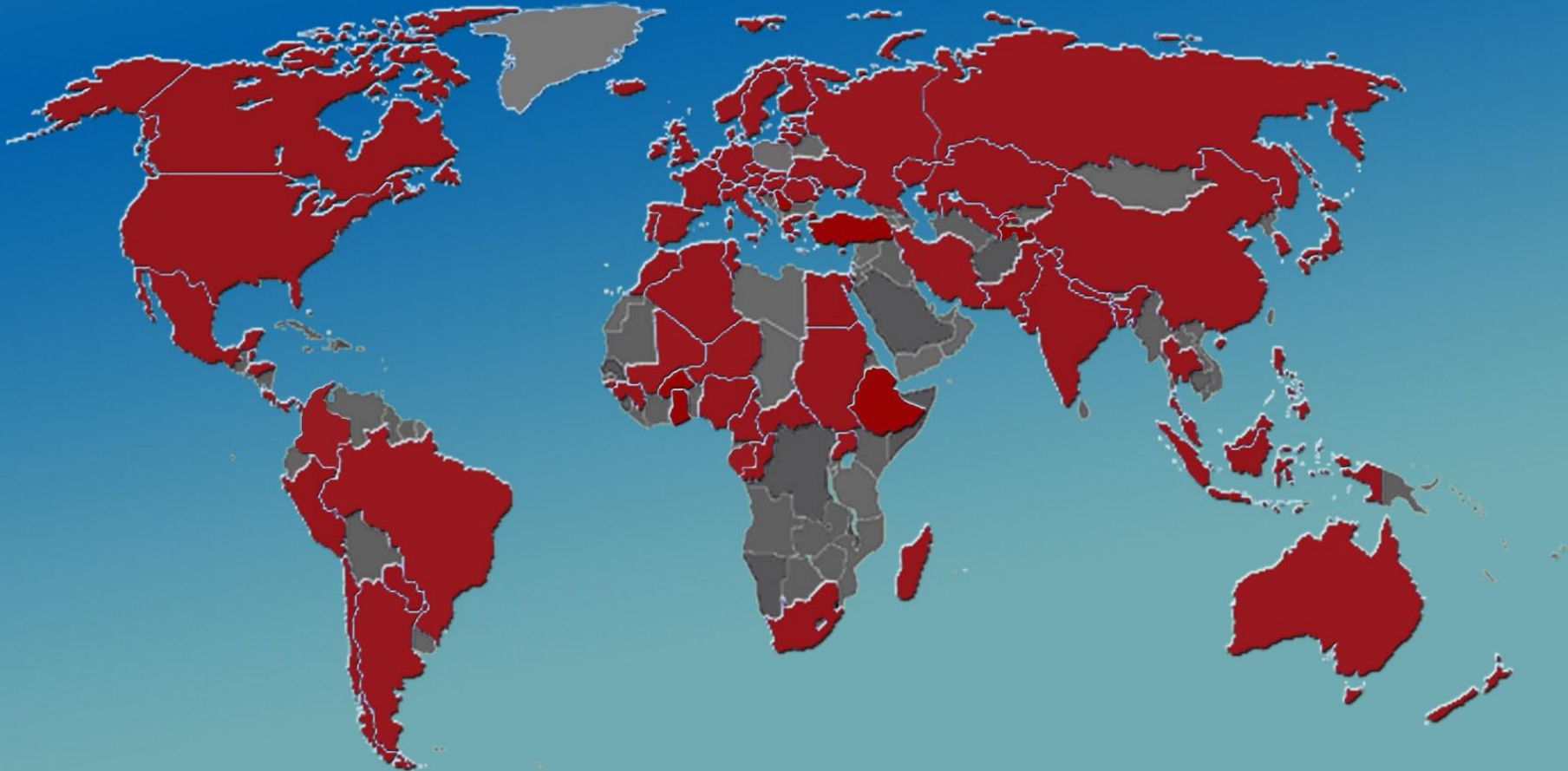
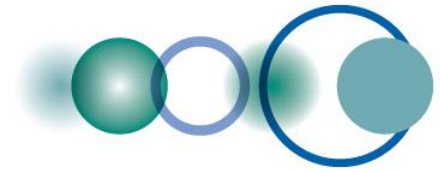


Director General



An Intergovernmental Organization with 89 Members and 61 Participating Organizations

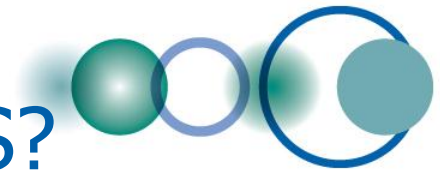




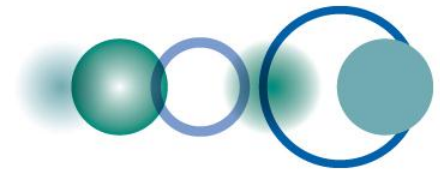
What is GEO?

- launched in **response to calls for action** by the 2002 World Summit on Sustainable Development, Earth Observation Summits, and by the G8 (Group of Eight) leading industrialized countries
- **voluntary partnership** of governments and international organizations
 - 89member governments + EC
 - 61 Participating Organizations (incl. IAG, IUGS)
- provides a **framework** within which these partners can develop new projects and coordinate their strategies and investments
- charged with **developing GEOSS**

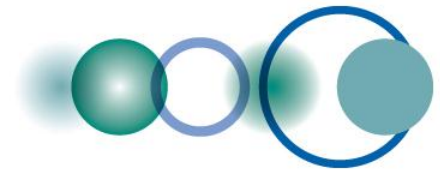
What is GEOSS?



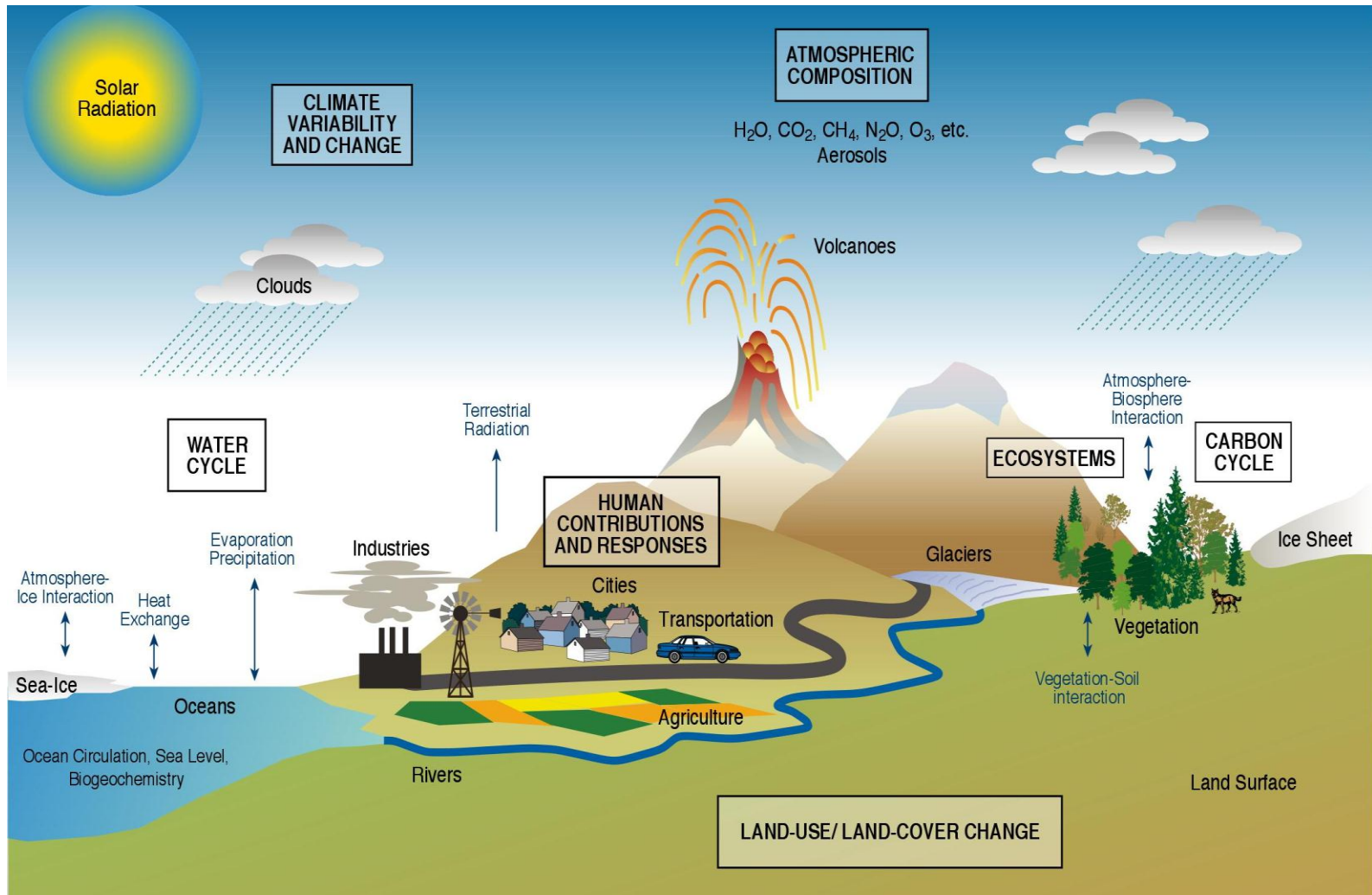
- the **Global Earth Observation System of Systems**
- an **integrating public infrastructure**,
interconnecting a diverse, growing array of Earth
observing instruments and information systems for
monitoring and forecasting changes in the global
environment
- supports policymakers, resource managers,
science researchers and other experts to **support
informed decision making for society**
- **10-year implementation plan**
- **2015: Global, Coordinated, Comprehensive and
Sustained System of Observing Systems**

