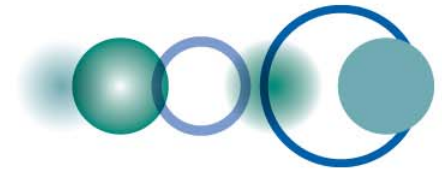
High resolution VS

TerraSAR-X (2009)

Cosmo-SkyMed (2009)

Commercial satellites (2009)

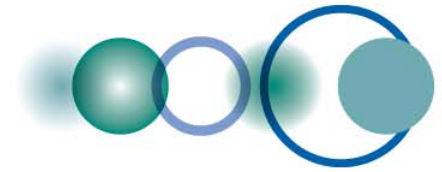
LAPAN Archive



GEO FCT

Key events for 2010 (1)

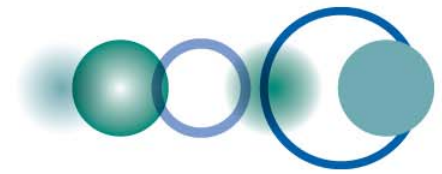
- Review of the initial results from 2009 Demonstration, SDS meeting 11-12 May, Woods Hole
- Decision on the inclusion of new National Demonstrator Countries, (priority candidates include Bolivia, Democratic Republic of Congo, Peru plus the extension of Indonesian area, adding Sumatra to Borneo) mid-May
- Joint GEO UN-REDD Workshop on MRV Systems, 23-25 June, Guadalajara Mexico



GEO FCT

Key events for 2010 (2)

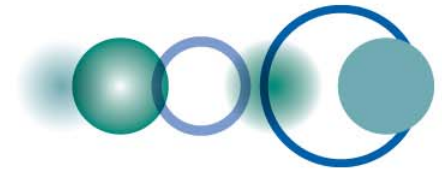
- GEO FCT Information Day, TBD June, Geneva
- Review of the proposal for the detailed planning phase for the global, operational FCT network, 13-14 July, Rome
- Review of the results from 2009 Demonstration, being planned for September/October
- GEO VII and Ministerial Summit, 3-5 November Beijing
- COP16, 29 November-10 December, Mexico



The 4th GEOSS Asia-Pacific Symposium

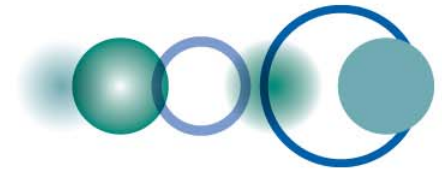
Bali, Indonesia, 10-12 March 201

- Generate synergies and strengthen in situ data gathering coordination and collection on supersites (e.g., the Borneo Island)
- Establish mechanisms for coordinating national and regional inputs into GEOSS
- Request securing access to fundamental datasets such as high-resolution (30 m or better) Digital Elevation Models to all of the FCT task's demonstrator countries
- Further develop the GEO Portal and other community web portals to more effectively disseminate data based on the GEO Data Sharing Principle
- Provide the free, open and timely dissemination of RAMA (Research Moored Array for African-Asian-Australian Monsoon and Prediction) dataset



Upcoming Major Events

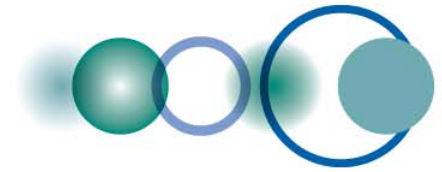




2010 Work Plan Symposium

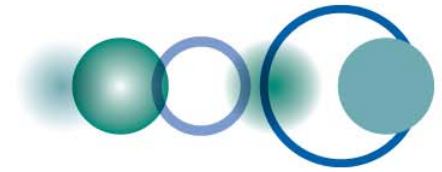
17-19 May 2010, Pretoria

- First Work Plan Symposium Ever
- Convening Leads of all Work Plan Tasks
- Key Objectives:
 - Foster Work Plan Implementation across and within GEOSS areas
 - Develop recommendations for 2011 Work Plan Update
 - Identify achievements that could be presented at Beijing Ministerial Summit Exhibition
 - Initiate discussions in preparation of GEO 2012-2015 Work Plan



GEO Ministerial Summit Beijing, 5 November 2010

- Ministerial Declaration
- Six Showcases
 - Carbon monitoring
 - Health services
 - Geohazards "Supersites"
 - Building Capacity for PEOPLE
 - GEO BON
 - Asian regional showcase
- Bring us your data!
- The GEO-VII Exhibition
- Publication for Ministers



GEO Ministerial Summit

Main Themes

- Coordinating/Facilitating access to data and information (GCI, GEONETCast, Data Sharing, Community Portals, ...)
- In-situ observations (e.g., Coordinating Access in Supersites)
- Provision of Information services and decision-support products in Relation to their Political Priorities (Forest Carbon, Food Security, Biodiversity, Water Management, Health)

Thank you!

