



# **GEOGLOWS**

## **Global Water Sustainability**

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

# Introduction

## The challenges

### Climatic and environmental stakes

#### What climate shall we have tomorrow?

- Increases in global sea and air temperatures
- Widespread melting of snow and ice
- Rising global sea level



*"We do not inherit the land from our ancestors, we borrow it from our children"*  
(Native American proverb)

#### How to improve our models?

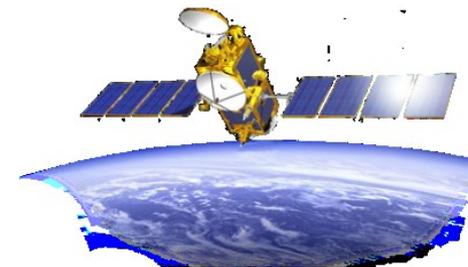
What are the observation and accuracy needs for global water and energy cycle research, and for global climate change research? **continental to global scales to augment climate networks.**

#### How to predict at a finer scale?

What are the accuracy needs for water management, flood prediction, reservoir operation, agriculture and drought assessment? **regional problems and real-time data needs to augment operational networks.**

#### ➤ To spatialize and to refine scale of perception

Observations at high spatial and temporal scales (precipitations, evapotranspiration, water vapor...)



# Introduction

## The new challenges

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### water: a major stake in the 21th century

→ Understanding the processes which govern the production of the water and its distribution in the various compartments of the Earth surface

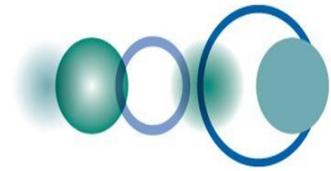
### What type data for tomorrow and which distribution scheme ?

World programs in hydrology and water are looking to space-based observations to provide needed observations **of sufficient accuracy for water resource applications.**

### What socio - economic benefits?

- Consider end-users requirements
- Benefits of Earth observations applications to decision making
- Develop services

# GEOGLOWS mission



To **connect** the demand for sound and timely environmental information to the supply of data and information about the Earth's water system and to explore the science needed to achieve the goals outlined in the initiative.

To **advocate** for broad, open data policies and for the realization of the right to access information

To **help** ensure that the data collected through national, regional and global observing systems is both made available in the public domain and applied to decision-making.

## GEOGLOWS Policy Drivers



International  
Labour  
Organization



PARIS2015  
UN CLIMATE CHANGE CONFERENCE  
COP21·CMP11



FINANCING FOR  
DEVELOPMENT  
13-16 JULY 2015 · ADDIS ABABA · ETHIOPIA  
TIME FOR GLOBAL ACTION



Global Data Products, Capacity Building, etc.

EARTH OBSERVATIONS

Validation Data, Regional projects, Regional Expertise

# GEOGLOWS and Regional Initiatives

GEOGLOWS brings diverse regional water projects into a global framework for improving water sustainability



NextGEOSS (Europe)



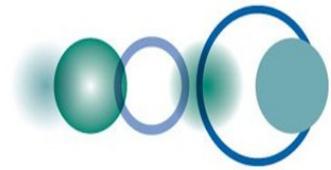
## GEOGLOWS and the harmonization of GEO Water Activities



