

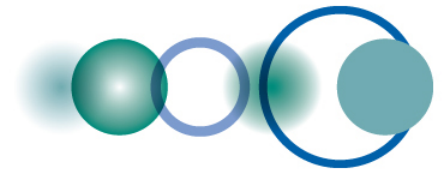
The Group on Earth Observations (GEO) and Transitioning into the Next Decade

Barbara Ryan
Director, GEO Secretariat

André Obregón
Technical Expert for Climate

WCRP JSC 36th Session
Geneva, 8-10 April 2015

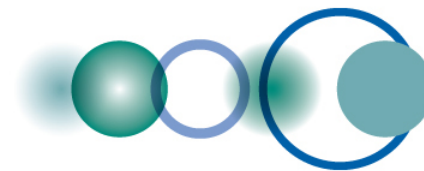




GEO Vision

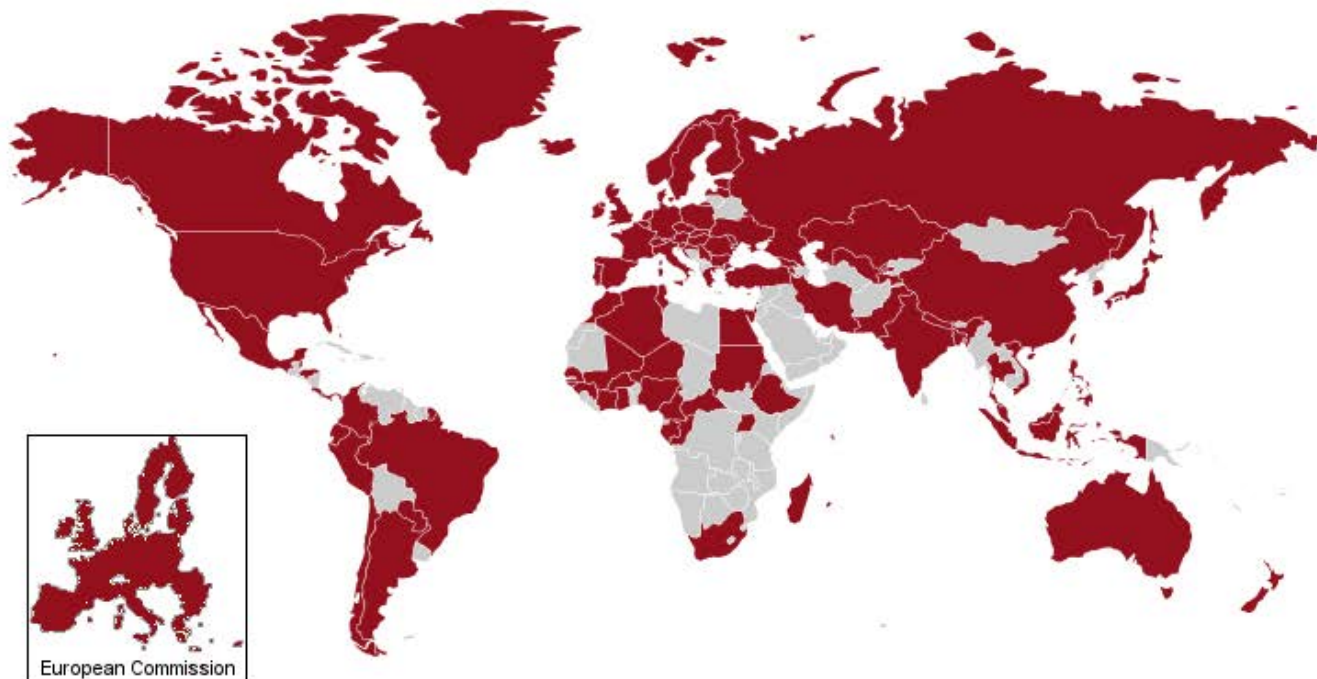
*To realize a future wherein decisions and actions,
for the benefit of humankind, are informed by
coordinated, comprehensive and sustained
Earth observations and information*





Members

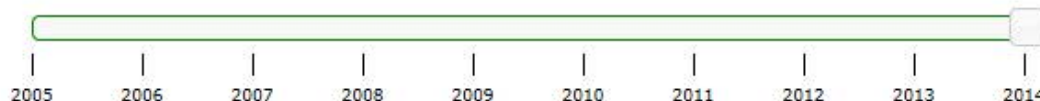
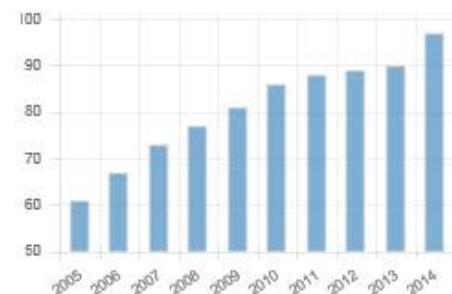
GEO Member Map for the year 2014



Number of Members (2014)

Total:	97
Africa:	24
Americas:	15
Asia/Oceania:	17
C.I.S.:	7
Europe:	34

Number of Members by year



GEO-X Plenary & Ministerial Summit Geneva 13-17 January 2014



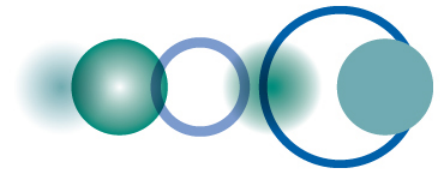
We, the Ministers and Participants assembled at the GEO Ministerial Summit in Geneva, Switzerland, on 17 January 2014:

...