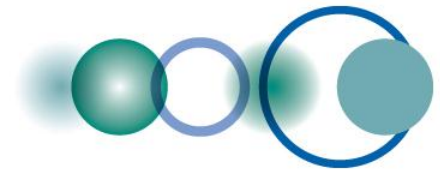


Why GEOSS

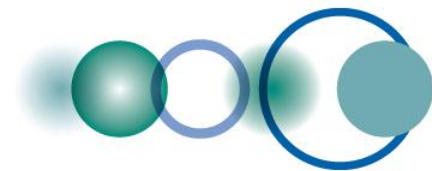


The Earth is a complex system of systems





Space Observation Systems



The Tower of Babel syndrome...

Need for:

- **Earth observation Coordination**
- **Interoperable Architecture and Formats**
- **Data Sharing**

... to benefit fully from Earth Observation Systems

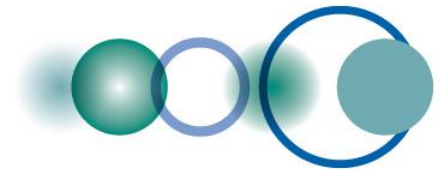




GEOSS Implementation requires: *Data Sharing Principles*

- **Full and Open Exchange of Data...**
 - Recognizing Relevant International Instruments and National Policies and Legislation
- **Data and Products at Minimum Time delay and Minimum Cost**
- **Free of Charge or Cost of Reproduction for Research and Education**

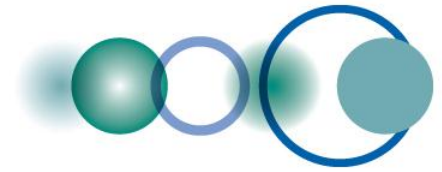




GEOSS Implementation Requires: Interoperability of Systems

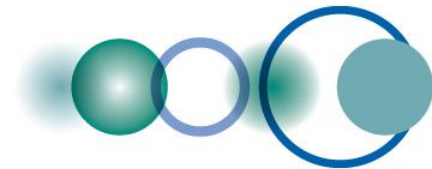
**Need for an Interoperable Architecture and Standard
Formats to benefit fully from Earth Observation Systems**

- **Technical Specifications for Collecting, Processing, Storing, and Disseminating Data and Products**
- **Based on Non-proprietary Standards**
- **Defining System Compliance for Contribution to GEOSS**



The Vision for GEOSS...

...a world where decisions and actions are informed by coordinated, comprehensive and sustained Earth observations.