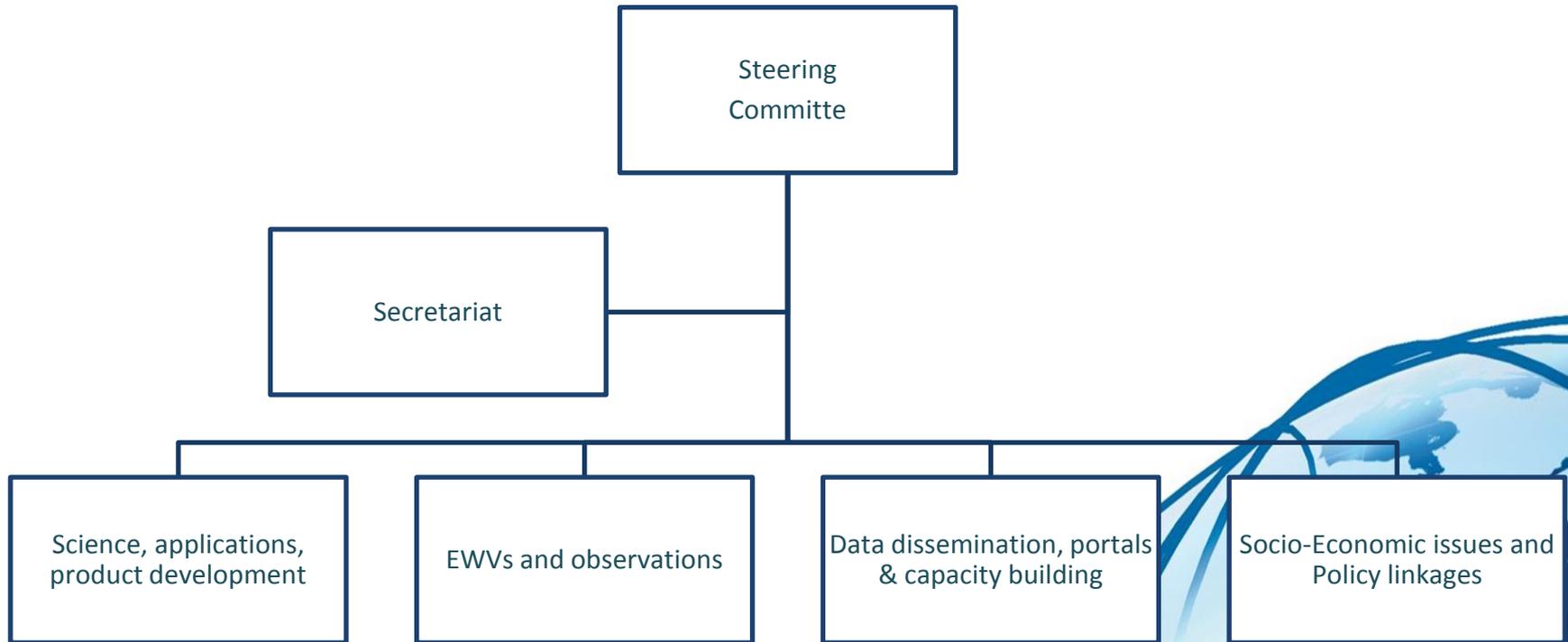
GDIS

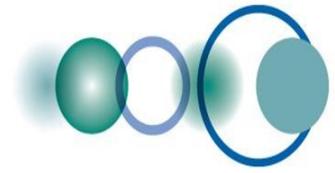


EO4SDGs



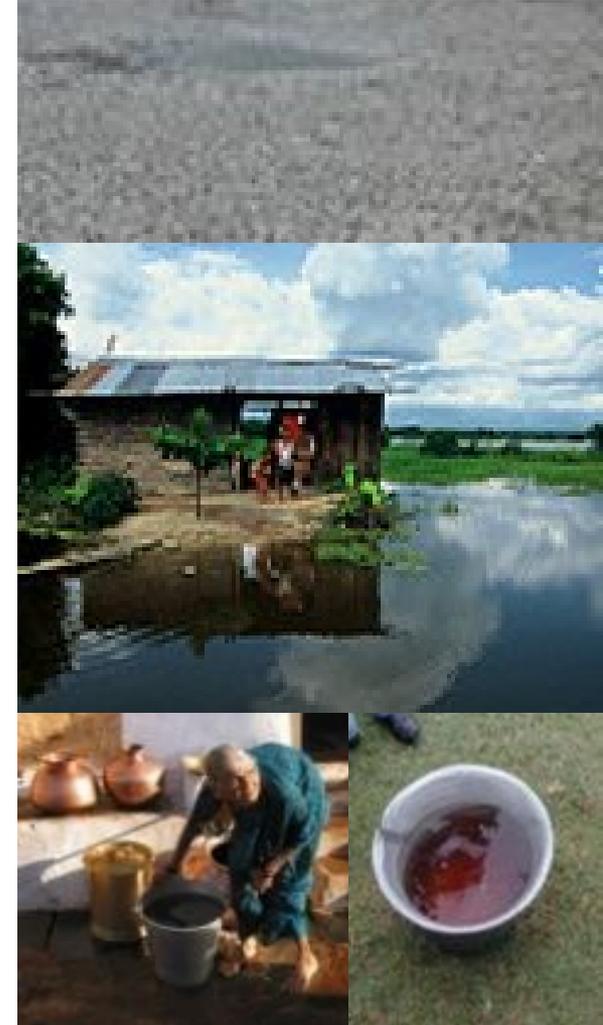
## Developing GEOGLOWS as an international initiative





# Why GEOGLOWS?

- **Water sustainability is a critical issue** in sustainable development and for the achievement of the SDGs.
- **Decision-making in water resources planning and management** can be supported with the improved use of earth observation data and associated analytical tools and services.
- **Poor awareness and use of the available and evolving data** (incl. from earth observation) **and analytical services** especially in the developing world.
- Strong need to improve **open, public-domain access** to critical data and analytical services
- **Need for improved partnerships** to improve quality of supply of services and connect to demand of end-users.
- GEOGLOWS can contribute to **modernized management of water resources to improve productivity and better manage climate risks**
- The amount of satellite based measurements are at any time, greater than any other measurement. **GEOGLOWS will promote the effective use of satellite data to contribute to water management.**



# GEOGLOWS

1<sup>st</sup> Steering Committee meeting, Tuscaloosa, 16 may 2017

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## GEOGLOWS Steering Committee Members:

### Co-chairs

Dr. Angelica Gutierrez-Magness, USGEO, USA

Rose Osinde Alabaster, Waterlex, Switzerland/Kenya

### Members

Mr. Carlos Gustavo Cano, Colombia

Prof. Toshio Koike, ICHARM, Japan

Dr. Selma Cherchali, CNES, France

Ms. Faith Mitheu, RCMRD / SERVIR, Kenya

Dr. Johannes Cullman (UN), WMO, Switzerland

Dr. Sylvester Mpandali, South Africa

Dr Paul DiGiacomo, CEOS, USA

Dr. Sekhar Muddu, India

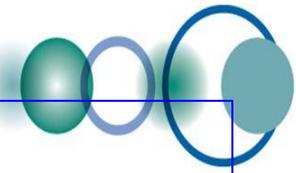
Mr. Cesar Garay, CIRMAG, Colombia

Dr. Yubao Qiu, CSA, China

Dr. Nagaraja Rao Harshadeep, World Bank, USA

Dr. Peter Salamon, EC JRC, Italy

Dr. Srikantha Herath, Sri Lanka



# Working Group Draft Deliverables

A. Limaye & E. [Beighley](#)

Science, applications  
product development

Complete a study to **quantify global water** availability (and quality)  
Develop **an Inventory water related products**  
**Develop tools**

[G. Huffman](#)

EWVs and observations

**Review** the descriptions of the EWVs in the Water Strategy and **make recommendations** on what additional information is needed for the EWVs in order to meet the requirements of **CEOS** and other interested groups.

[J. Nelson](#)

Data dissemination, portals &  
capacity building

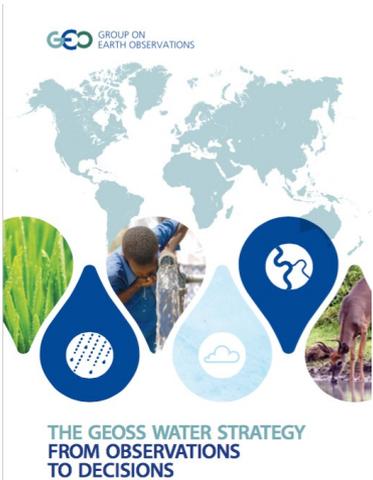
**Survey/inventory** and **mapping** of existing data portals already exist.  
Develop **global streamflow forecast system** based on the ECMWF/GloFAS system, Tethys streamflow prediction app, ESRI map services, and Cloud Services with World Bank Support - **This project is already in implementation with 6 pilot projects world-wide**

[R. Alabaster](#)

Socio-Economic issues and  
Policy linkages

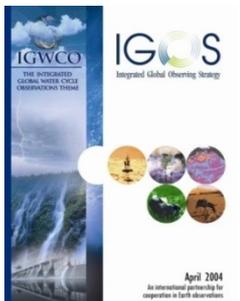
**Socio-economic database** linked with the science data from GEOGLOWS. **Case study** as a basis for capacity enhancement resources related to **SDG 6b** implementation.  
Baseline information needs defined as a basis for integrated water management. **Review of information needs and identification of gaps.**

# GEOGLOWS and the GEOSS Water Strategy

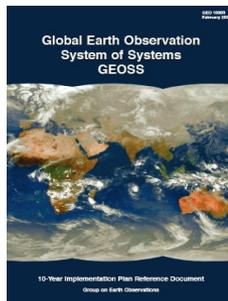


- The **GEOSS Water Strategy** renews the observational component of the community's efforts to communicate the needs of the Water community within the framework of GEOSS.
- **CEOS Water Strategy Implementation Study Team (WSIST)** prepared the CEOS Water Strategy to the GEOSS Water strategy recommendations.
- Working with other initiatives and organizations GEOGLOWS will implement the GEOSS water strategy recommendations.

## GEO Water Strategy



IGOS Water Theme report  
April 2004



GEOSS 10 Year  
Implementation Plan  
February 2005

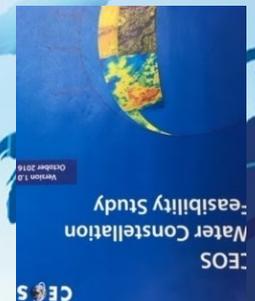


GEOSS Water Strategy  
January 2014

## CEOS Response



CEOS Water Strategy  
October 2015



CEOS Water Constellation  
FS October 2016



# GEOGLOWS list of connection with CEOS

**Enhance** the added value of Earth Observations to provide the right information for water resource management.

**Provide feedback** to CEOS and CEOS agencies on requirements for space-based Earth Observations and facilitate the collaboration across all the agencies in addressing those requirements.

**Collaborate** with CEOS in developing the tools and environment needed to expand the use of satellite data

- With Working groups (**WGCapD**, **WGClimate**, **WGCV**, **WGDisasters**, WGISS)
- With CEOS Virtual Constellations (AC-VC, **LSI-VC**, OCR-VC, OST-VC, OSVW-VC, **P-VC**, SST-VC)
  - **Proposing a SAR-VC** (Synthetic Aperture Radar) which would support GEOGLOWS as well as AquaWatch and Blue Planet for (CEOS) Water Activities
- With CEOS Ad Hoc Teams (**Ad Hoc Team on Sustainable Development Goals**, Ad Hoc Team on Future Data Architectures, Ad Hoc Working Group on the Group on Earth Observations (GEO) Global Agricultural Monitoring (GEOGLAM) Initiative,

**GEOSS Water Strategy:** On going opportunity to collaborate on new area after further discussion with Aquawatch Blue Planet

# Thank You

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Communicate and Collaborate with GEO:

