

水に関する国際研究・教育プログラムへの日本からの発信
—若手研究者のキャリアアップとジャパン・イニシアティブ—

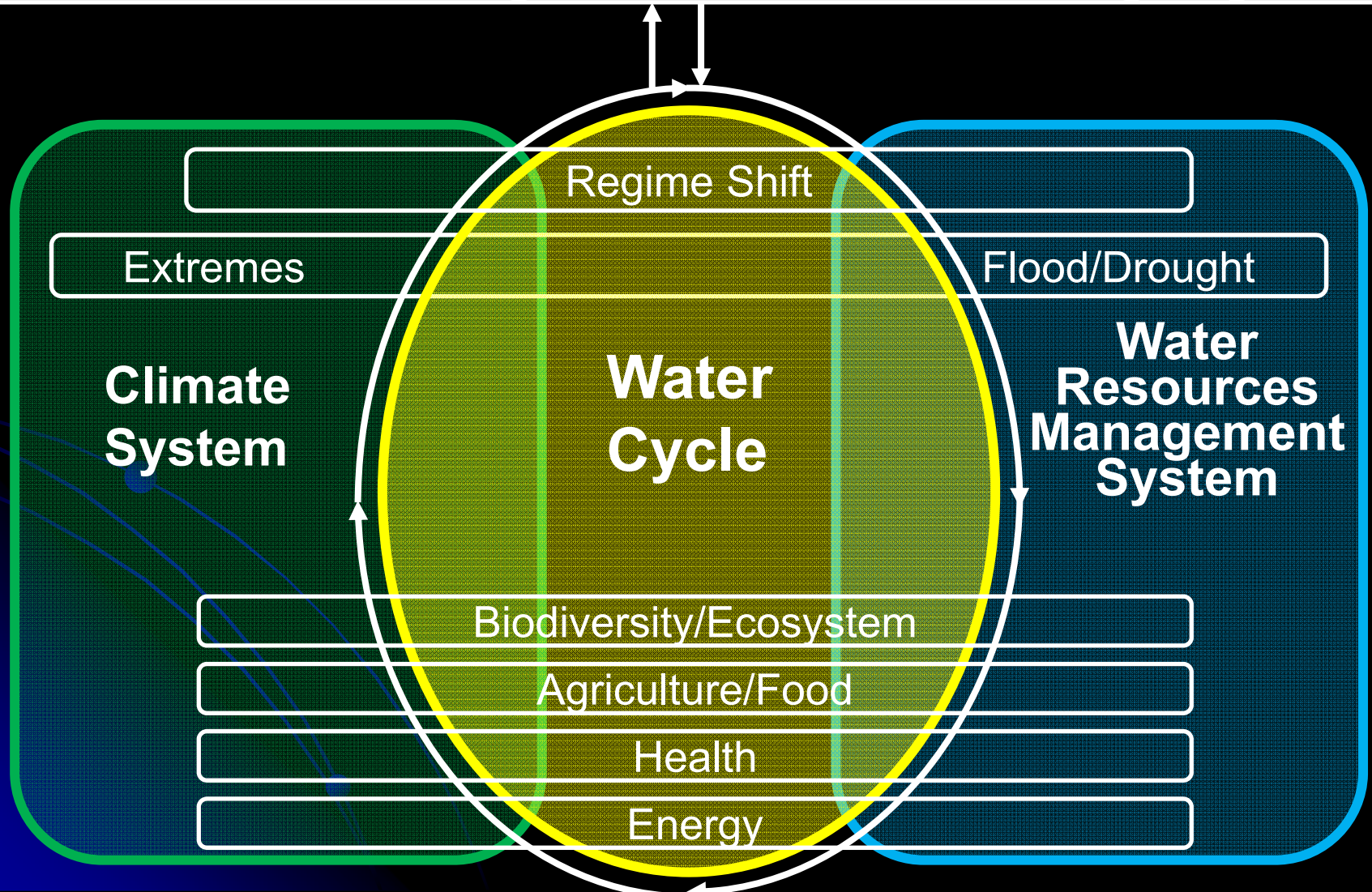
「水の研究教育に関する国際動向」

地球観測・予測データの統合的利用による
科学知と公共的利益の創出

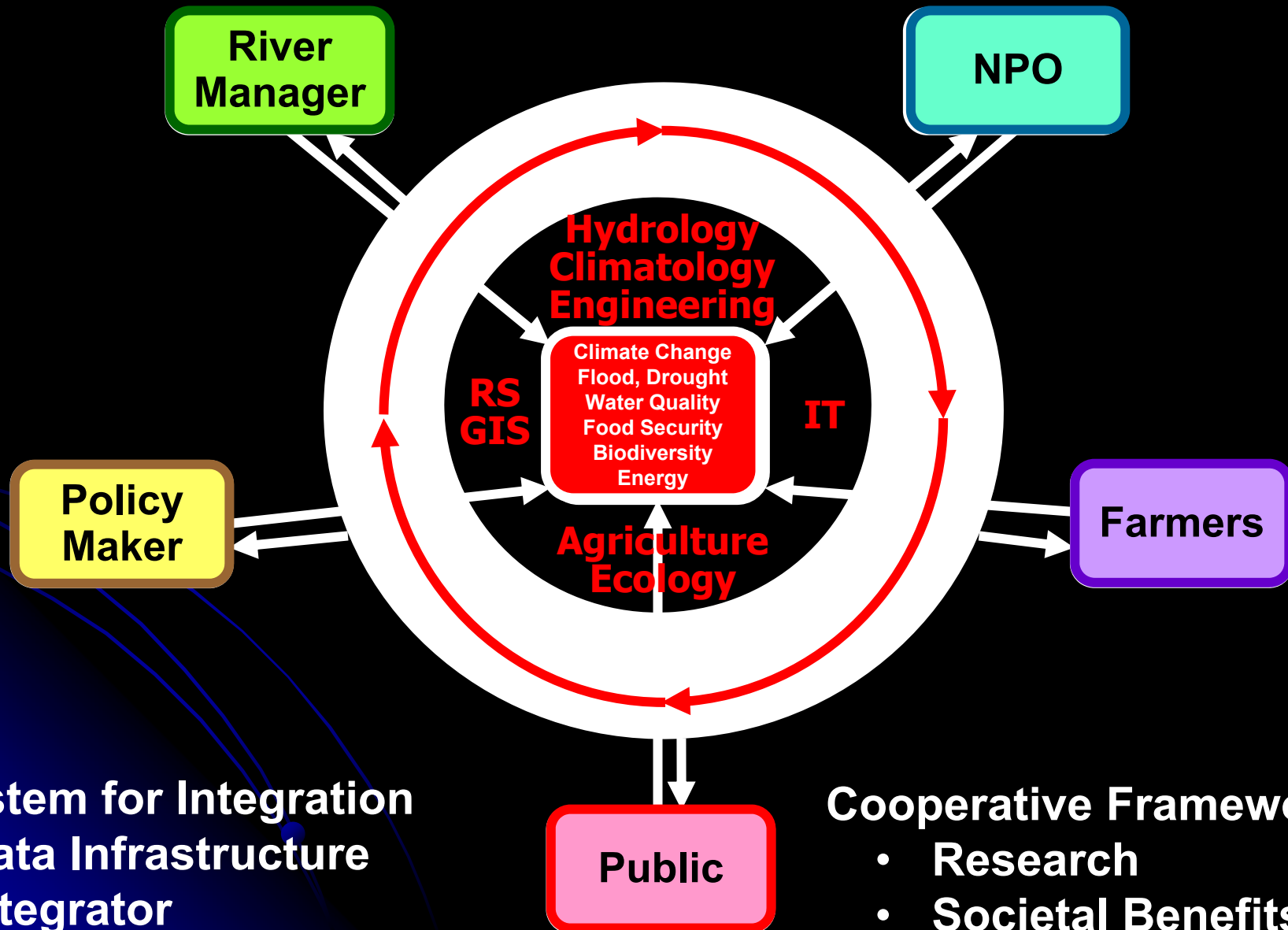


小池俊雄
東京大学大学院工学系研究科