Achievements



O B S E R V I N G S Y S T E M S

**Contribution
of GEO
members**



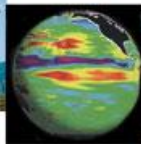
Disasters



Health



Energy



Climate



Water



Weather



Ecosystems



Agriculture

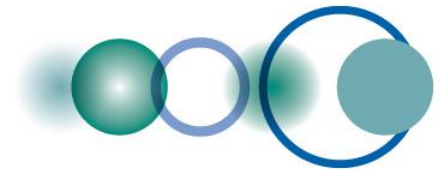


Biodiversity

N I N E S O C I E T A L B E N E F I T A R E A S

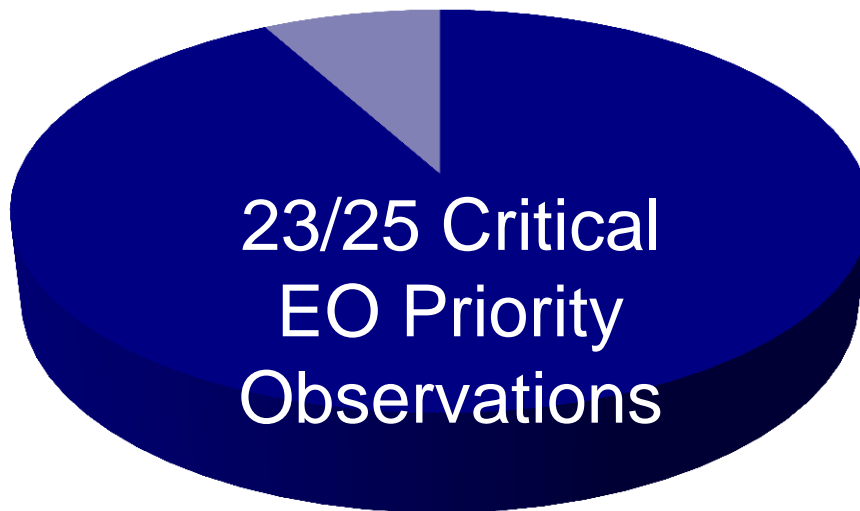
Users

riat



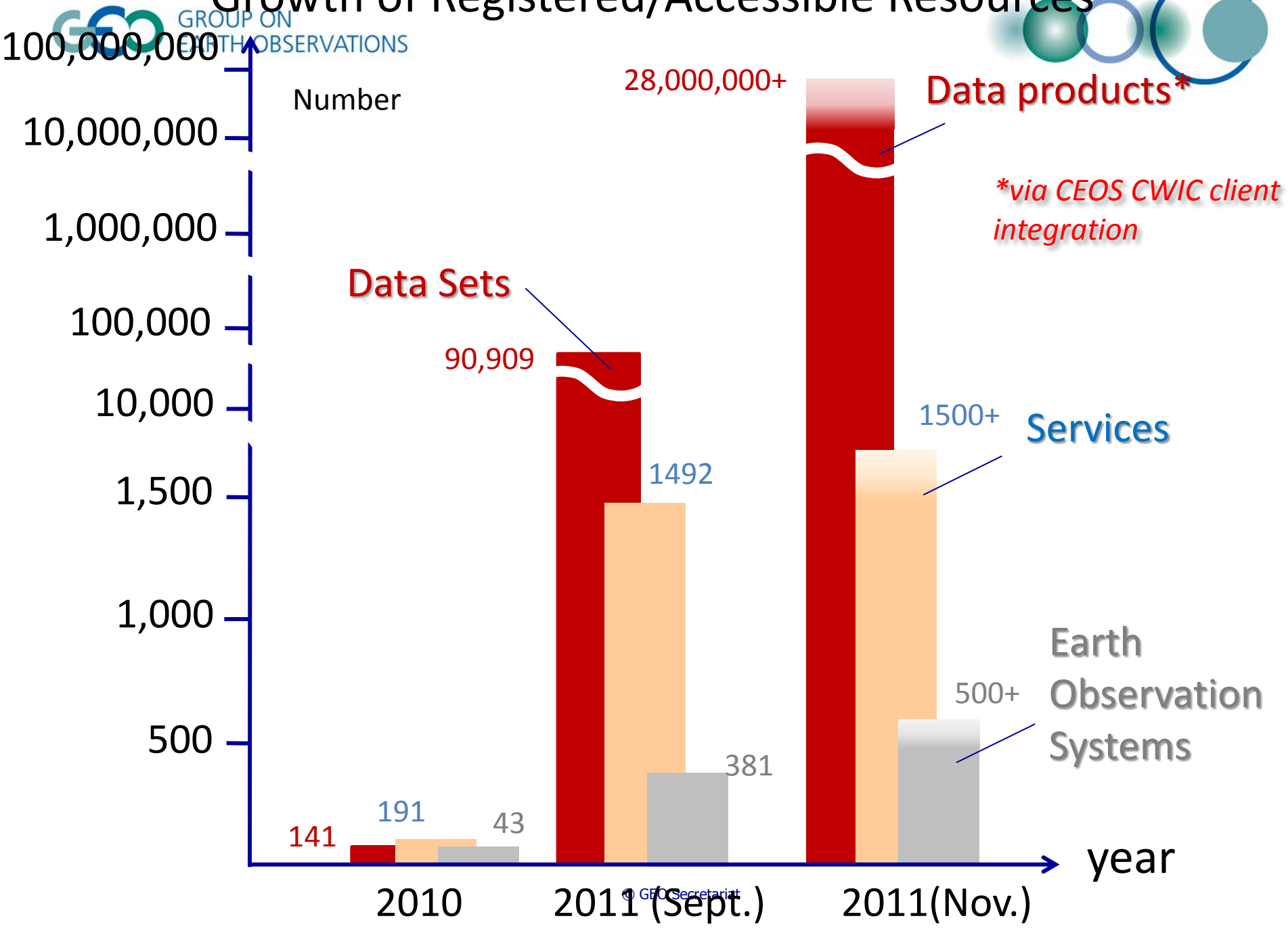
Identify and register critical EO assets

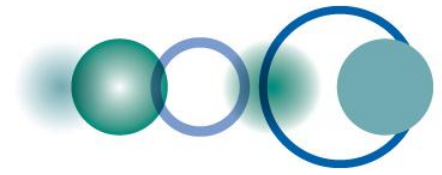
GEOSS-registered data represent:



From [UIC Report to the GEO-VI Plenary – Critical Earth Observations](#)

Growth of Registered/Accessible Resources





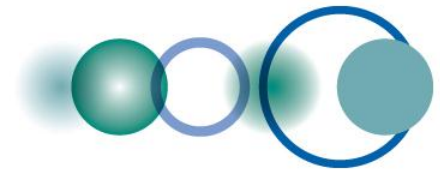
GEO BON

GEO Biodiversity Observation Network

A coordinated, global network that gathers and shares information on biodiversity, provides tools for data integration and analysis, and contributes to improving environmental management and human well-being.

Although the number of existing biodiversity observations is very large, these observations are very uneven in spatial, temporal, and topical coverage. They range from genetic to species to ecosystem level with observations being made in the laboratory, in the field, and from satellite imagery.





GEO BON

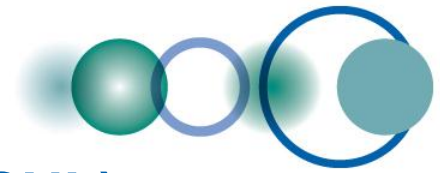
GEO Biodiversity Observation Network

Recent Accomplishments:

GEO BON submitted an "Assessment of the Adequacy of Existing Observation Capabilities for the CBD 2020 Targets" to the CBD's Ad Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020.

GEO BON is preparing a list of Essential Biodiversity Variables (EBV's) required for meeting the 2020 Targets. CEOS may be asked to work with GEO BON on these as the process develops.





Supersites and National Laboratories (SNL) Strategic Goal & definition

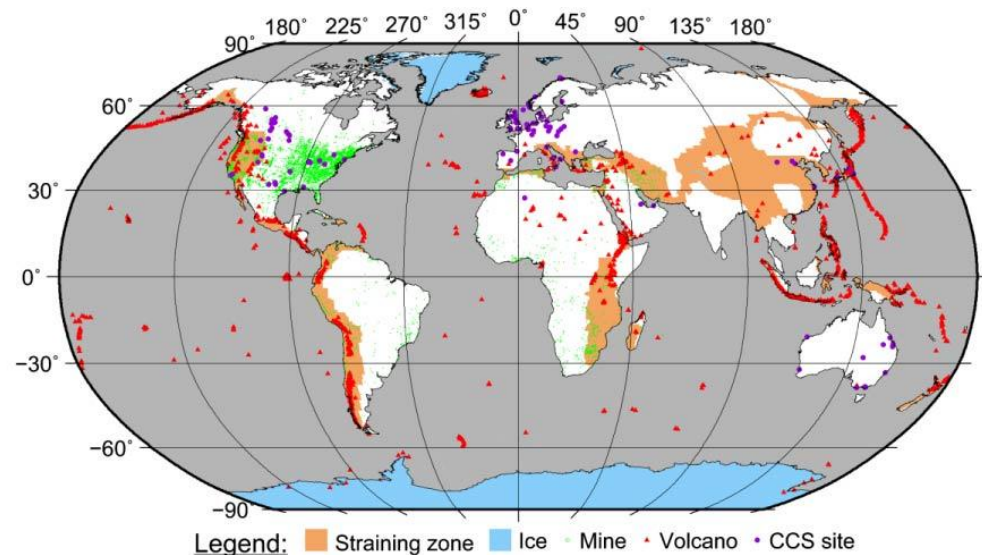
Pooling Satellite imagery and terrestrial in-situ data for earthquake and volcano studies.

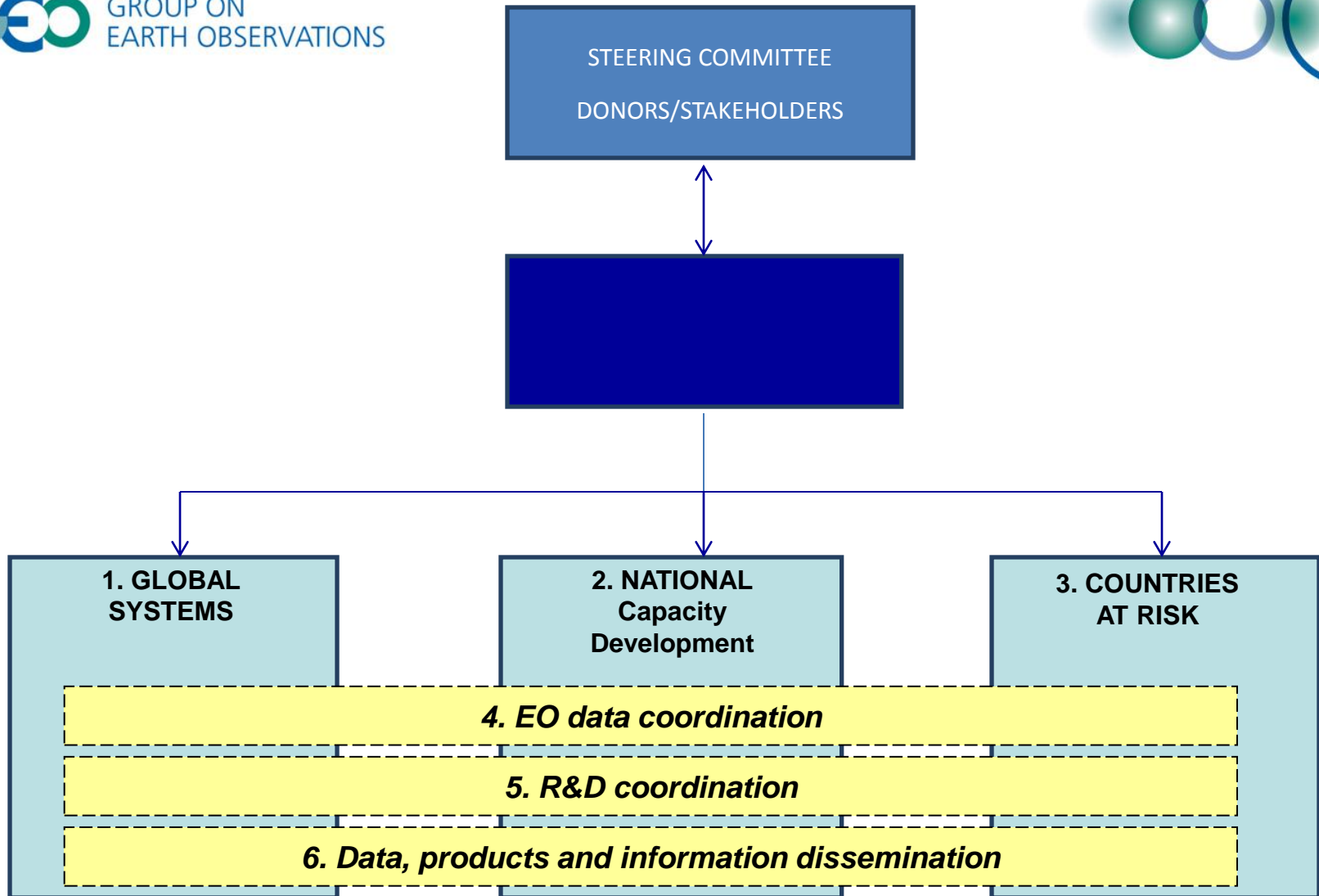
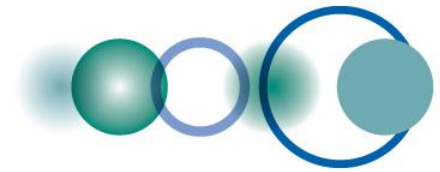
There are 3 different level of sites:

- **Supersite** → all data
- **Event Supersite** → all data in case of large scale event
- **Natural Laboratories** → Global Network of Natural Laboratories.

Providing online access to historic multi-sensor SAR data sets (digital heritage of Earth Observation for geohazards).

