

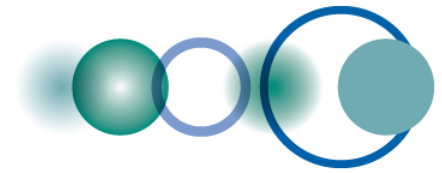
Group on Earth Observations water activities and strategy

18 March 2015

**Mapping Water Bodies from Space conference, ESA –
ESRIN, Frascati**

**Dominique Berod
GEO Secretariat**



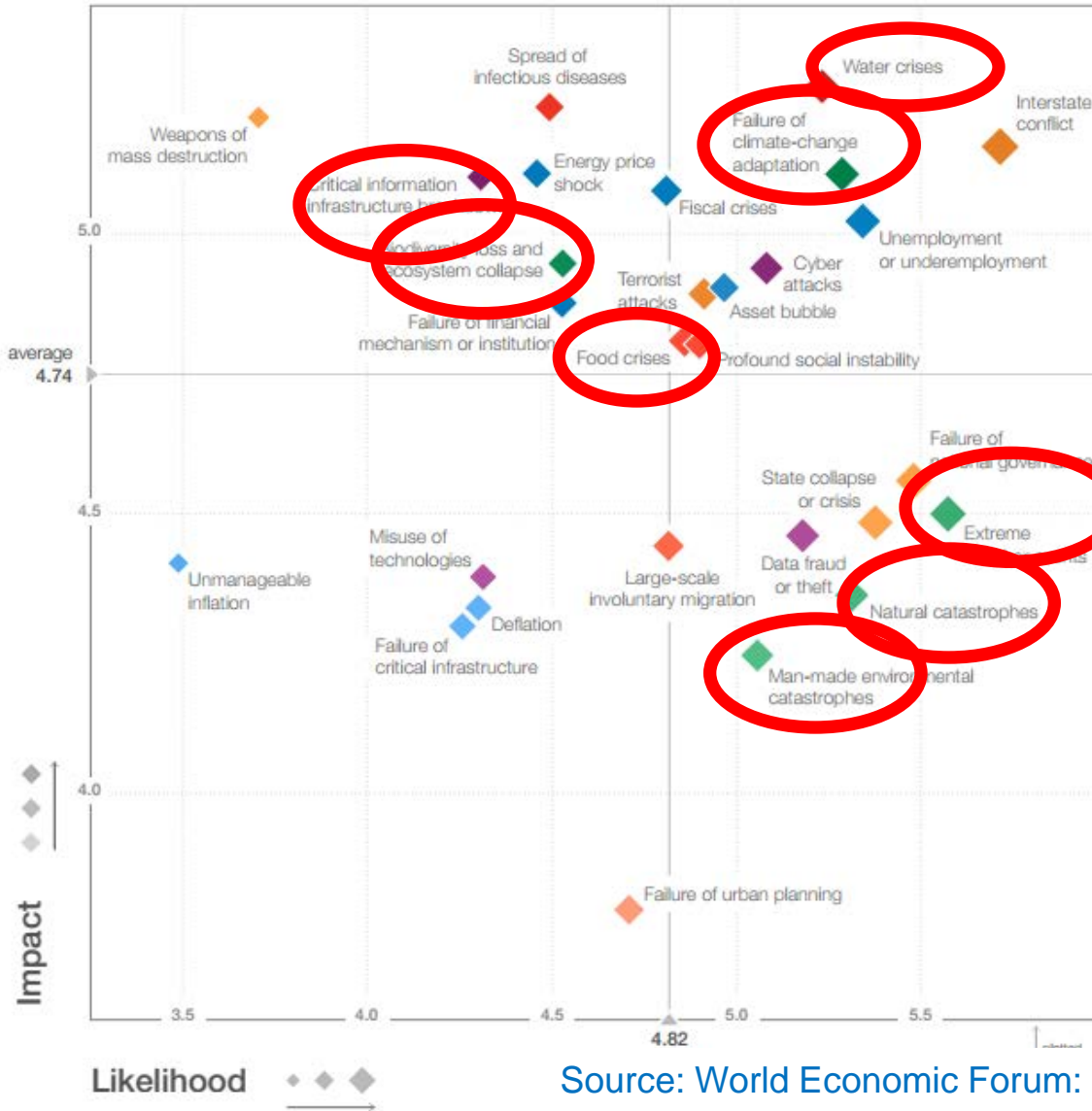


Messages

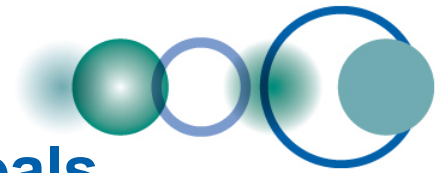
- 1. Water was, is, and will be a challenge for the human community**
- 2. Political decisions in a complex and changing world have to be based on sound data, information and knowledge**
- 3. Earth observations require an efficient organization at several scale**
- 4. Dialogue between providers, and between providers and users is required**
- 5. The Group on Earth Observations has an intergovernmental mandate to contribute to dialogue, organization of Earth observation and to decision support.**



WEF Global Risks Landscape 2015 from the World



Geospatial data required, at global and local scale!



Post-2015 sustainable development goals

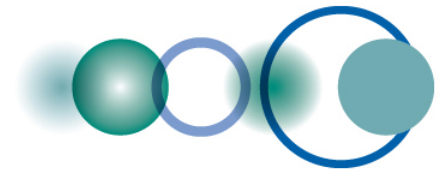
- 17 proposed goals to be adopted in September 2015
- Number 6:
Ensure availability and sustainable management of water and sanitation for all

- ⇒ Access to drinking water for all
- ⇒ Access to equitable sanitation and hygiene for all
- ⇒ Improve water quality
- ⇒ Increase water-use efficiency
- ⇒ integrated water resources management at all levels, including through trans-boundary cooperation
- ⇒ protect and restore water-related ecosystems

Goals ➡ Targets ➡ indicators ➡ Observations



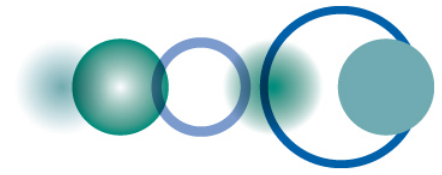
For many countries: technical and financial issue



Group on Earth Observations 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.

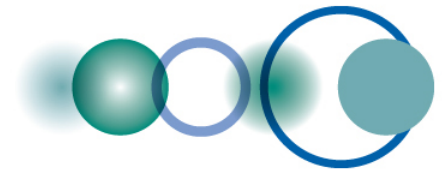
⇒ Urgent, global, complex and growing challenges