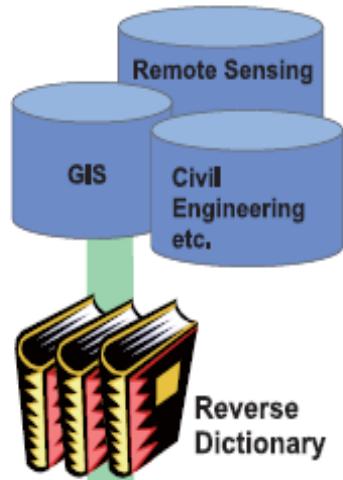
Coordinated and Integrated Efforts for Working Together



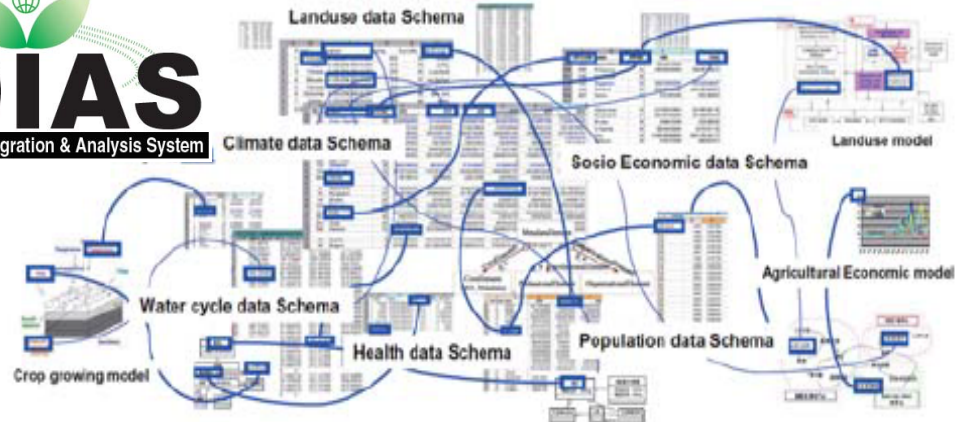
Sharing Data and Information Exchanging Knowledge, Experiences and Ideas Working Together