1. Note that **GEO has proven its capability** to respond positively to calls for action from the international community of States and to address the challenges for which it was established;

...

4. **Renew the mandate of GEO through 2025** ... and agree to develop the work of GEO through 2025 in line with the recommendations put forward by the GEO-X Plenary as the foundation for shaping GEO through 2025.



Ministerial Guidance on the Evolution of GEOSS

Key areas of activity 2016-2025

1. **Advocate for the value of Earth observations** and the need to continue improving Earth observations worldwide
2. Urge the **adoption and implementation of data sharing principles** globally
3. Advance the development of the **GEOSS information system** for the benefit of users
4. Develop a comprehensive interdisciplinary knowledge base defining and **documenting observations** needed for all disciplines and facilitate availability and accessibility of these observations to user communities
5. Cultivate **global initiatives** tailored to meet specific user needs



Three Action Areas with Strategic Objectives

Strategic Objective 1:

GEO will **ADVOCATE** the value of Earth observations as a vital means of achieving national and international objectives for a resilient society, and sustainably growing economies and a healthy environment worldwide.

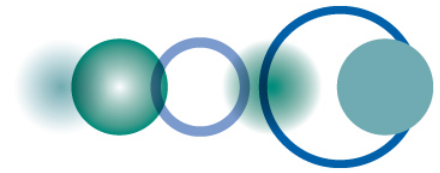
Strategic Objective 2:

GEO will **ENGAGE** with stakeholder communities to address global and regional challenges by deepening the understanding of Earth system processes and improving the links between scientific understanding and policy-making.

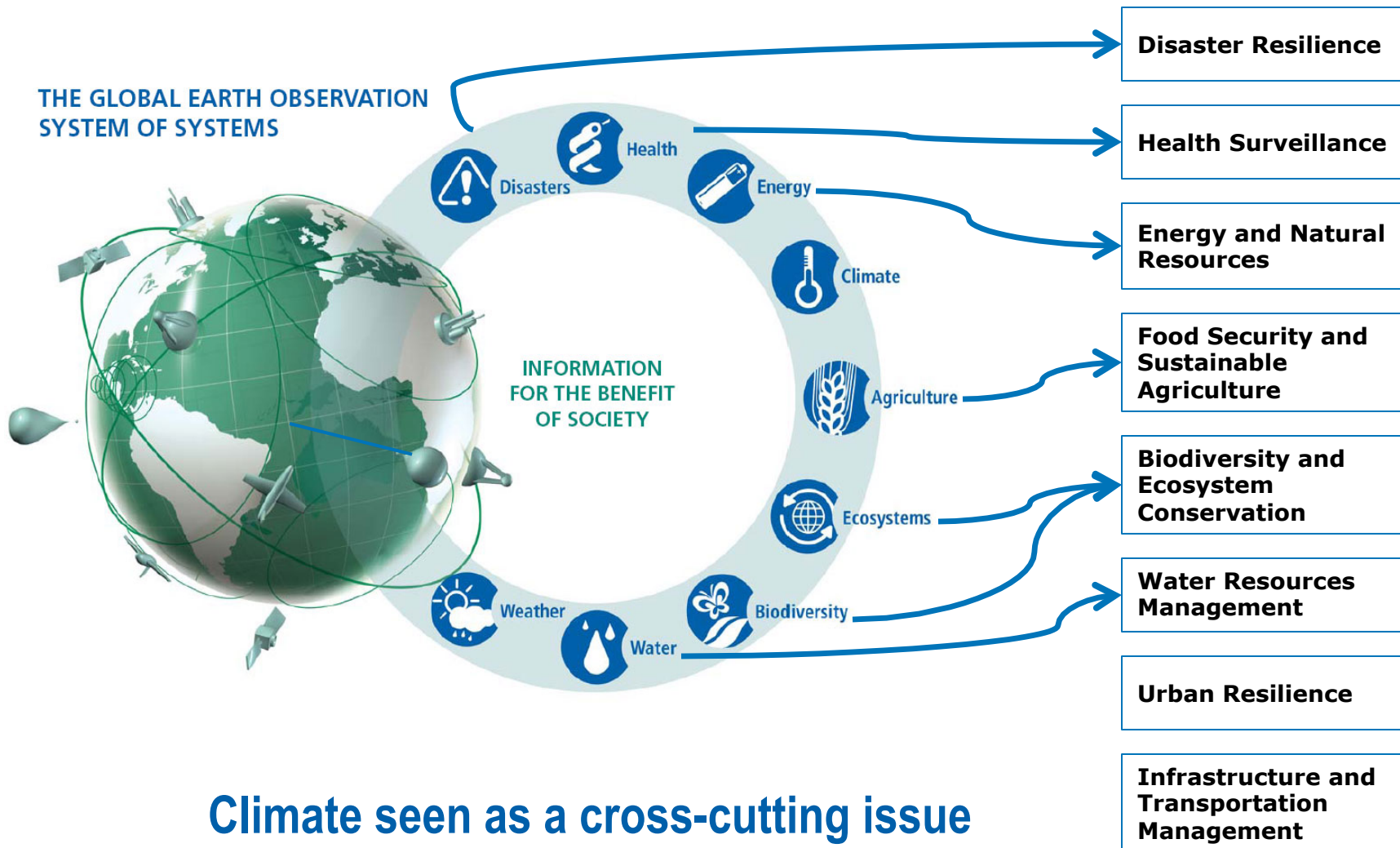
Strategic Objective 3:

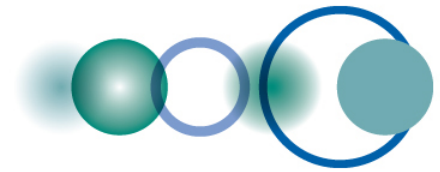
GEO will **DELIVER** data, information and knowledge enabling stakeholders to: improve their decision-making processes; promote the exchange of best practices; enable the uptake of new technologies; and create new economic opportunities, while reducing costs to public sector budgets through innovation and collaboration.





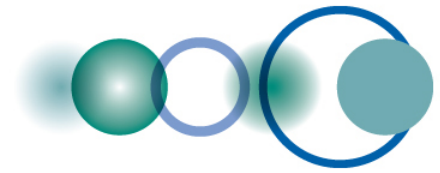
Revised set of SBAs (preliminary)





New Implementation Mechanisms



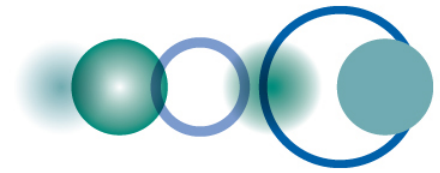


GEO Work Plan Symposium

5-7 May 2015, Geneva

Objectives:

- **Assess progress of current tasks and achievements for the first GEO decade (2005-2015)**
- **Involve new communities (reference to new proposed SBAs)**
- **Discuss how to better exploit recognized GEO linkages with the Post-2015 global development agenda, e.g., Sustainable Development Goals (SDGs)**
- **Discuss how GEO Community (including new stakeholders) should be organized to support the new GEO Strategic Plan (2016-2025)**
- **Discuss current gaps in GEO's activities and identify activities to be implemented in the next decade**
- **Discuss and consolidate a preliminary draft of a transitional Work Programme for 2016**



Progress Assessment



Climate

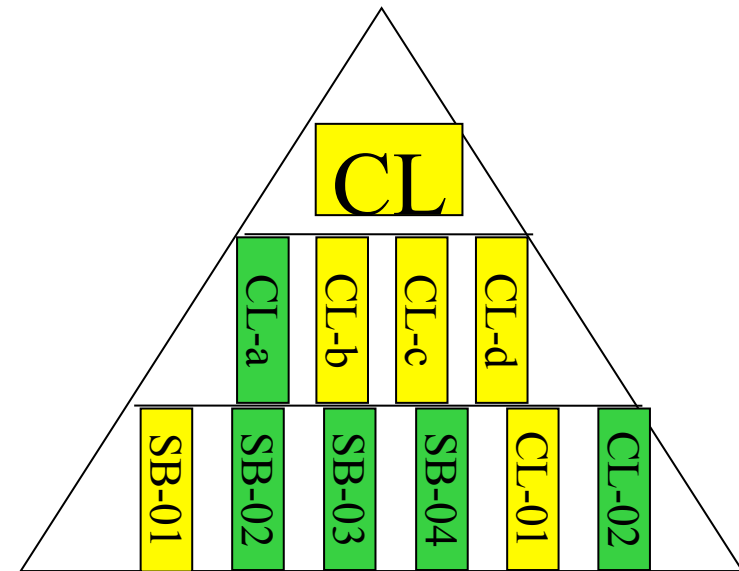
Issue:

- There is a need for improved access to existing model data in GEOSS.
- Many already exist (NOMADS, ESGF, WCRP, etc.) and could be advanced by Member nations.

Recommended Actions:

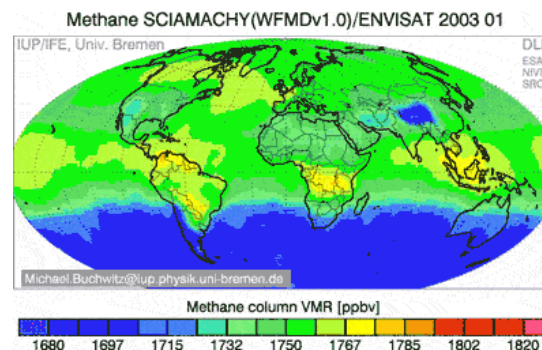
CL4. . For members who generate or archive numerical models (including AOGCM climate models), advance improved access to models and end-user applications, and in a form that can be used in adaptation decisions (e.g., ESGF, NOMADS); and advance the development of Earth System Models and associated reanalyses.

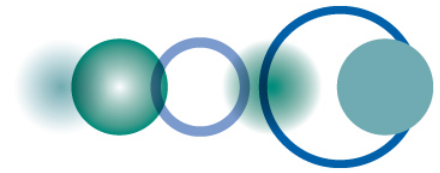
CL6. Support the development of Climate and Earth System Models and associated downscaling techniques (e.g. Coordinated Regional Climate Downscaling Experiment, CORDEX), and of seamless weather-climate predictions from sub-seasonal to decadal time-scales.



