

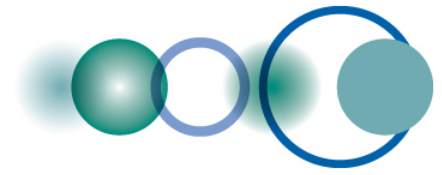
Monitoring Global Threats – A Call for International Collaboration

ABCC – Regional Implementation of a Global Vision

20 November 2012
Foz do Iguaco, Brazil

Barbara J. Ryan
Director, GEO Secretariat

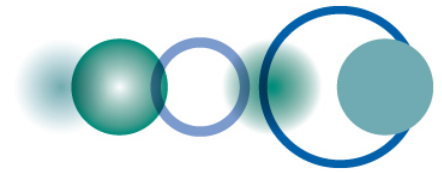




GEO --The Group on Earth Observations

Earth Observation Summit





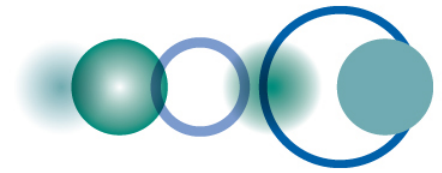
**Created in 2005, to develop a coordinated and sustained
Global Earth Observation System of Systems (GEOSS) to
enhance decision making in nine Societal Benefit Areas
(SBAs)**



GEO today:

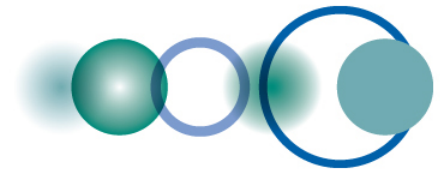
89 Members

**64 Participating
Organizations**



GEO Objectives

- Improve and Coordinate Observation Systems
- Advance Broad Open Data Policies/Practices
- Foster Increased Use of EO Data and Information
- Build Capacity



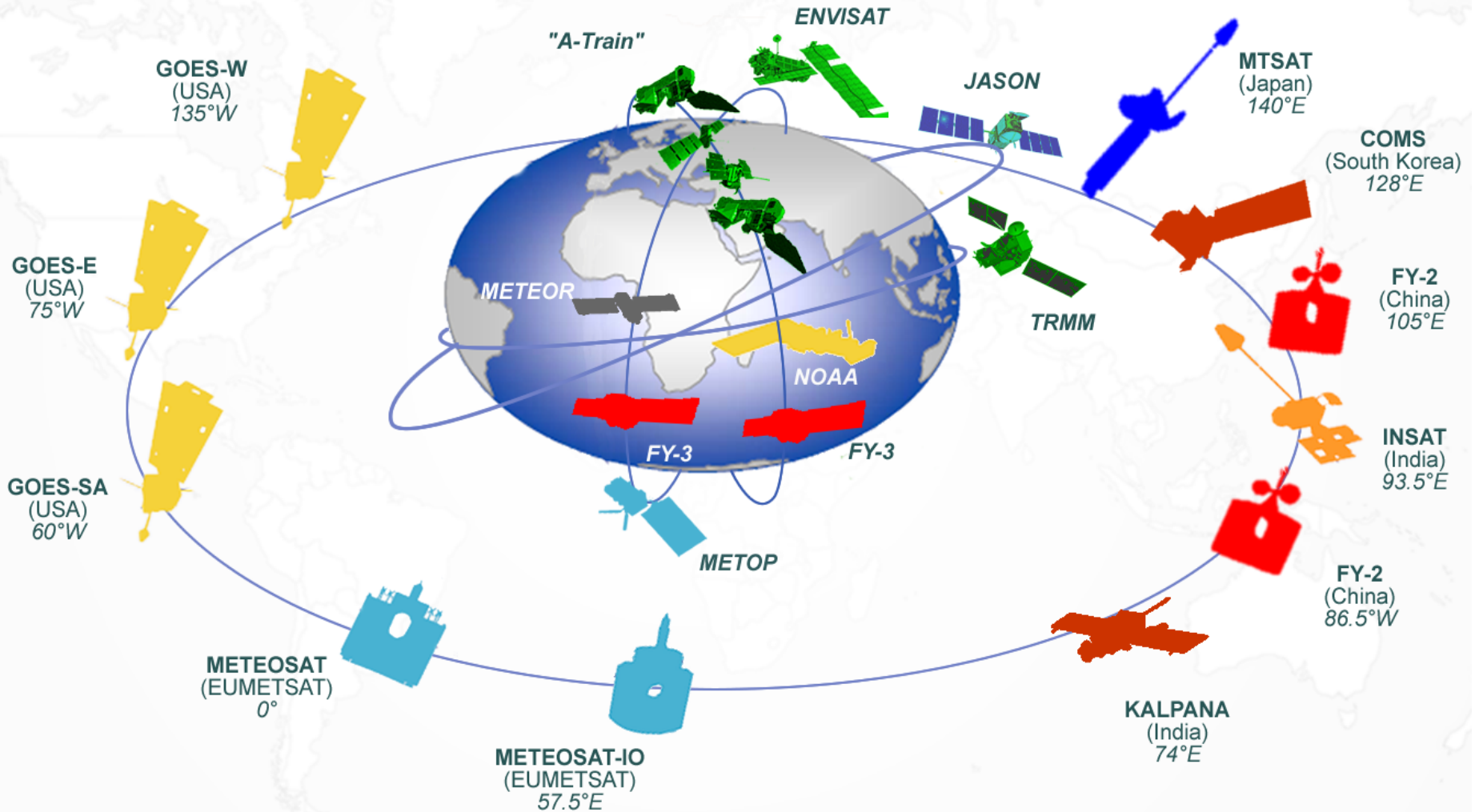
A Global, Coordinated, Comprehensive and Sustained System of Observing Systems