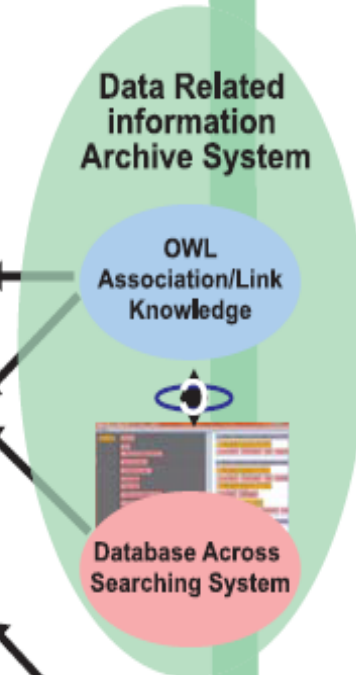
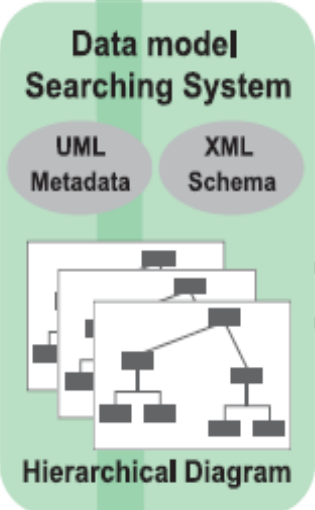
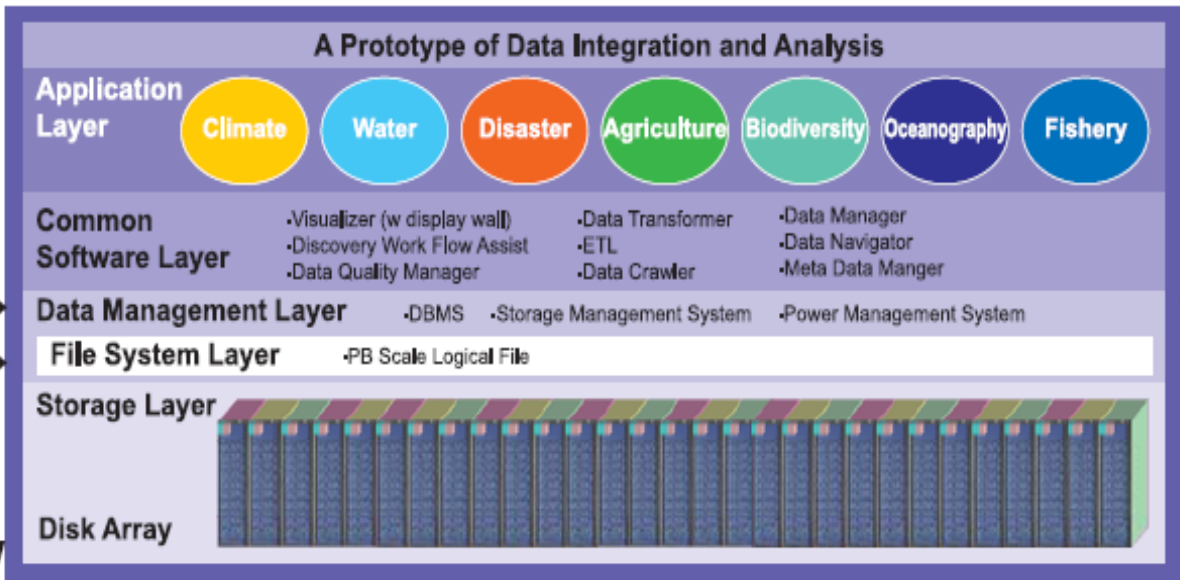
Technical Term Dictionary



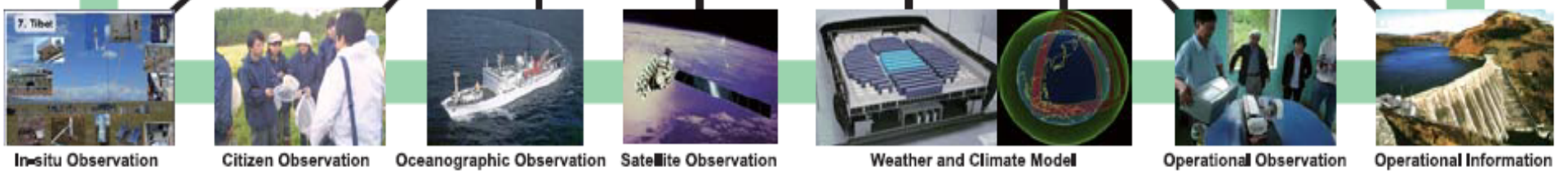
DIAS
Data Integration & Analysis System



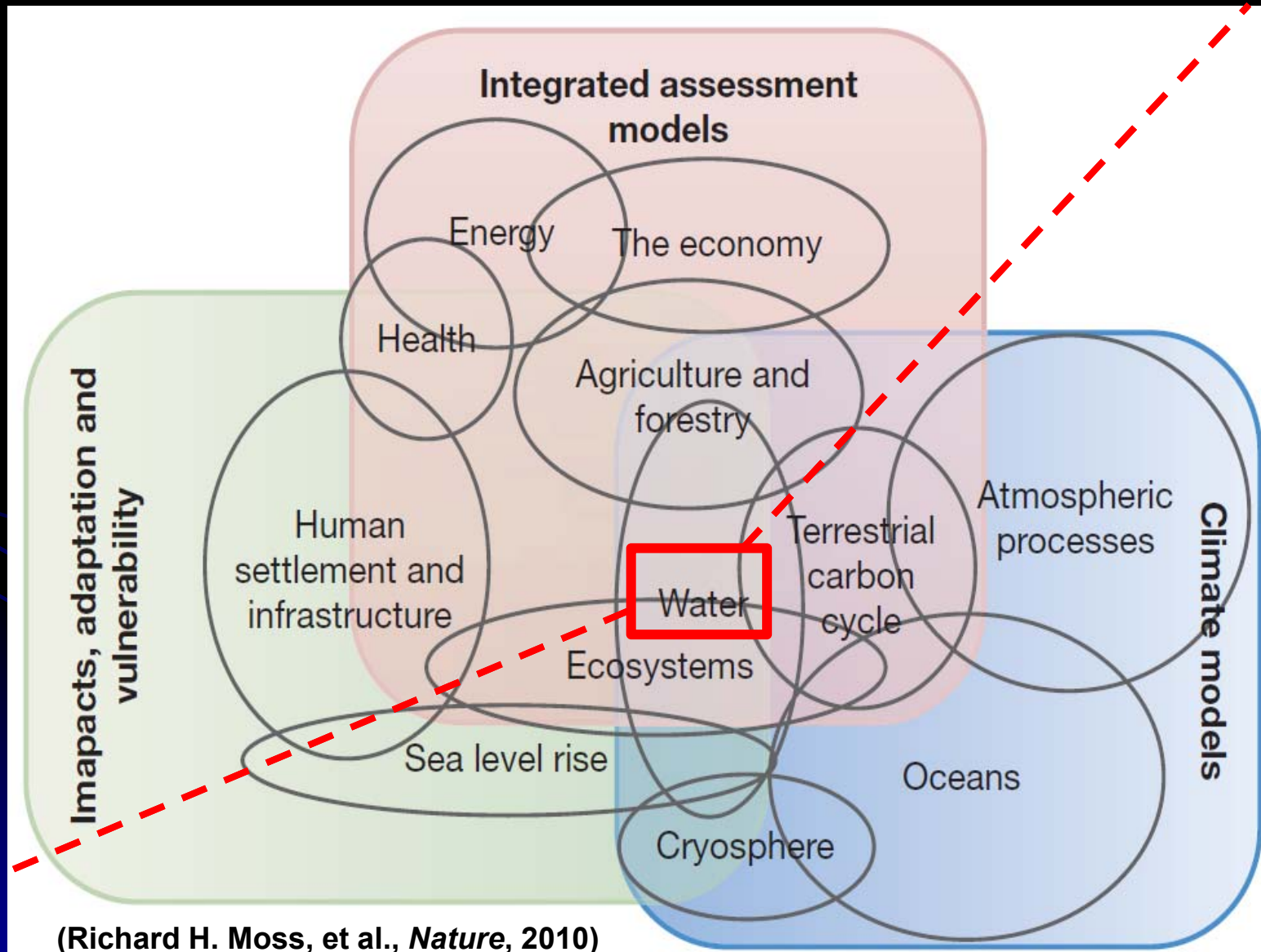
Extra Diversity and Complex Relativity of Data and Information