GEO Climate Targets

- Improved scientific understanding, modelling and prediction of climate
- Availability of ECVs needed by WCRP, IPCC, UNFCCC
- Accessibility of all the observational data needed for climate monitoring and services in support of adaptation to climate variability and change
- Global carbon observing and analysis system

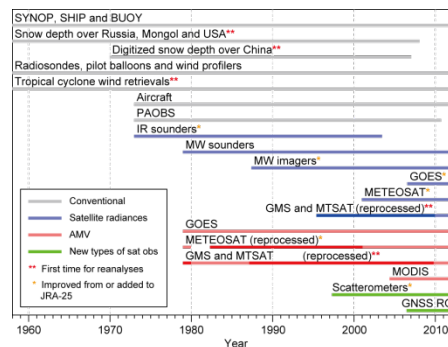
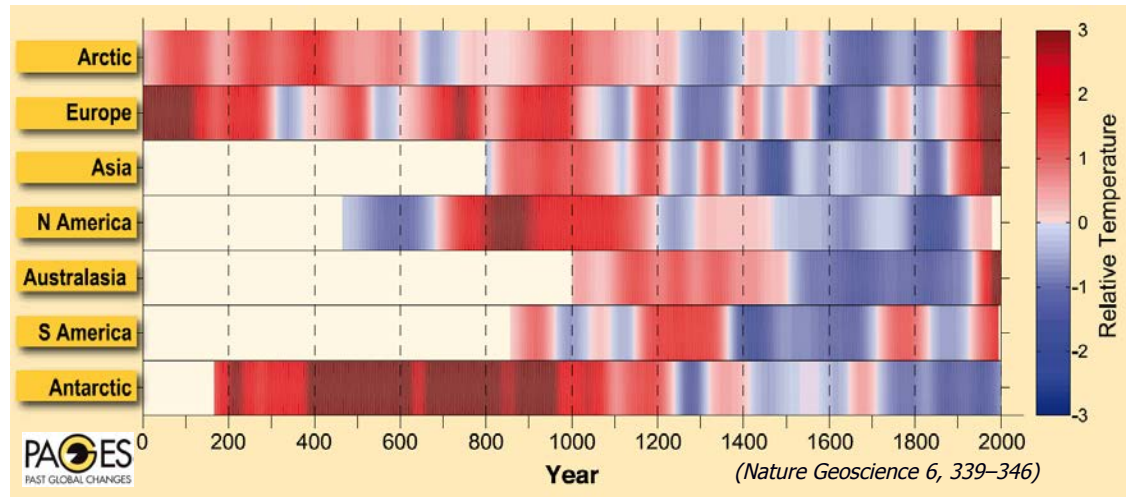




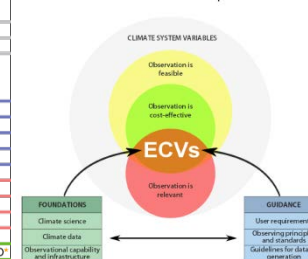
Climate Change Detection & Adaptation

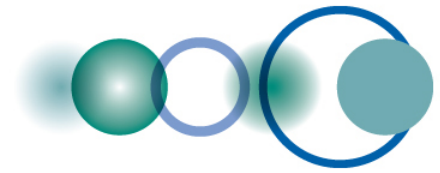
(EC, Japan, USA, ECMWF, ESA, GCOS, IGBP, WCRP, WMO)

- New Project for Coupling Atm-Ocean-Land Systems
- 50-yr Ocean Reanalysis
- 2000-yr Reconstruction
- Copernicus Climate Service
- ESA Climate Change Initiative (13 ECV projects)
- GCOS Co-op Mechanisms
- GFCS Adaptation Program
- IPCC, UNFCCC



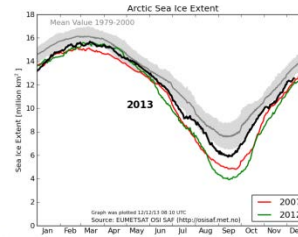
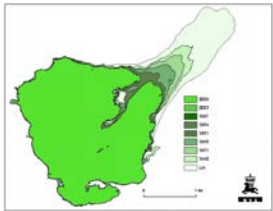
The ECV concept



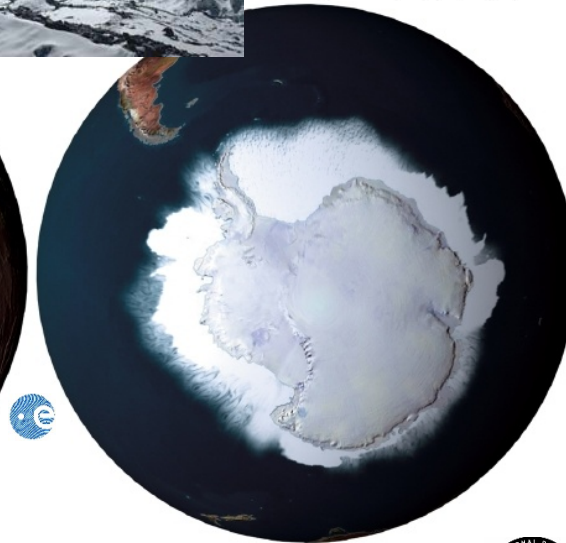
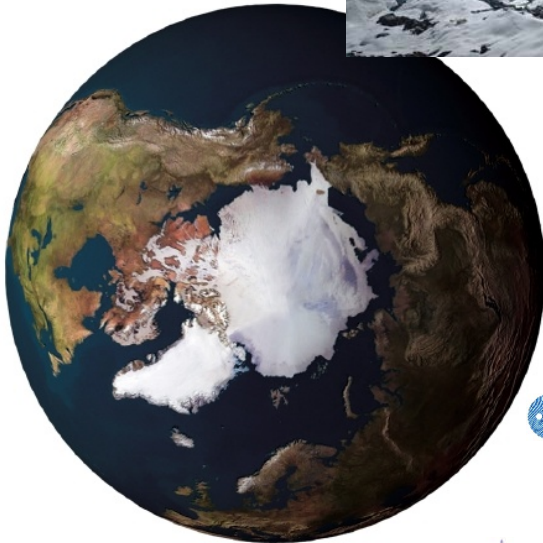


Cold Regions Information

(Canada, China, Denmark, Germany, India, Italy, Japan, Norway, Switzerland, USA, ICIMOD, WMO)



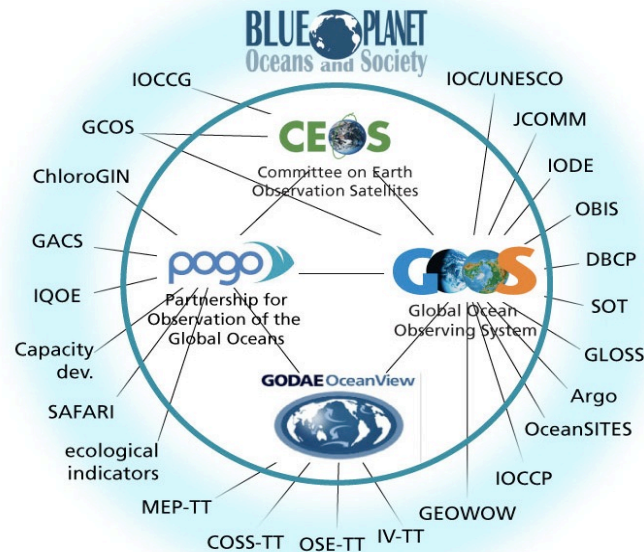
- Many Partners e.g. GCW, NSIDC, CrDAP, SAON, CryoClim, CCIN
- Arctic Monitoring
- Cryosphere Data Portal
- Third Pole Database
- Glacier Database
- Arctic Observing Summit
- Arctic Circle Assembly –Iceland President

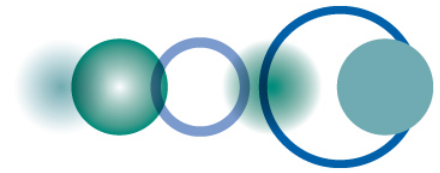


Bridging Ocean Communities

(Australia, Canada, EC, UK, USA, CEOS, GCOS, GOOS, IOC, POGO, UNESCO, WMO)

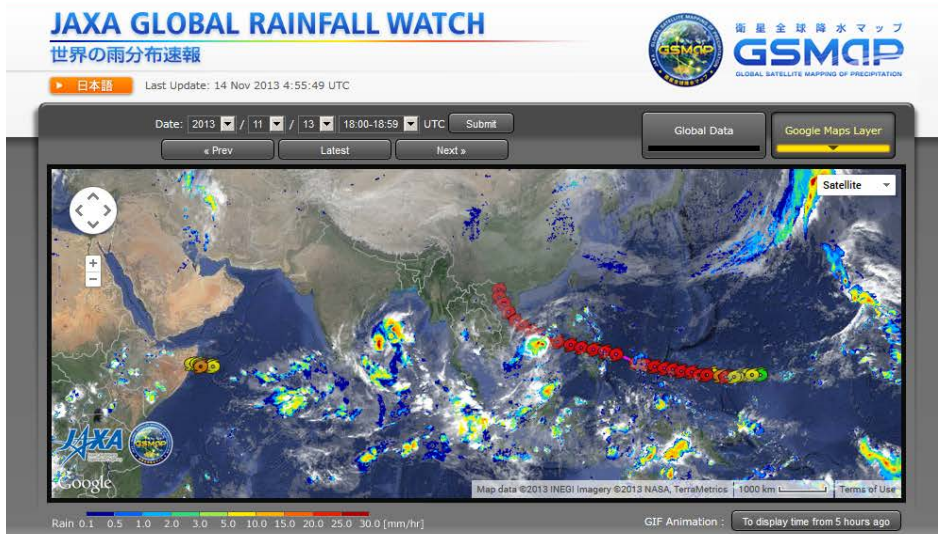
- Mobile App (AIP-7)
- Crowd sourcing on Species
- Regional Research Projects
- Scholars Trained
- New Website
- 2015 Blue Planet Symposium
- Trans-Atlantic EC-US Canada Initiative



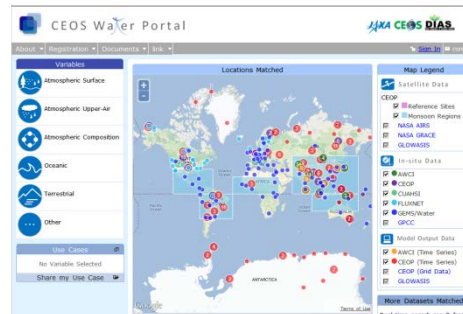
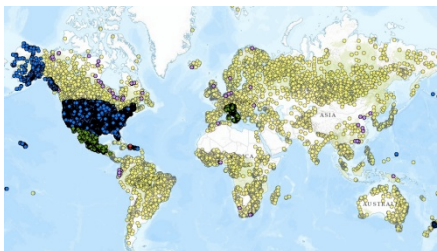


More Water Information

(EC, Germany, Japan, Switzerland, USA,
CEOS, ESA, WCRP, WMO)



Water Data Maps: Global Stream Gauges (AIP-6)



- GEOSS Strategy for Water
- Water/Health Partnership (WHO-HABITAT-UNEP)
- GEO Great Lakes Operational
- Water/Weather Flood Project
- Global Rainfall Watch
- CEOS Water Portal
- Water Data Maps (e.g. Gauges)
- Webinar Series (water quality)
- UN Sustainable Dev. Goals

GEO added value for Climate Community

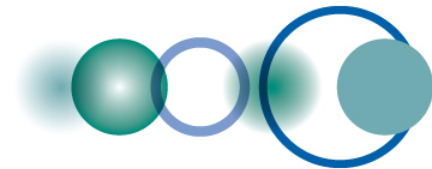
- **“Convening power of GEO”**
 - Communities representing the entire value chain convene at GEO Plenaries (data providers, value-added providers and users, governments, POs, and eventually the private sector)
 - Framework for collaboration with other institutions outside current networks and among other communities (e.g. SBAs)
- **International advocacy for broad open data sharing**
- **Fostering the development, implementation and operational use of “information value chains” underlying decisions**
- **GEO intended to reach policy, Ministerial levels**

GEO-XII Plenary and Ministerial Summit 2015

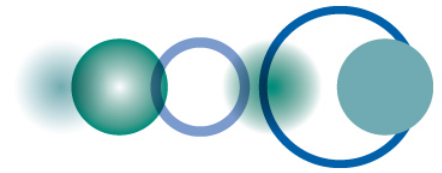


secretariat@geosec.org

www.earthobservations.org

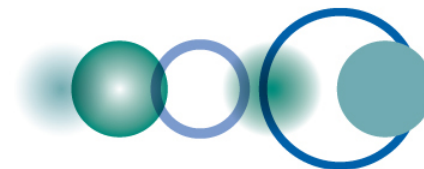


Backup Slides



GEO Objectives

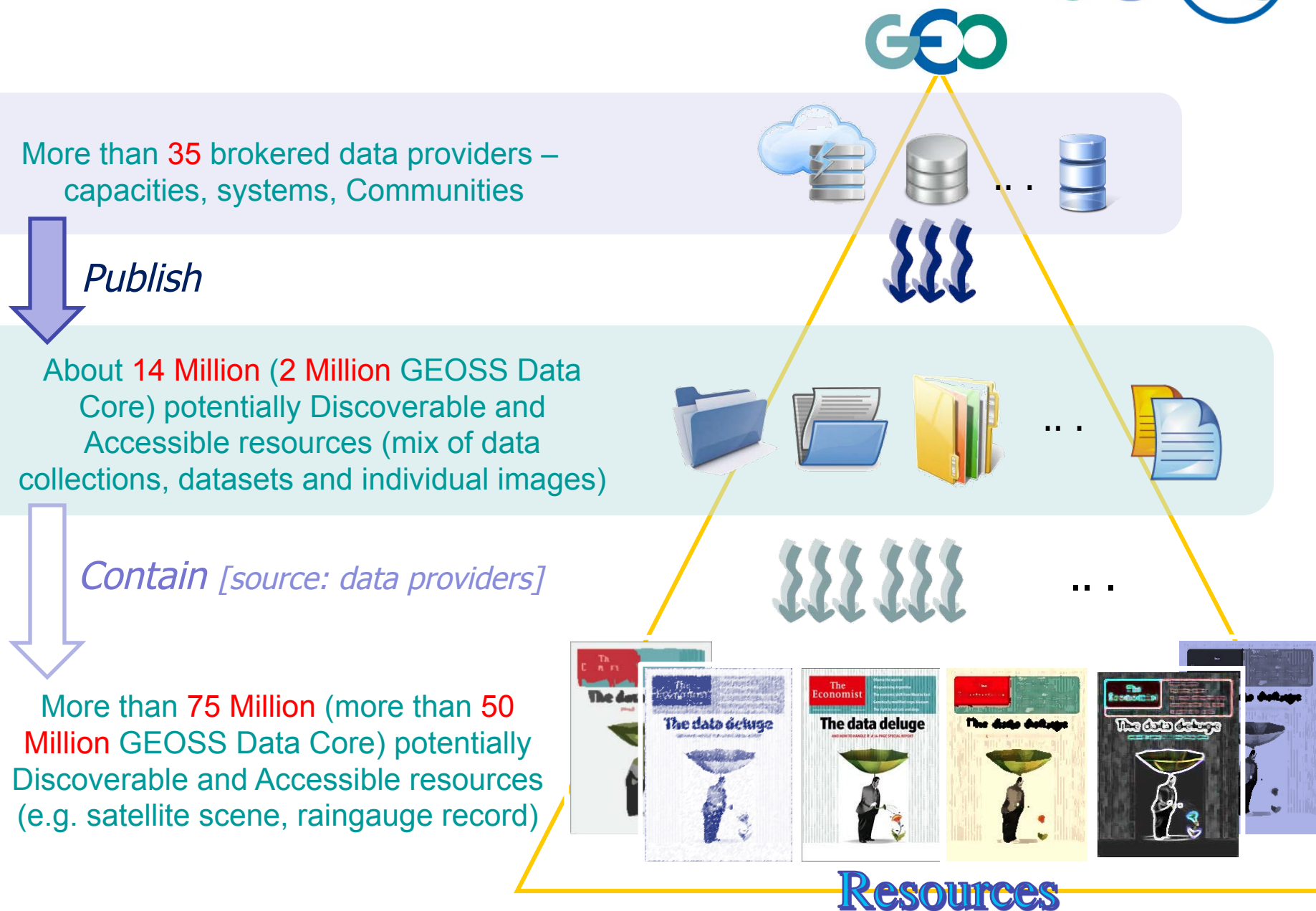
- **Improve and coordinate observation systems globally**
- **Foster increased use of Earth observation data and information**
- **Provide access to data and information**
- **Advance broad open data policies/practices**
- **Build capacity**



GEO Work Plan Symposium, 5-7 May 2015, Geneva

- Preliminary Agenda -

Day	5 May	6 May	7 May
AM 1 9.00-10.30	1. Introduction 2. Task progress assessment	4. The GEO Work Programme	9. New activities
AM 2 11.00-12.30	2. Task progress assessment	5. Work Programme 2016 - introduction 6. EO Advocacy	9. New activities 10. Work Programme 2016 - discussion and consolidation
PM 1 13.30-15.30	2. Task progress assessment	7. Engaging the Community	10. Work Programme 2016 - discussion and consolidation
PM 2 16.00-17.00	3. The new GEO Strategic Plan	8. GEOSS requirements, functions, architecture	11. Summit preparations 12. Conclusions



HOME

VIDEO TUTORIAL

SEND FEEDBACK

SEARCH

Related Topics

+ Themes

+ Country/Geography

+ Data Access Conditions

+ Earth Observation Catalogs

Start Date



End Date



CLEAR

SEARCH



WHAT IS GEOSS PORTAL

The GEOSS Portal is your main entry point to Earth Observation data from all over the world. [Search our data](#) or [Contribute](#) to our resources and data discovery tools. We also link world-wide community of practice in nine SOCIETAL BENEFIT AREA.

[Register Your Resources](#)

Make your Geospatial Data discoverable here.

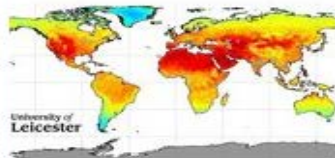
[Tell US what you think](#)

Your Feedback helps us improve the GEO Portal

POPULAR SEARCHES

Precipitation Land Surface Temperature Land Cover Urbanization Sea Surface Temperature River Flow Observation **Surface Atmospheric Condition Elevation Soil Moisture**

EO NEWS



Taking Earth's temperature

Like thermometers in the sky, satellite instruments can measure the temperatures of Earth's surfaces. ESA's new GlobTemperature project is merging these data from a variety of spaceborne sensors to provide scientists with a one-stop shop for land, lake and ice temperature data.



Task CL-01 Climate Information for Adaptation



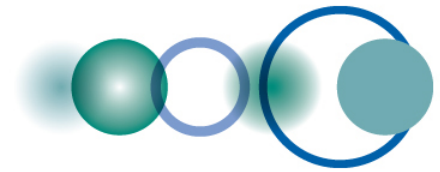
4 Components

Extension and Improvement of the
Climate Record

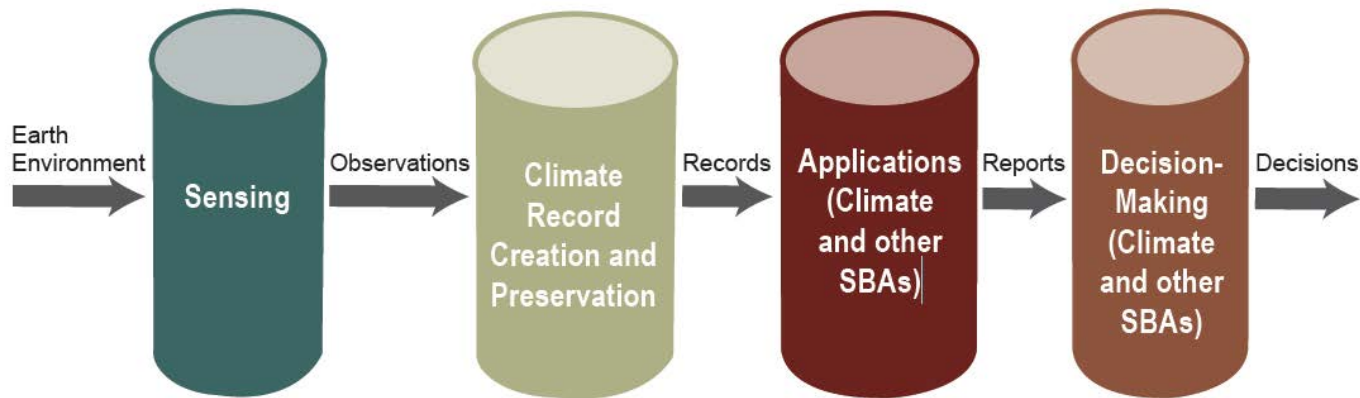
Accelerated Implementation of the Global
Climate Observing System

Weather, Climate and Earth-System
Prediction Systems

Easy Access to, and Use of, Climate
Information



Architecture for Climate Monitoring from Space



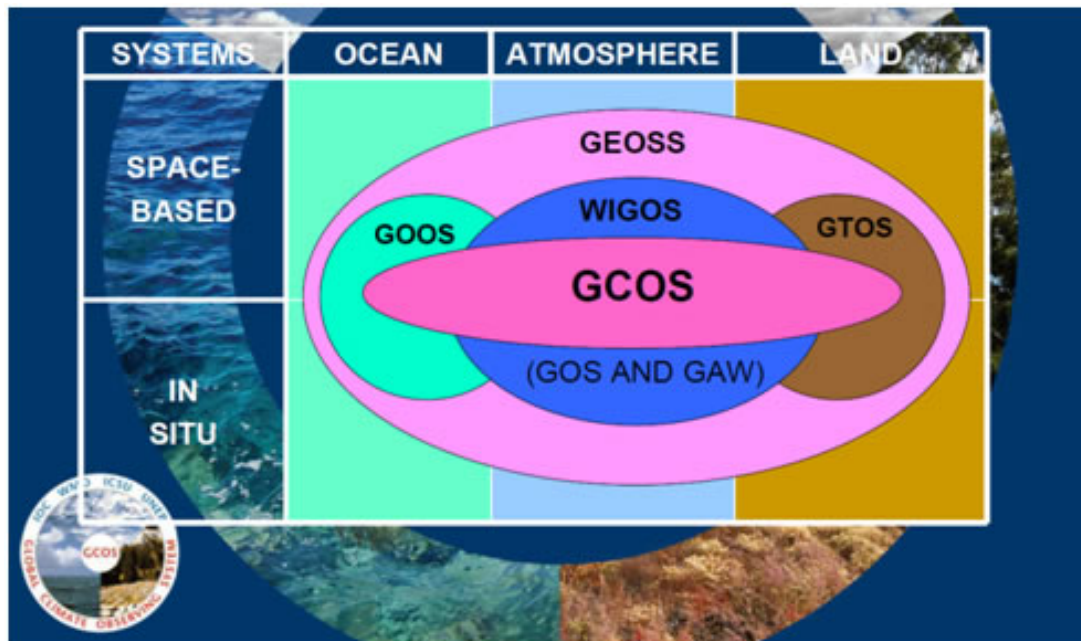
CL3. Advance architectures for climate monitoring using guidelines outlined in “A Strategy towards an **Architecture for Climate Monitoring from Space**”

CL7. [...] Owners of Essential Climate Variable (ECV) climate data records should **help populating the joint CGMS/CEOS/WMO ECV inventory** in order to improve access to these records and facilitate the establishment of a physical architecture for climate monitoring from Space;

- Information value chain: Turning observations into actionable information and decisions

GCOS and GEO

“GCOS serves as the climate observing component of GEOSS”

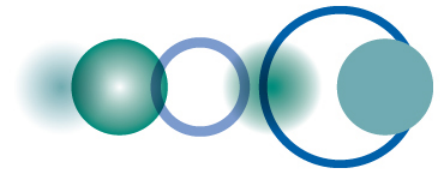


CL2. Participate and contribute to the GCOS Improvement and Assessment cycle

- GEO can reinforce GCOS goals, objectives and leadership to a broader community

[Source: WMO/GCOS]

... **Recommendation 7** - GCOS and its sponsors should build formal communication with GEO about the complementarities in their work. GCOS and its sponsors should develop more effective cooperation between GEO and GCOS with the goal of building a robust and sustained observing system.



GFCS and GEO

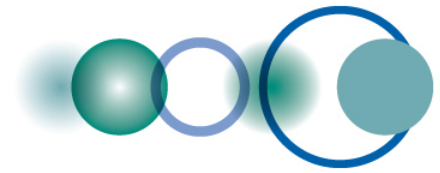
CL11. Improve coordination between GEO and GFCS;
Build linkages at national level between activities
implemented under both frameworks



GFCS Implementation Plan:

[...] GEOSS provides a **framework for preparing services** such as those that the Global Framework for Climate Services is targeting. As the **four identified priority areas** of the Framework are already **Societal Benefits Areas** for GEOSS (i.e. agriculture and food security, water, health and disaster risk reduction), there is an **opportunity for the Framework to collaborate with these ongoing efforts.**

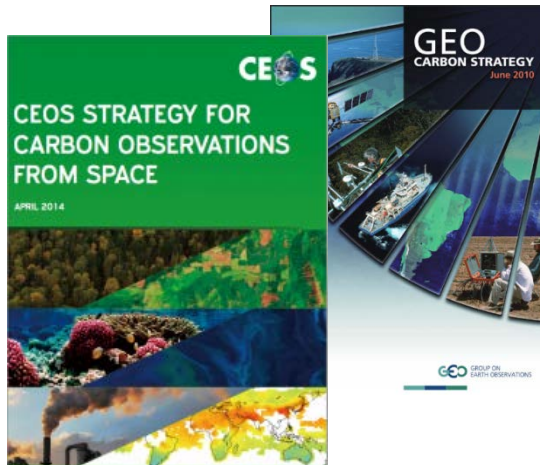
- GEO contributed to the Exemplars of the GFCS
- GEO is an observer of the Partner Advisory Committee (PAC)
- GEO and GFCS are currently drafting a White Paper to explore possible areas of collaboration



GEO Carbon

CL8. Support the development and maintenance of carbon monitoring networks and systems [...]

CL9. The European Commission, as well as other GEO Members, is encouraged to continue supporting the GEO Carbon Office and its activities.



- GEO Carbon Community of Practice
- GEO Carbon Strategy (2010)
- CEOS Strategy for Carbon Observations (2014)

Need for an operational global carbon observing system

- Plans for a Global Greenhouse Gas Information System (IGIS), WMO
- GEOCARBON project
- Possible future GEO Carbon Initiative/Flagship