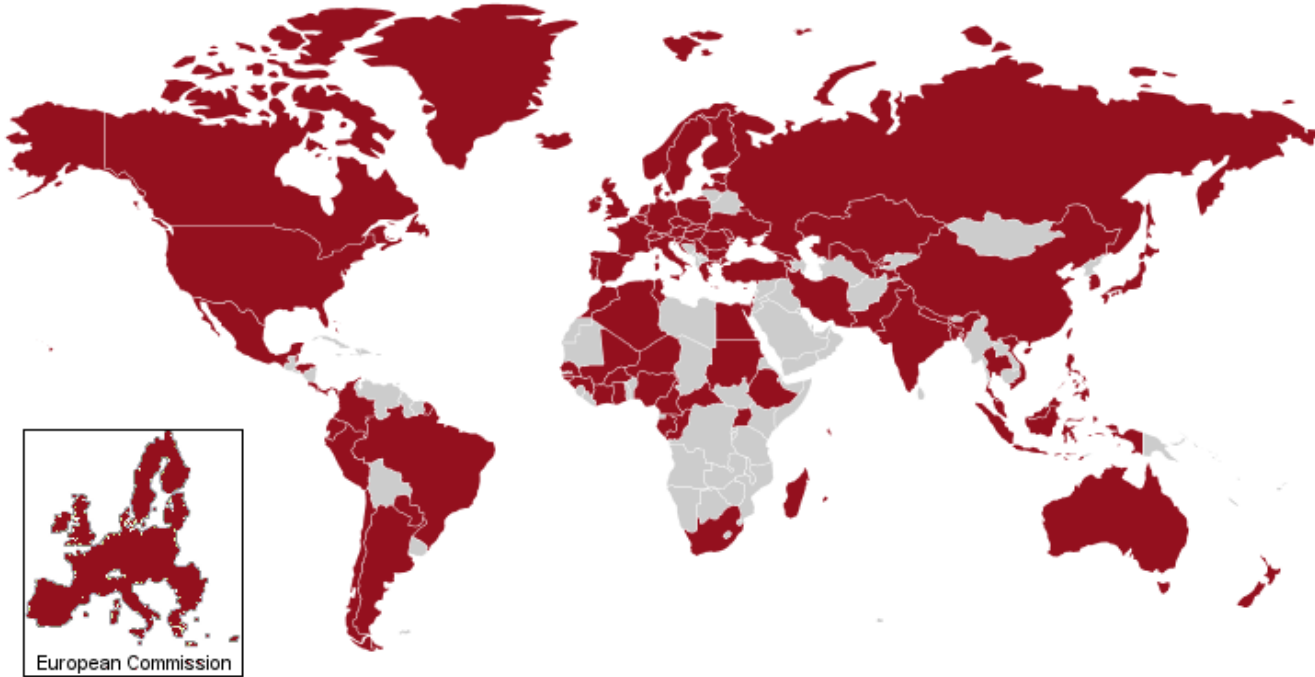
GEO, the Group on Earth Observations

An Intergovernmental group with 97 Members and 88 Participating Organizations





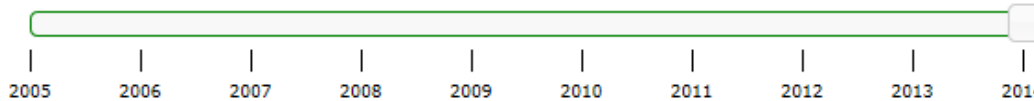
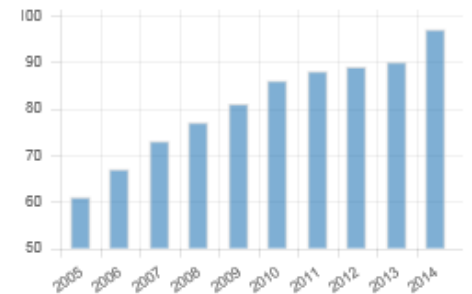
GEO Member Map for the year 2014

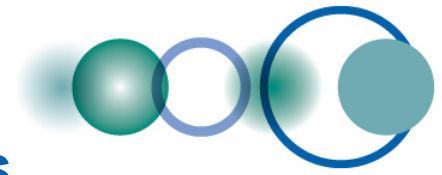


Number of Members (2014)

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

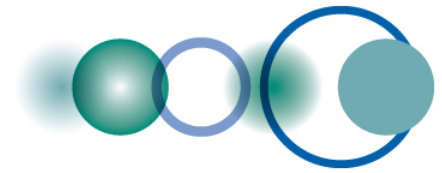
Number of Members by year





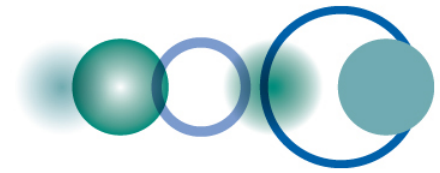
88 Participating Organizations





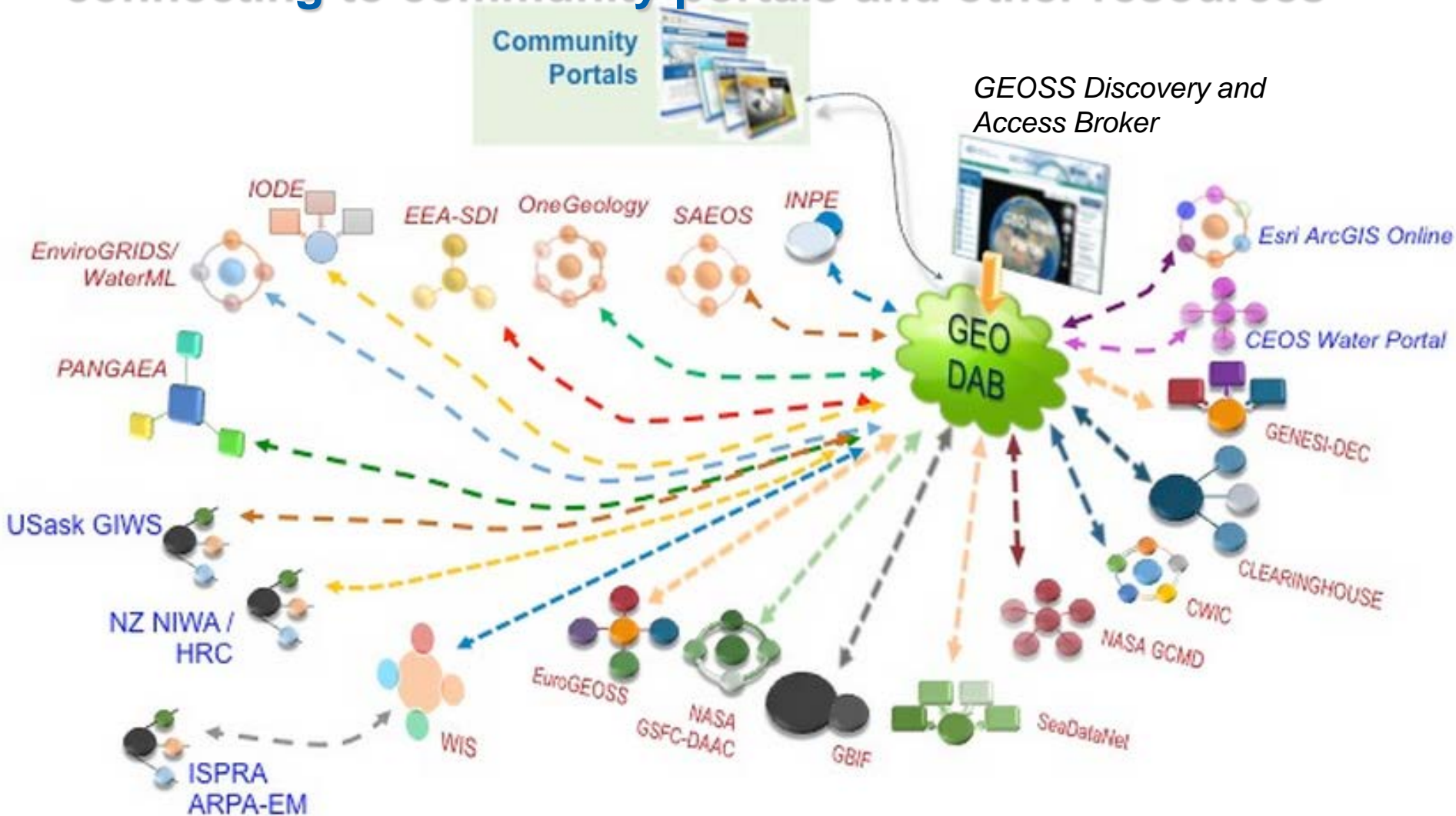
GEOS: A Global, Coordinated, Comprehensive and Sustained System of Observing Systems





GEOSS Portal:

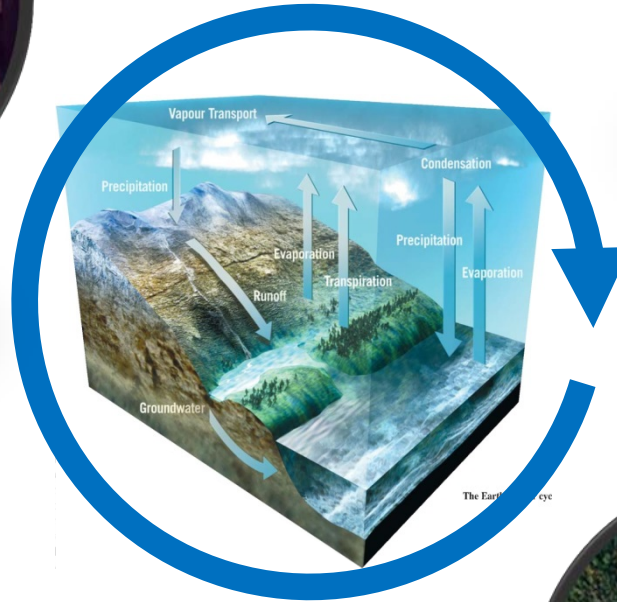
connecting to community portals and other resources





GEO Water task, 5 components

Water cycle



Capacity building



Extremes

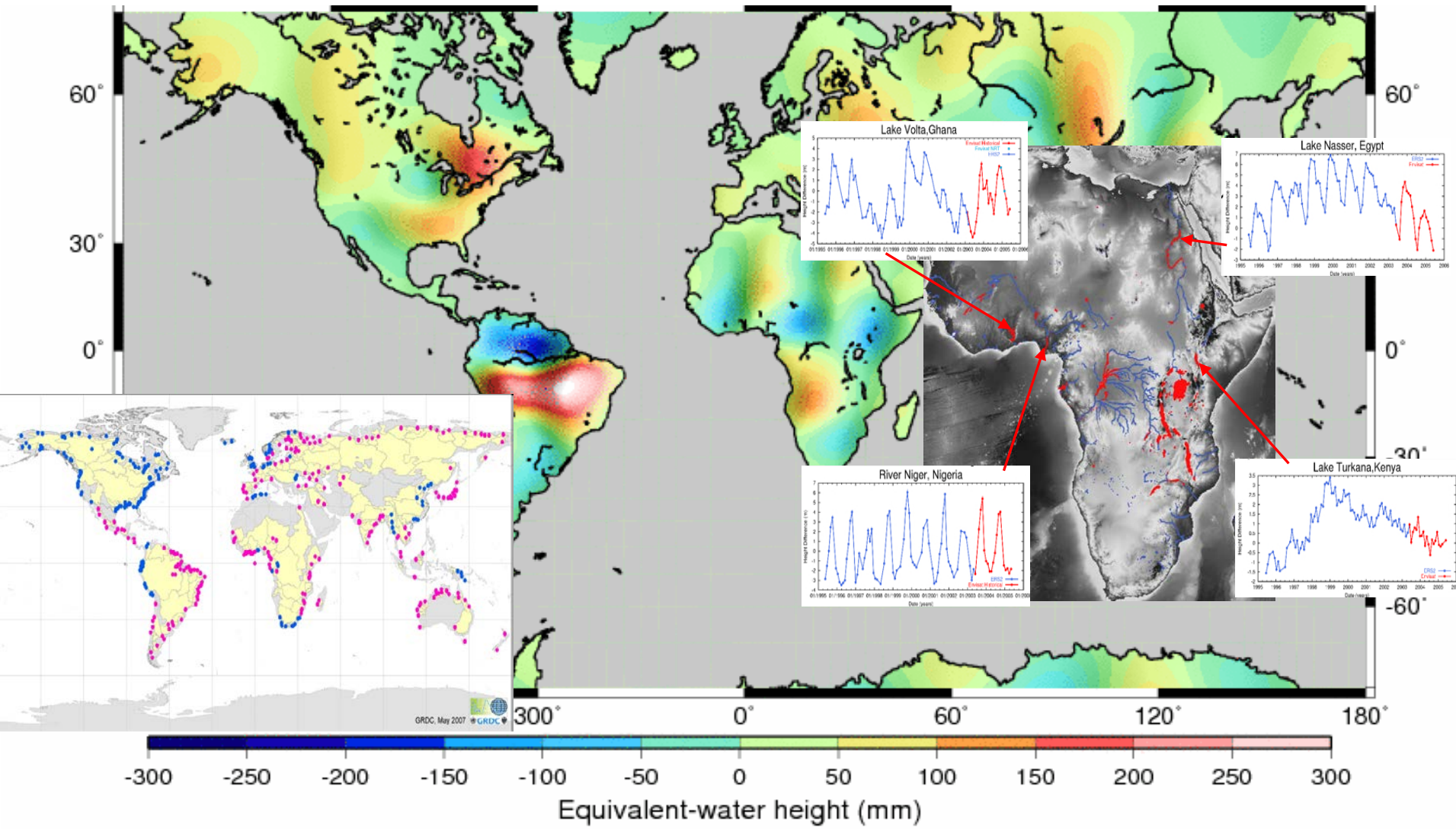


Cold regions

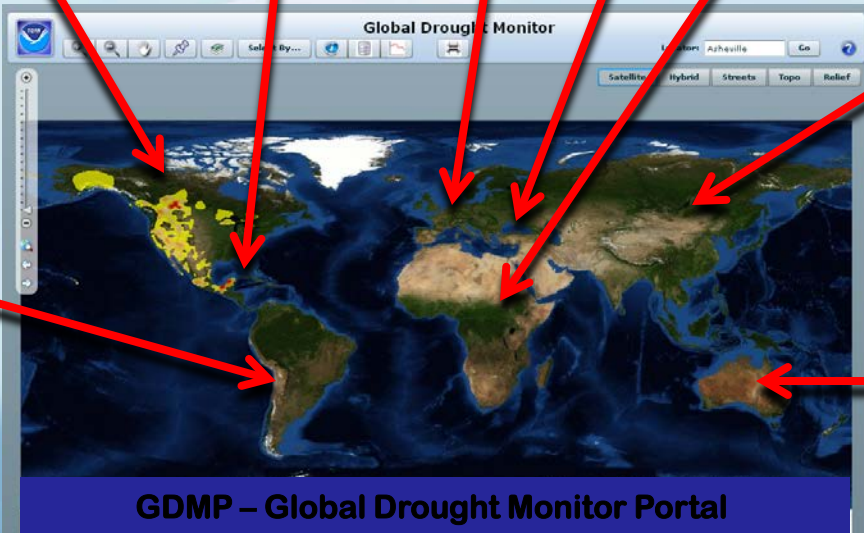
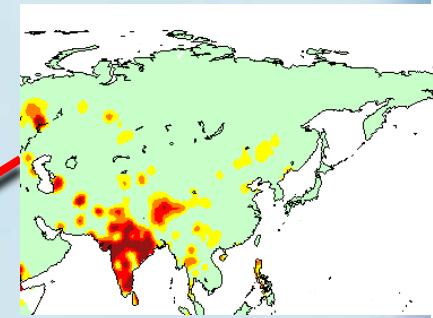
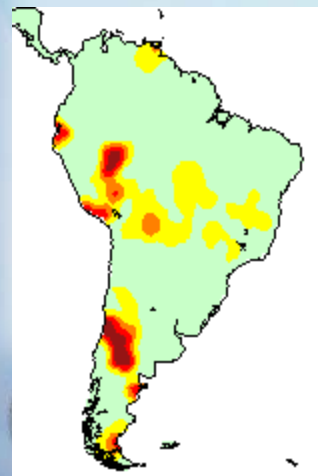
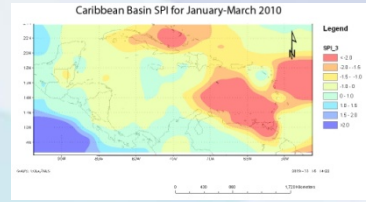
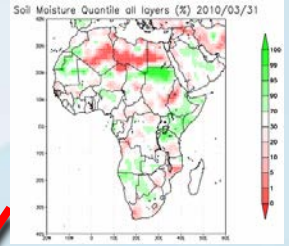
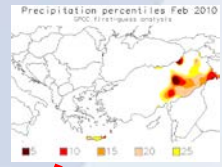
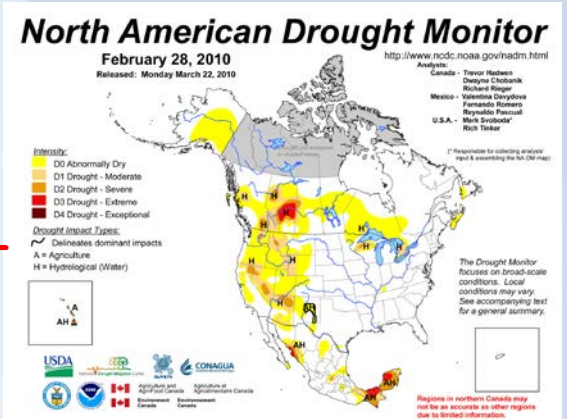
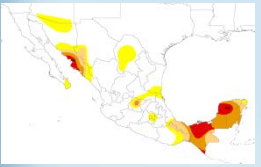
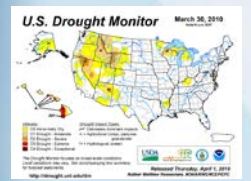
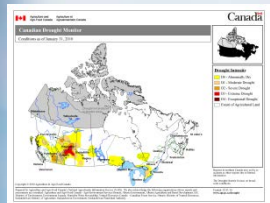


Water quality

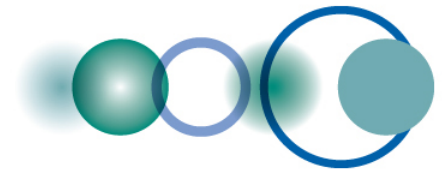
Example C1: combination of observations from various disciplines, nations and agencies: gravity field changes measured by the GRACE (NASA/DLR) satellite reflecting the redistribution of subsurface water masses stored on continents; level of lakes and rivers measured by altimetry satellites Jason (CNES/NASA/EUMETSAT/NOAA) and Envisat (ESA); and observations from networks of in-situ water discharge/run-off stations.



Example C2: GEO Global Drought Monitor – An Integration of Continental / Regional Drought Monitors



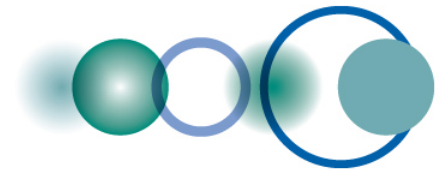
Data Cen



Issues and challenges, science and technology (from Water strategy 2014, satellite)

1. Feasibility of developing a water-train satellite constellation
2. Coordination of missions for cloud properties
3. Promotion of advanced satellite technology
4. Coverage and quality of observations (< 3 hours revisit time)
5. Next generation precipitation radar
6. Commitment for thermal band Imaging sensors
7. GRACE II mission
8. Cold season processes and variables
9. Multichannel sensors for freeze/thaw patterns
10. Feasibility assessment of hyperspectral mission (water quality)

Earthly space observation: no serious gap in time series,
format and documentation of data



Conclusions



1. No end product without raw material
⇒ *No political decision without data, information, knowledge*
2. Producers must know what users want
⇒ *Data for different users, time scale, present and future purposes*
3. Users should be aware of requested resources for the production chain
⇒ *No data, information, knowledge without political decision*

Thank you!

earthobservations.org

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