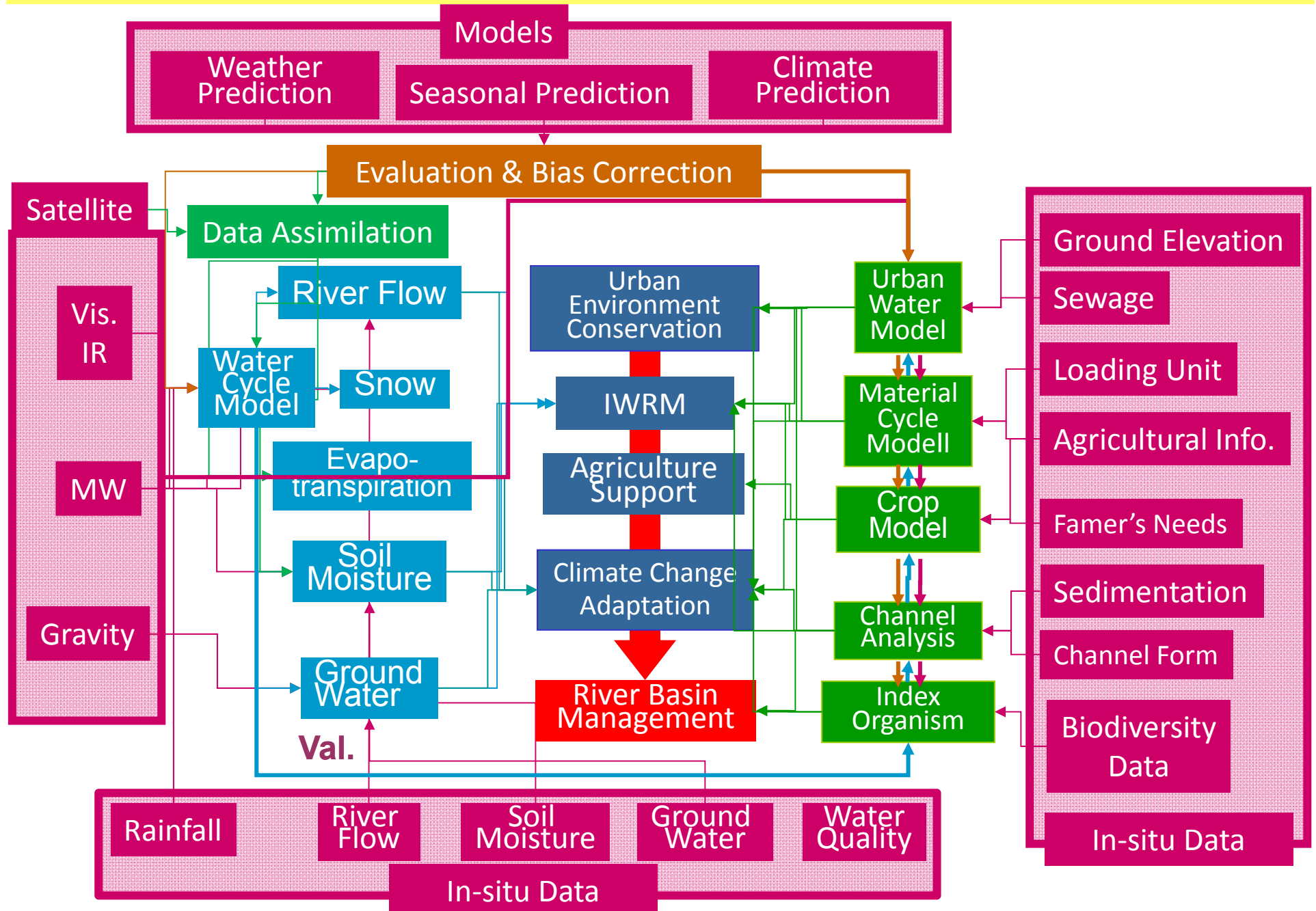
Extra-Large Volume data from various data and information source



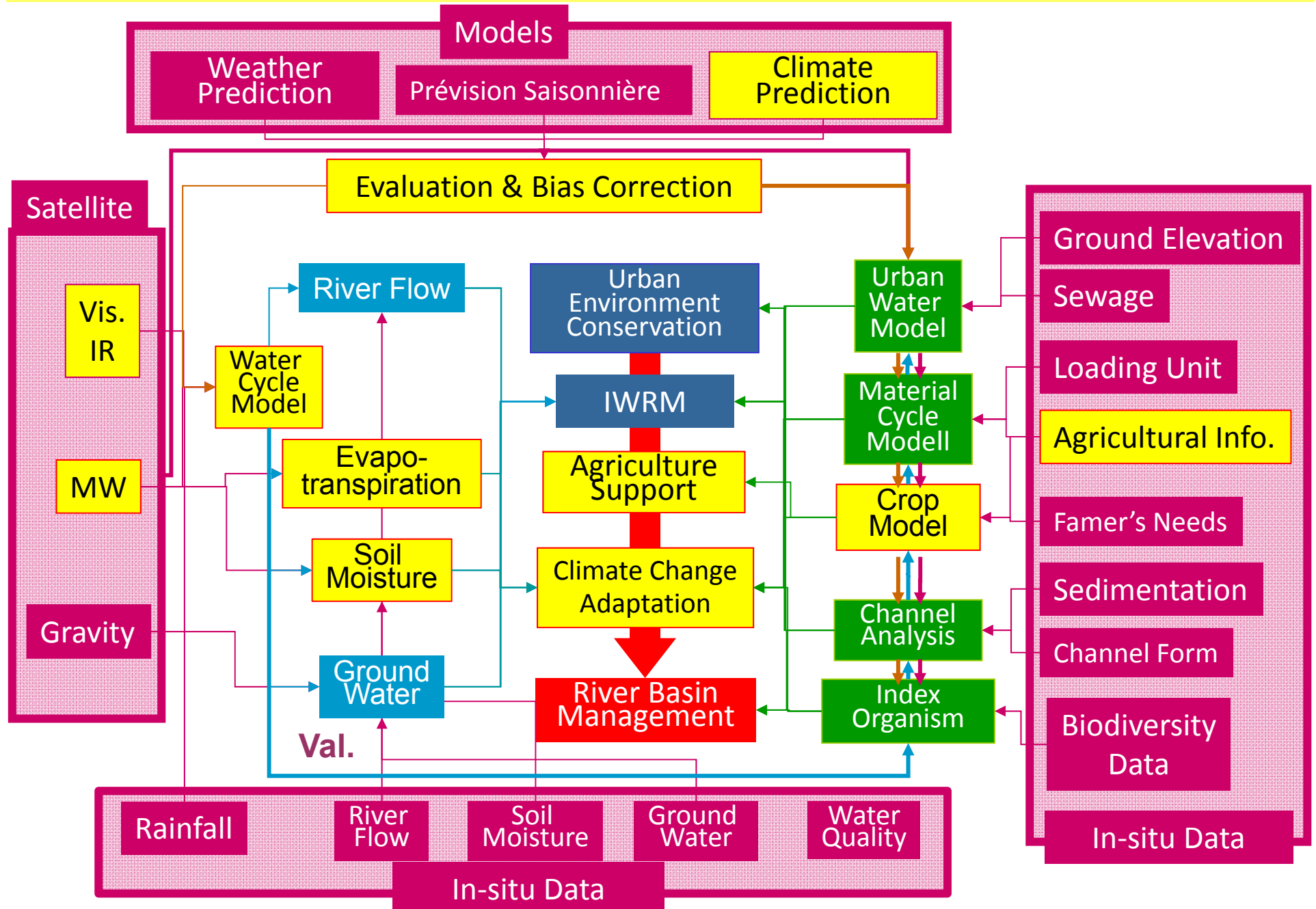
Water is a Key
bridging between climate processes and societal benefits.



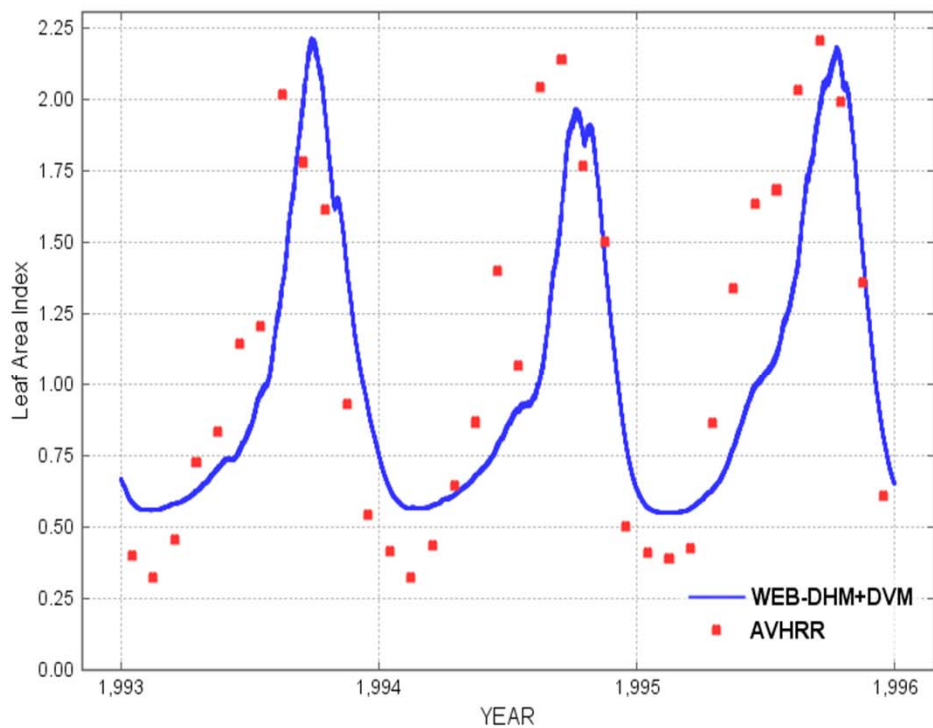
Water Cycle Integrator



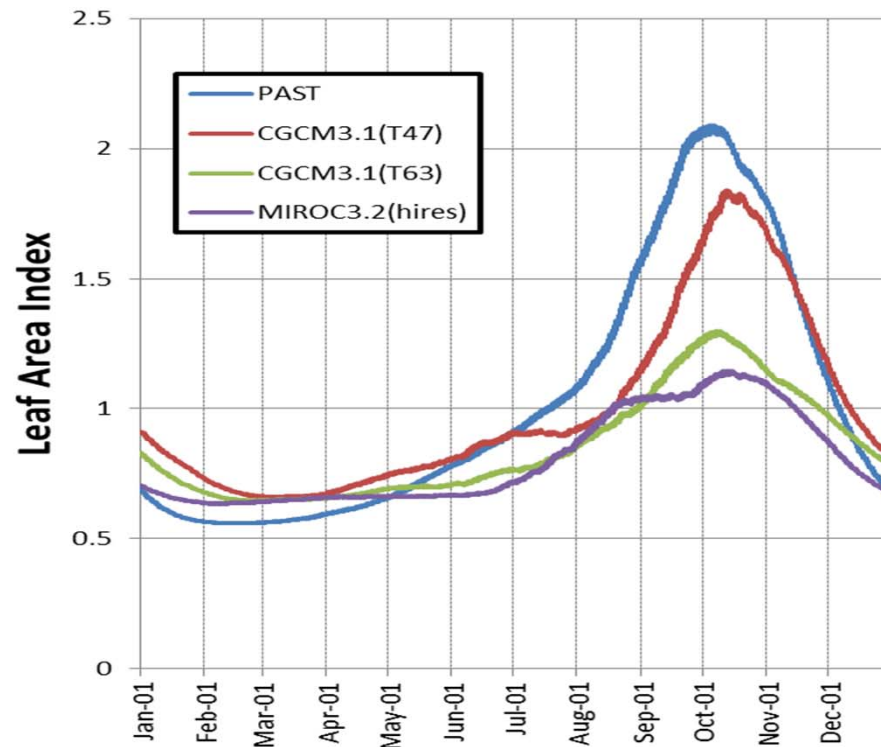
Water Cycle Integrator



Climate Change Impacts on Vegetation



Simulation of the seasonal change in vegetation in West Africa and validation by using the satellite data.



Impact of climate change on vegetation dynamics in the river by using the selected GCM outputs after the bias correction.



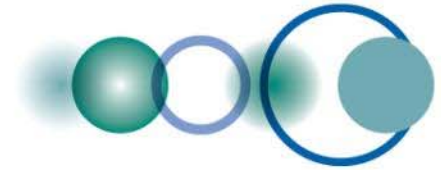
GEO, the Group on Earth Observations

An Intergovernmental Body

with 89 Members & 61 Participating Organizations

- *Earth Observation Summit I (July 2003: Washington DC)*
- *EO Summit II (April 2004: Tokyo)*
- *EO Summit III (February 2005: Brussels)*
- *EO Summit IV (November 2007: Cape Town)*
- *EO Summit V (November 2010: Beijing)*





Global Earth Observation System of Systems



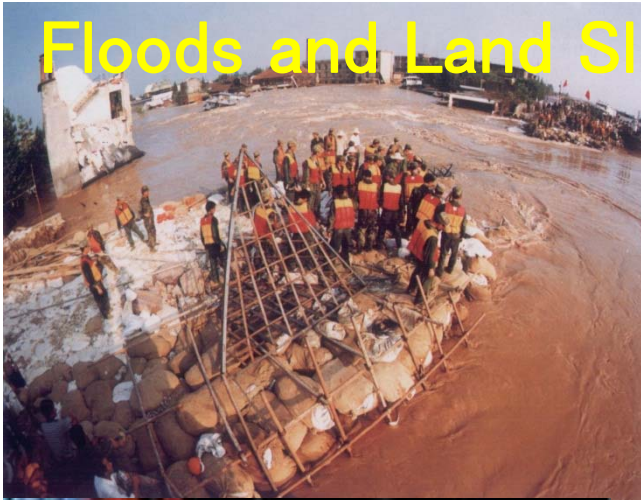
Vision for GEOSS

The vision for GEOSS is to realize a future wherein decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth observations and information.



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

Floods and Land Slides

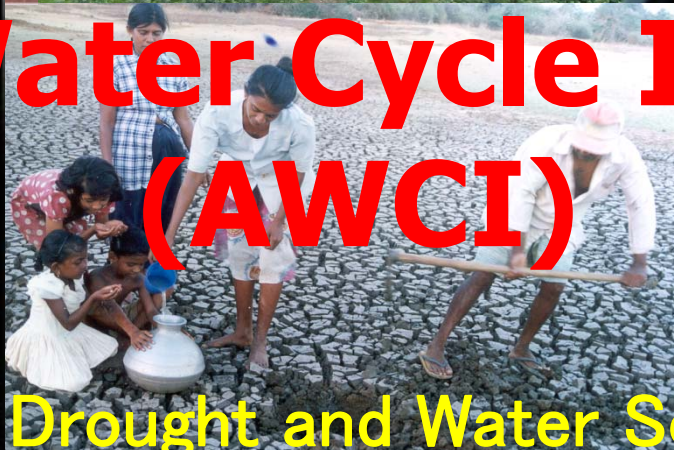


GEOSS

Asian Water Cycle Initiative (AWCI)



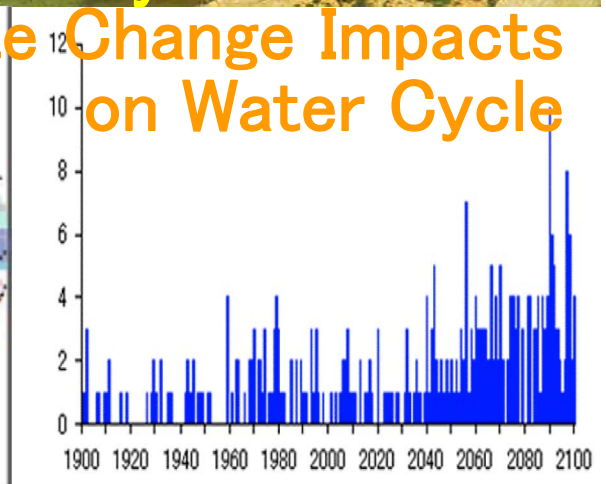
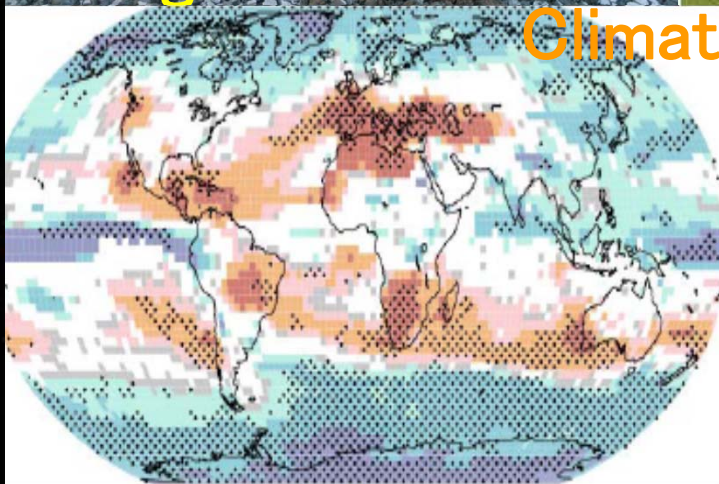
Water Pollution and Ecosystem Degradation