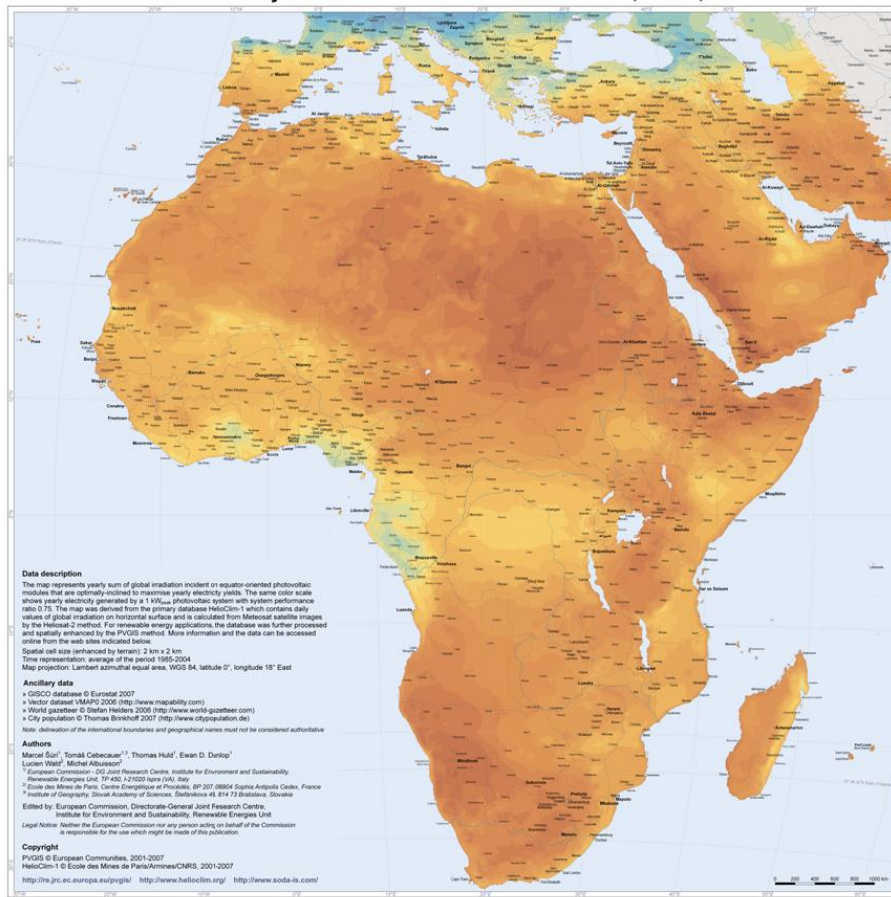
1 Million ERS/Envisat
frames, under investigation.