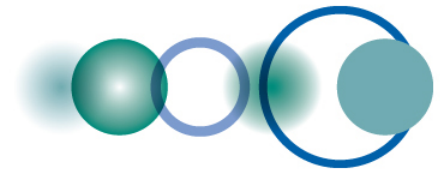
THE GLOBAL EARTH OBSERVATION
SYSTEM OF SYSTEMS





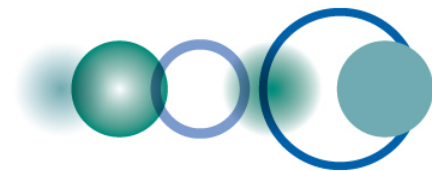
Space-based Assets





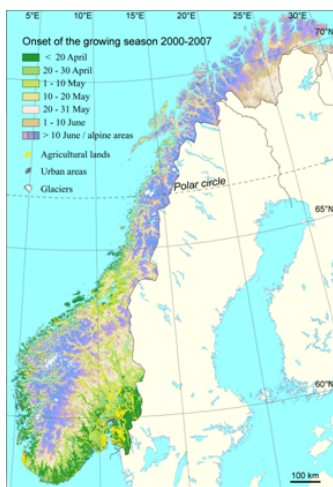
GEOSS Targeted Gaps

1. Lack of access to data and associated benefits in developing world
2. Eroding technical infrastructure
3. Large spatial and temporal gaps in specific data sets
4. Inadequate data integration and interoperability
5. Uncertainty over continuity of observations
6. Inadequate user involvement
7. Lack of relevant processing systems to transform data into useful information

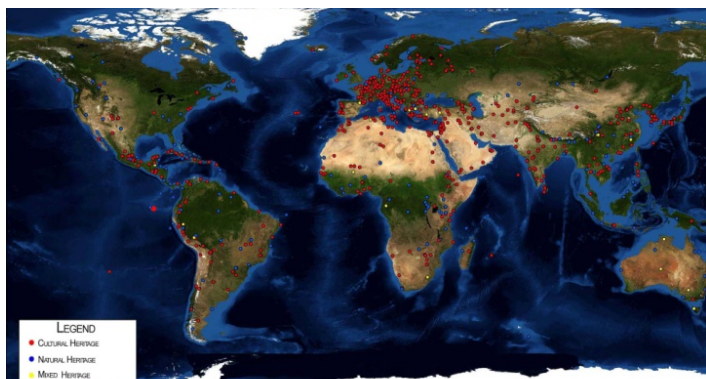


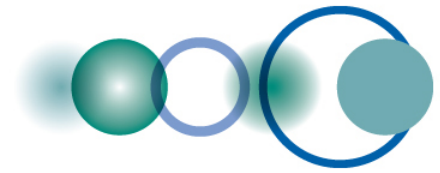
Ecosystem Classification & Mapping

(Australia, Austria, Brazil, Canada, China, EC, Italy, Paraguay, USA, RCMRD, UNESCO)



- * SHARE mountain stations operational
- * All ecosystem mapping data available; DataCORE
- * New maps of growing season
- * Atlas of 40 Chinese World Heritage Sites
- * Decision-making support: ABCC program





Improved Crop Management

(Argentina, Brazil, Canada, China, EC, France, India, Mexico, Russia, South Africa, USA, FAO)