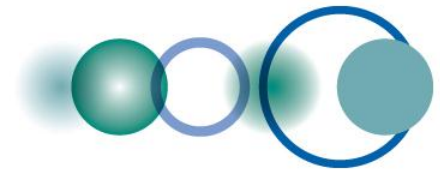
GEOSS for AFRICA

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

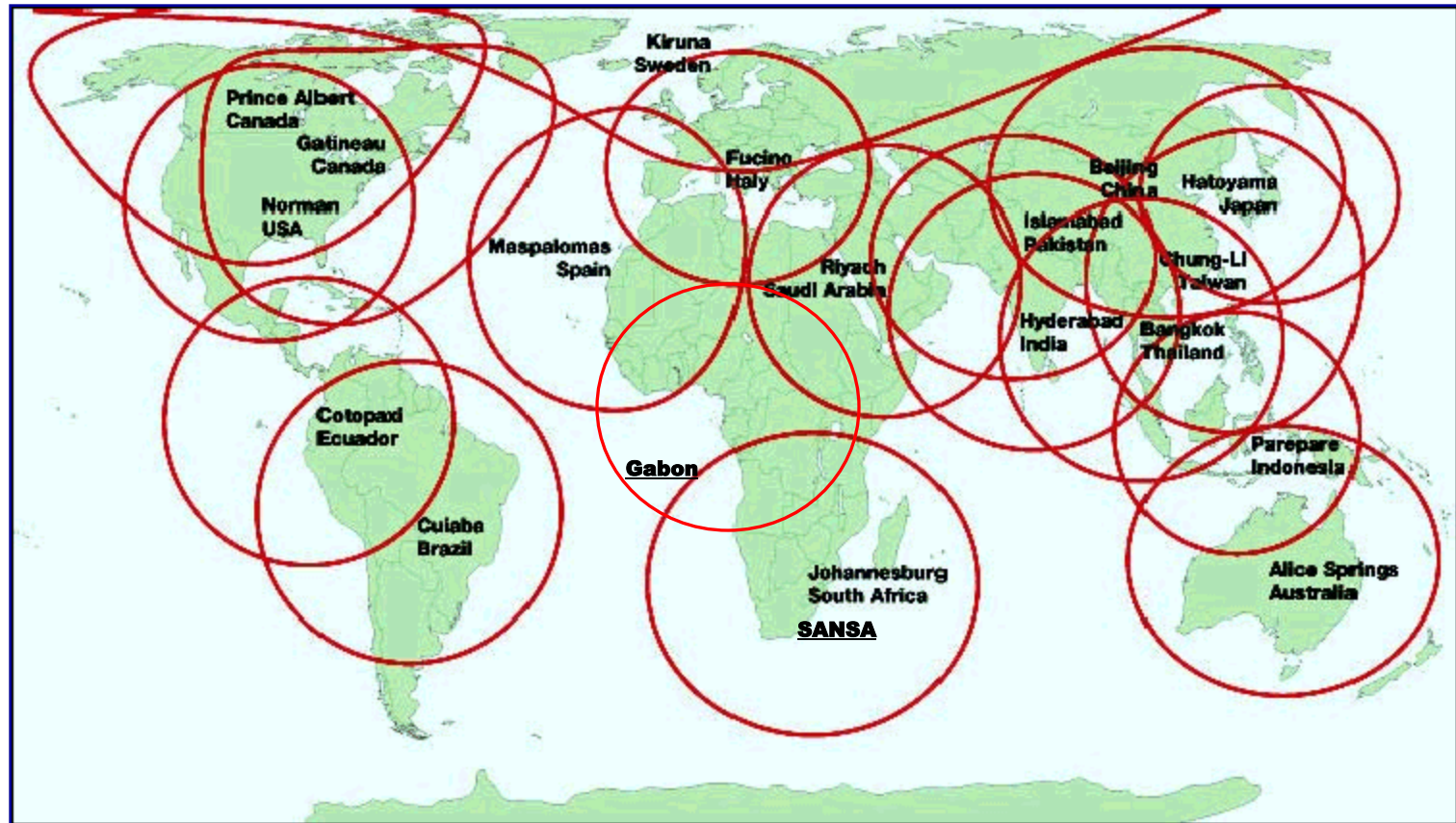


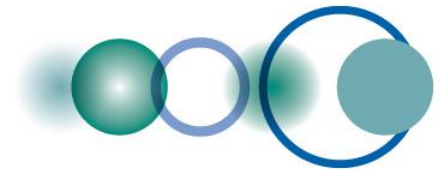
Yearly sum of global irradiation incident on optimally-inclined equator-oriented photovoltaic modules
Yearly sum of solar electricity generated by 1 kW_{peak} system with optimally-inclined equator-oriented photovoltaic modules and system performance ratio 0.75

GEONETCast, CBERS,
SERVIR, Sand and Dust
Storm Warning System,
AEGOS, Wildland Fire
Early Warning System,
Puma, AMESD and
GMES Africa, BIOTA,
TIGER, SoDa, MERIT,
African Protected Areas,
ClimDev Africa,
ChlorOGIN, GeoAFRICA



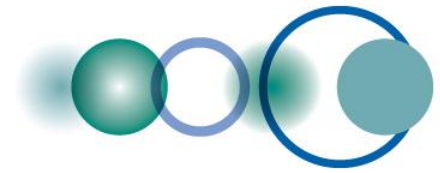
CBERS Africa and satellite receiving stations





Priority Actions

- **Engage with regional agencies and training centres**
- **Coordinate satellite infrastructure pilot projects**
 - Coordinate data acquisition strategy for Africa.
 - African Resources and Environmental Management Constellation (ARMC)
 - AfricaGeoSat-1 Project
 - African Monitoring of the Environment for Sustainable Development (AMESD) and Monitoring of Environment and Security in Africa (MESA)
- **Coordinate application pilot projects**
 - Bio-Energy Atlas for Africa.
 - GEO Forest Carbon Tracking (FCT) and Global Forest Observations Initiatives (GFOI)
 - The Meningitis Risk and Information Technology project (MERIT)
 - GEO-GLAM
- **Promote data democracy and data sharing**



Conclusion

- **GEOSS –Truly international observation system of systems**
- **Requires contribution of earth observation system from all over the world**
- **And willingness by both members and participating organisations to provide national observation systems**
- **Challenging and unique governance model (Group on earth Observation: GEO)**
- **Emerging examples of coordinated systems (GEO BON; GEO-GLAM; etc.)**

Thank you!