USDA
Cropland Data Layers
The First Decade: 1997 - 2006



JECAM

Joint Experiment for Crop Assessment and Monitoring



Home

Study Sites

Canada

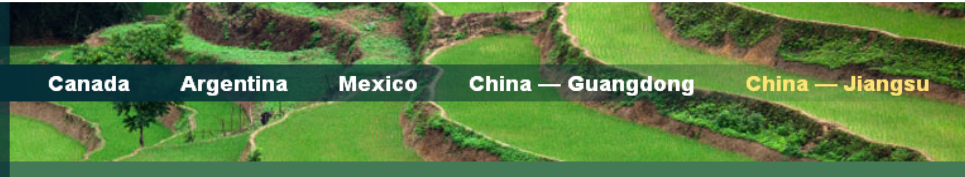
Argentina

Mexico

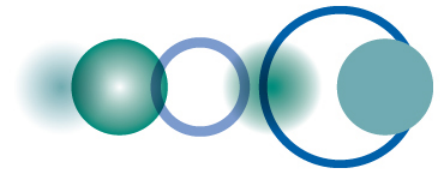
China — Guangdong

China — Jiangsu

Contact Us



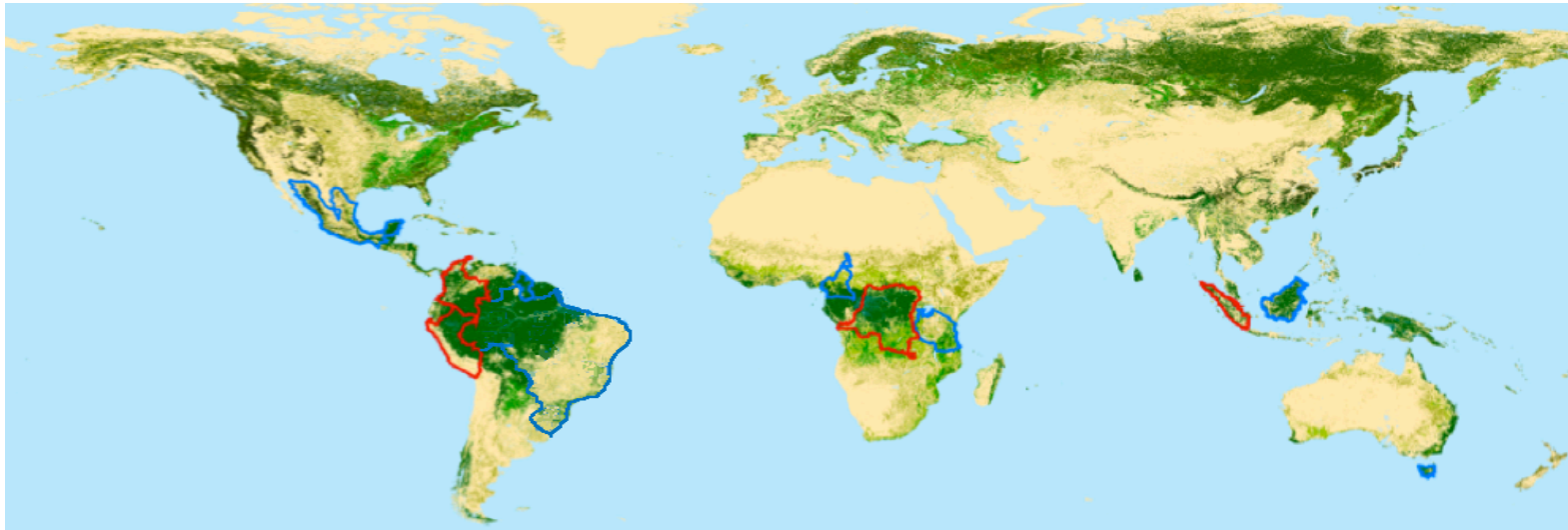
- * New GEO proposal adopted by G20 (Cannes, 3-4 Nov 2011)
- * Inter-comparisons of agricultural modeling & monitoring methods
- * 7 pilot sites in Argentina, Canada, China, Europe and Mexico
- * 2 new pilot-sites in Brazil
- * Satellite data acquisition coordinated with CEOS



Forest Carbon Tracking

(Australia, Canada, Japan, Norway, USA, CEOS, FAO)

Network of National Demonstrators



From 2009: 

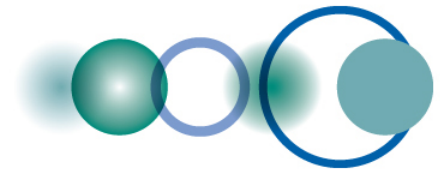
- Brazil
- Guyana
- Mexico
- Indonesia (Borneo)
- Australia (Tasmania)
- Cameroon
- Tanzania

From 2010/2011: 

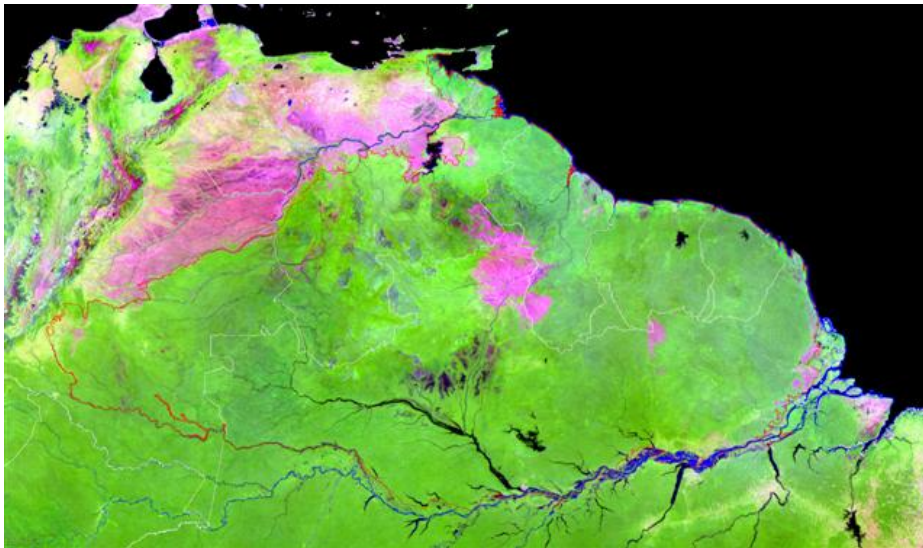
- Colombia
- Congo
- Peru
- Indonesia (Sumatra)
- **Nepal (2011)**

New projects contributed:

- * US SilvaCarbon
- * European FP7
RECOVER, REDDAF,
REDD-FLAME,
REDDINESS

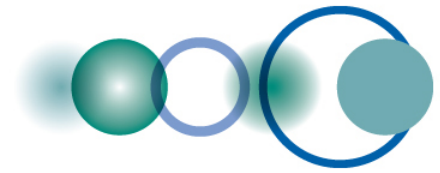


Regional Center for Tropical Forest Monitoring (Brazil, France, Italy, Japan, FAO)



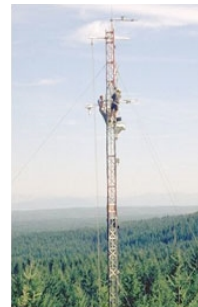
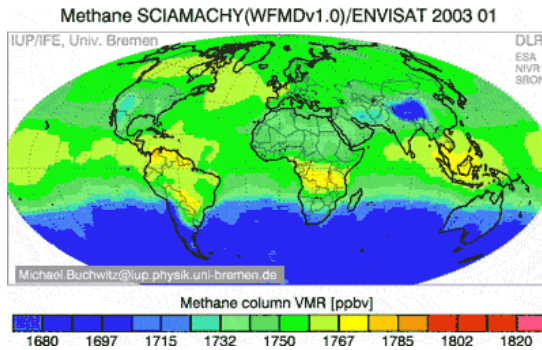
- * Training in 3 languages (English, Spanish, Portuguese)
- * Open-source software
- * Over 60 people trained from 18 countries
- * Results directly applied by Congo





More Carbon Information

(Australia, China, EC, France, Italy, Japan, Netherlands, UK, USA, CEOS, ESA, GTOS, WMO)

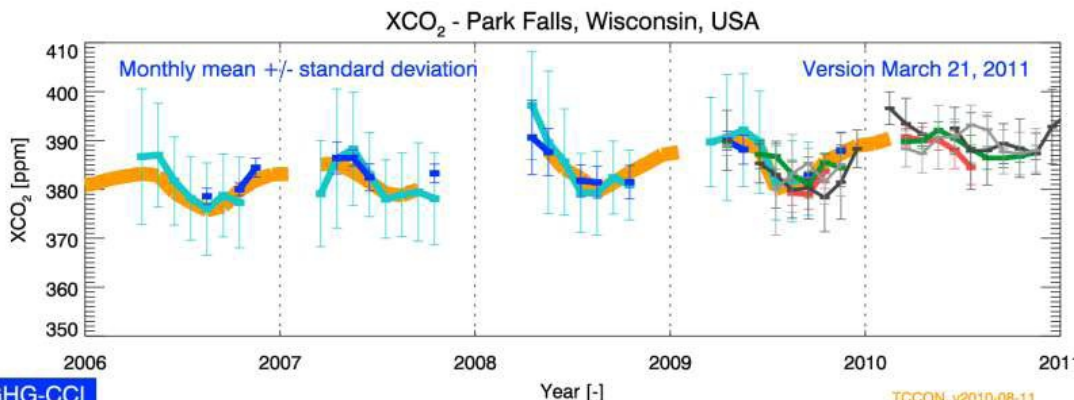


* Ground-based Carbon datasets released (FLUXNET, TCCON)

* Essential for calibration/validation of satellite data

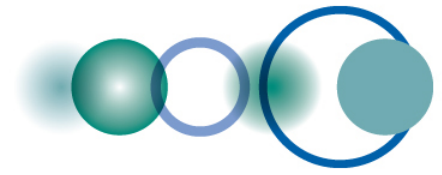
* New European projects launched for estimating regional CO₂ and CH₄ sources & sinks

* GEO Carbon Strategy



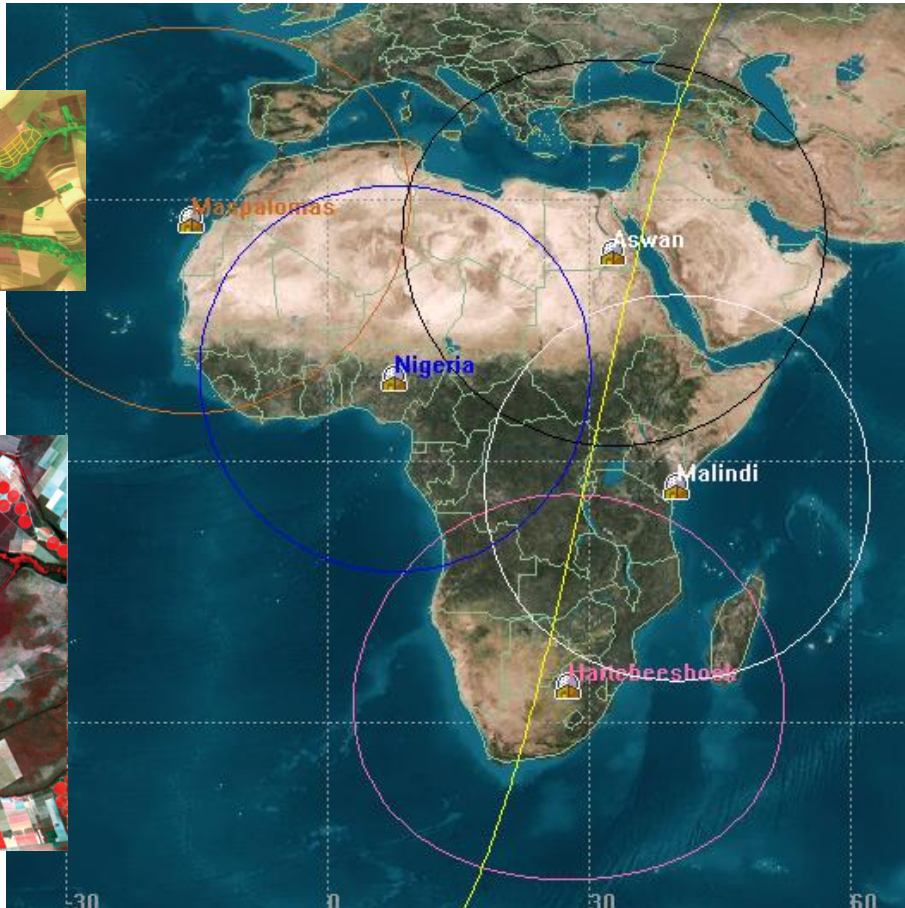
GHG-CCI

SCI_WFMD_v2.1 IUP <500km Nret/month>100	SCI_BESD_v0.8.19 IUP <350km -8.28ppm Nret/month> 3	GOS_SRFP_v1.0 SRON <5deg Nret/month> 3	GOS_OCFP_v2C ULE <5deg +1.79 ppm Nret/month> 3	GOS_ACOS_v2.8 NASA_ACOS <5deg +7.7 ppm Nret/month> 3	GOS_NIES_v01.xx NIES <5deg +8.85 ppm Nret/month> 3
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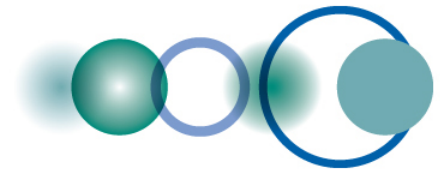


Next Generation CBERS

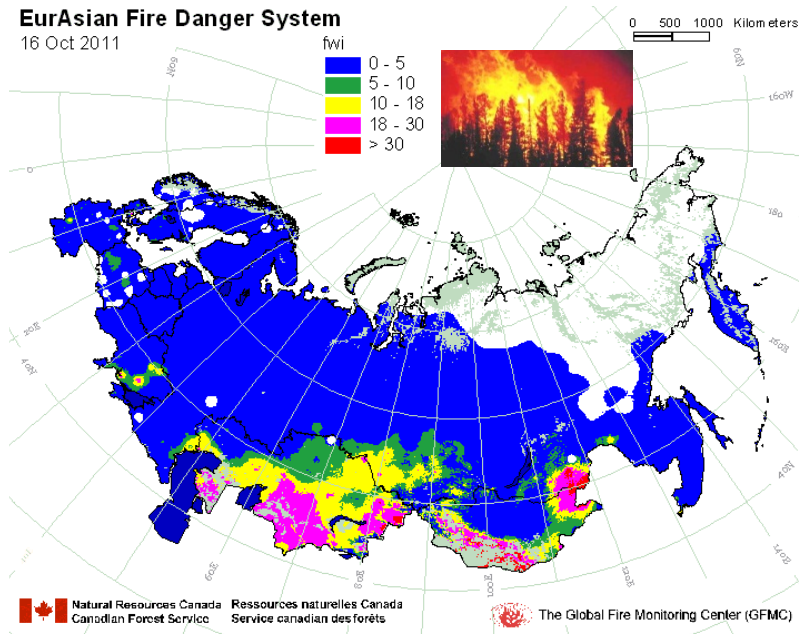
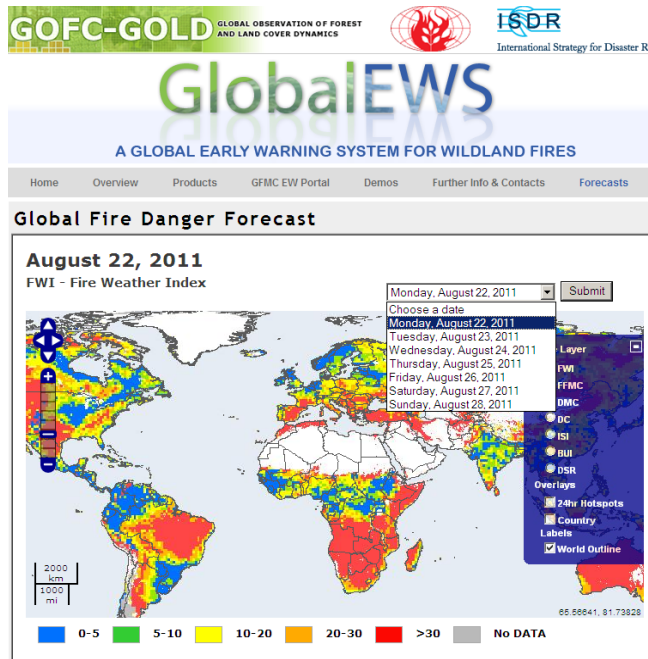
(Brazil, China, Egypt, France, Gabon, Italy, Spain, South Africa)



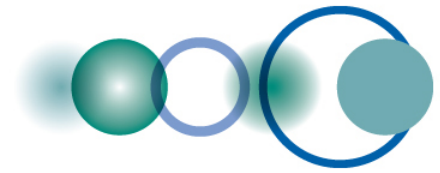
- * 70% of CBERS data available online
- * Ground stations upgraded to receive/process CBERS-2B
- * New ground station in Gabon
- * MoUs signed with Spain and South Africa for CBERS-3 reception (launch in Q1 2012)



Global Fire-Danger Systems (Canada, Germany, Russia, GTOS, ISDR)



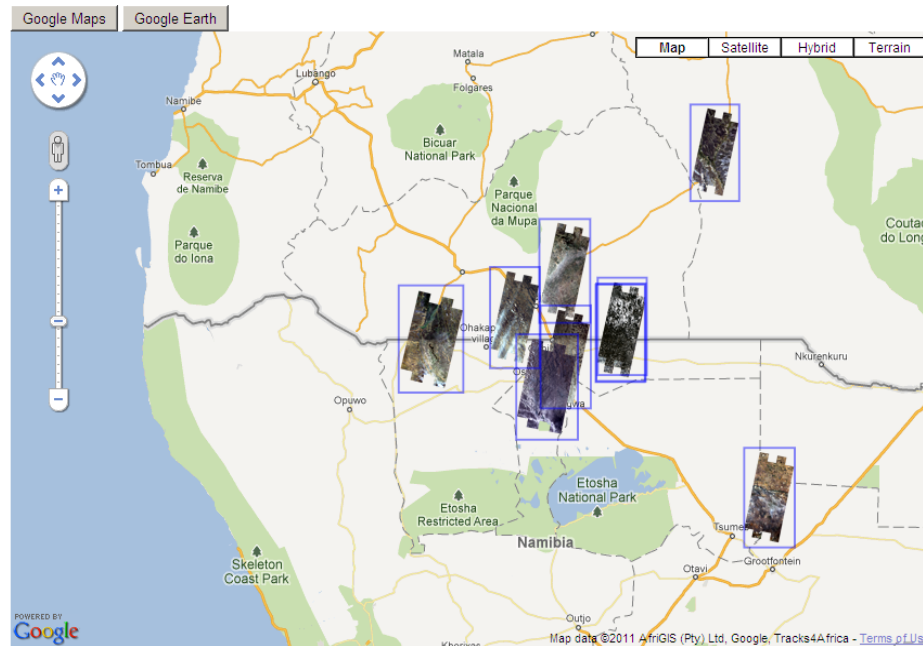
- * Prototype global early-warning system operational
- * Regional fire systems for Eurasia, Europe, southern Africa developing
- * 400 weather station data processed daily for fire-potential maps



New Flood Warning Systems (Canada, Germany, Namibia, Ukraine, USA, UNOOSA)

Namibia Flood Dashboard

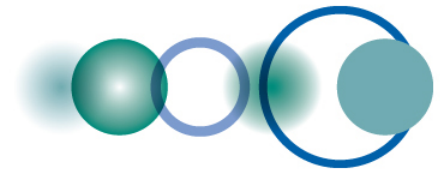
SensorWeb enabled for early flood warning



Legend:

ALI Flood Classification	Class 1 - Background:	Class 2 - Opaque Clouds:	Class 3 - Cloud Shadow:	Class 4 - Haze and Thin Clouds:	Class 5 - Clear Water:

- * Launched during Namibian floods of January-April 2011
- * Rapid dissemination of space-based & ground-sensor products
- * Flood warnings issued to local populations
- * To be extended to southern African regions



GEO Biodiversity Observation Network

(Australia, Denmark, Greece, India, New Zealand, Portugal, South Africa, USA, Diversitas, GBIF)



GISIN
Global Invasive Species Information Network

- * GEOBON key contributor to Convention on Biological Diversity (CBD)
- * Evaluation of existing capabilities for protecting biodiversity by 2020
- * Country maps of native and invasive species

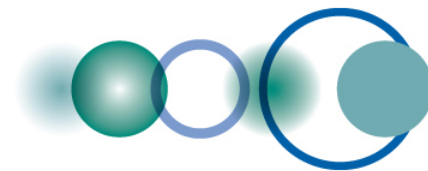
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By Country
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Register

Information for **'Sus scrofa'**
[To Country Info](#)

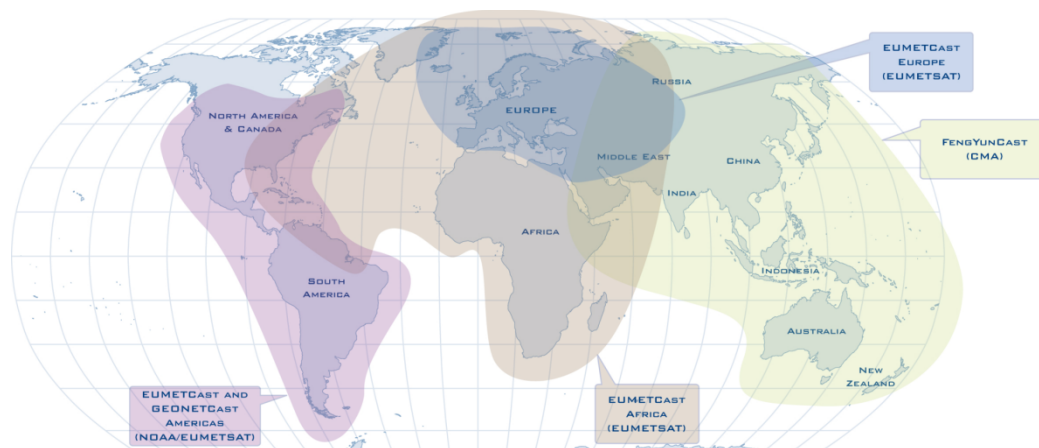
Countries Where *Sus scrofa* is Considered Invasive Based on Contributed Data

[Provide Data to GISIN](#)

Legend
Countries
Oceans
Invasive
Native



GEONETCast Expanded (China, EC, Netherlands, USA, EUMETSAT)



* New dissemination of disaster imagery (agreement with International Charter)

* Growing network of stations: Africa, Asia, Americas

* CMACast – Next generation update

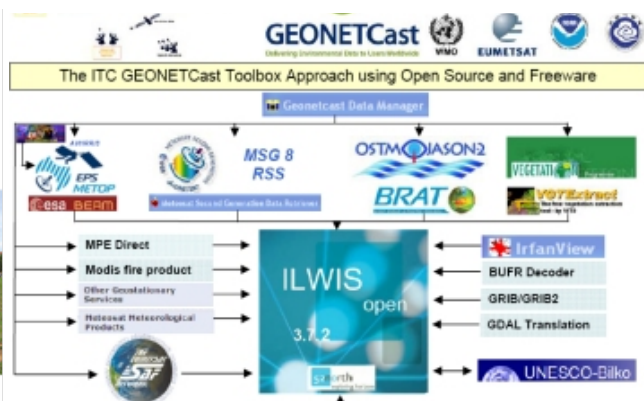
* Toolbox, training channels, e-courses

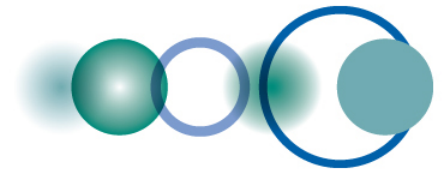
■ GEONETCast African Service received in Africa

Atlantic Bird 3 C-band dBW footprint

Satellite Dish installed at CGIS-NUR

Satellite Dish installed at RCMRD





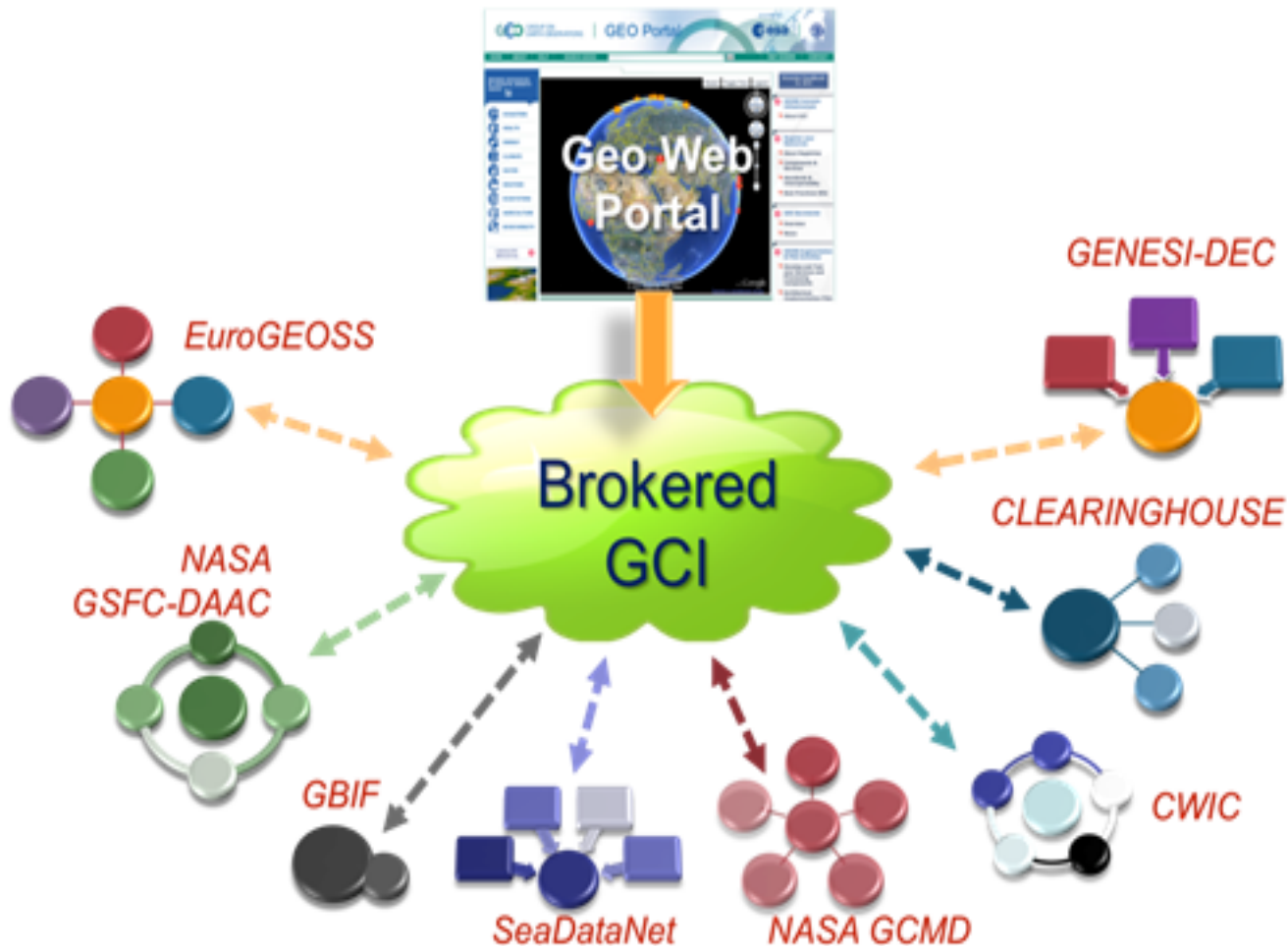
GEOS Implementation requires: *Data Sharing Principles*

- Full and Open Exchange of Data
- Data and Products at Minimum Time delay and Minimum Cost
- Free of Charge or Cost of Reproduction



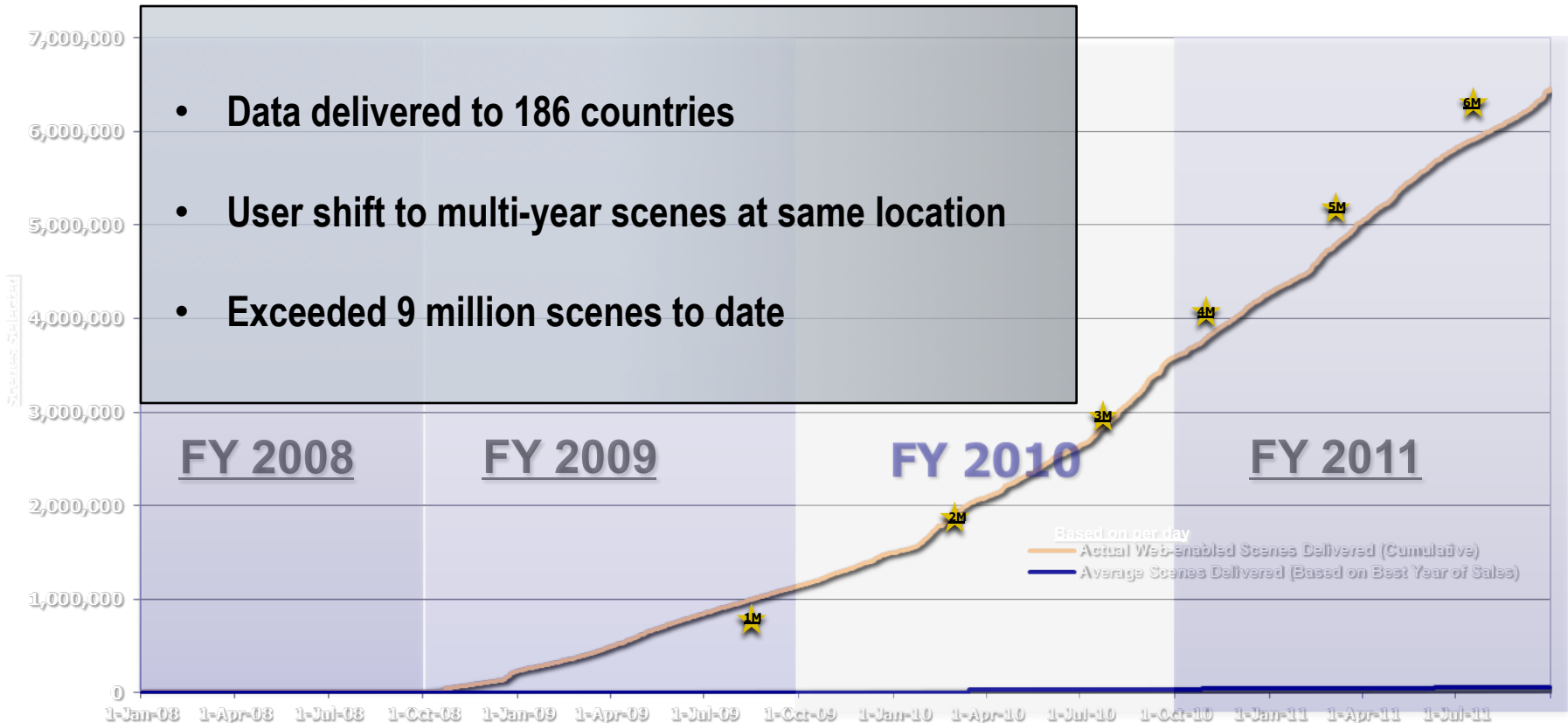


Broker Strategy & Interoperability Arrangements





Landsat Internet Data Distribution



Daily Average = 53 scenes for best year of sales (2001)

Daily Average \approx 5,700 scenes of web-enabled data delivered

[**http://www.earthobservations.org**](http://www.earthobservations.org)

[**bryan@geosec.org**](mailto:bryan@geosec.org)