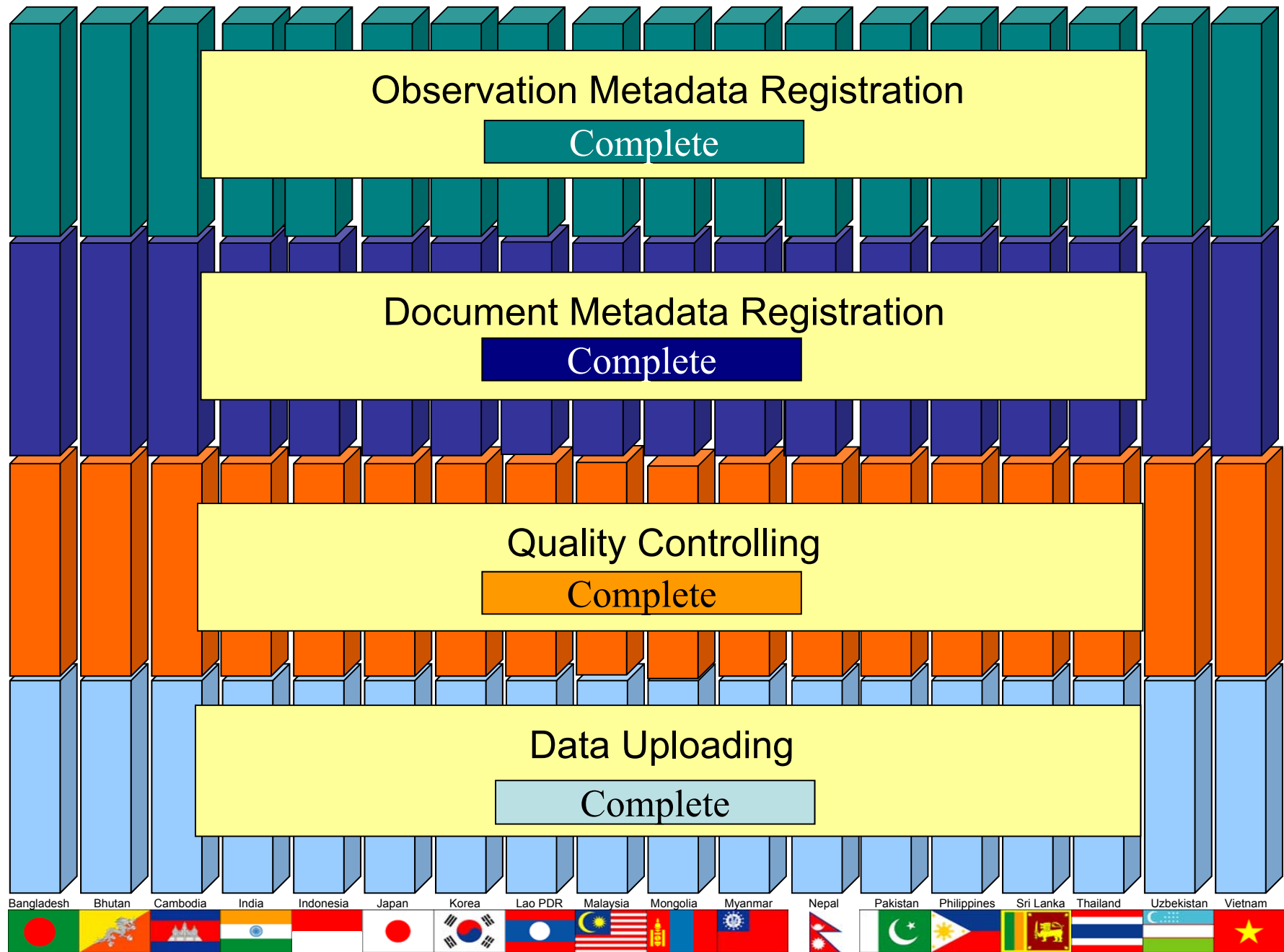


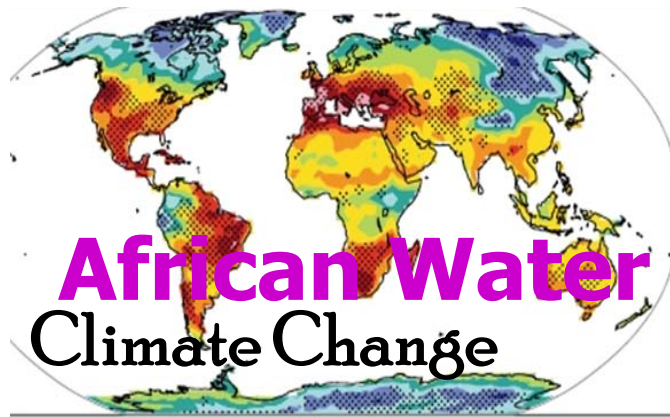
Drought and Water Scarcity



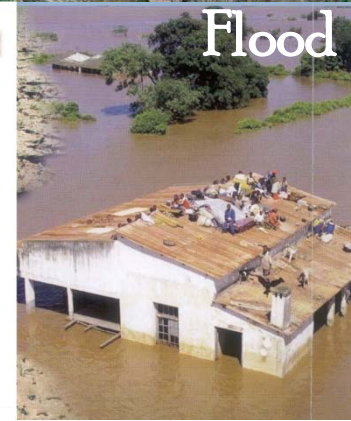
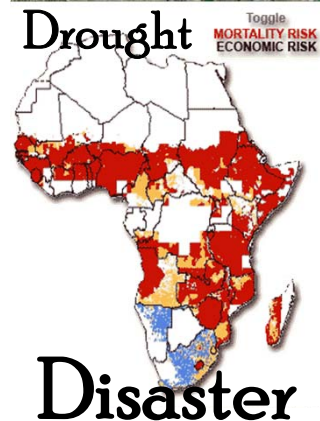
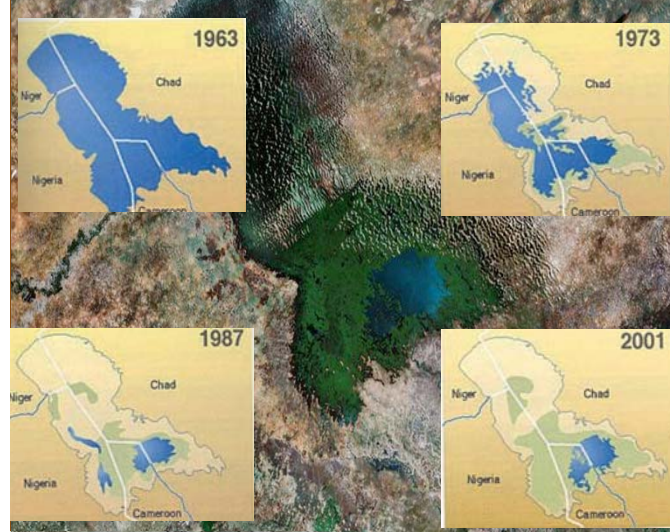
Climate Change Impacts on Water Cycle







Ecosystem Degradation



- On track to meet the MDG drinking water target: only 26 of the 53 countries
- Water related diseases: more than 80% → deaths for children under 5
- Deficient agricultural water management: e.g. only 10% of irrigable lands are actually irrigated in WA.
- Hydropower development < 7% of the potential
- 5-25% of GDP due to droughts and floods in affected countries
- Climate impacts are greatest in poor countries.

Food



GEOSS African Water Cycle Symposium



**Tunis
6-8, Jun., 2009**



**Addis Ababa
23-25, Feb., 2011**



**Libreville
27-29, Feb., 2012**

Sustained Educational Framework (universities)

Training Module Training Module Training Module Training Module Training Module

Member State Member State Member State Member State

Trans-boundary River Basin Organization

Regional Centers

UN Programs

stakeholder

Space Agencies

Planning Operation

Work Bench

Understanding Prediction Application

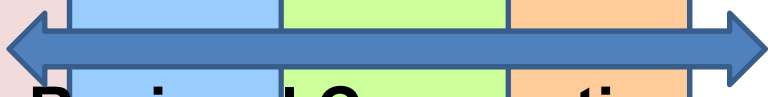
Science Communities Universities

ODA Projects

Science Projects

stakeholder

Modeling Centers



Regional Cooperation

- *Lake Chad*
- *Medjerd*
- *Niger*
- *Nile*
- *Okavango*
- *Orange-Senqu*
- *Senegal, Zambezi*
- *Volta*

Sharing Data and Information: *IT Infrastructure*

Exchanging Ideas and Experiences: *communication*

Working Together: *action plans*



United Nations

A/CONF.216/L.1



RIO+20
United Nations Conference
on Sustainable Development

Distr.: Limited
19 June 2012

Original: English

Rio de Janeiro, Brazil
20-22 June 2012

Agenda item 10

Outcome of the Conference

The future we want

274. We recognize the importance of space-technology-based data, in situ monitoring and reliable geospatial information for sustainable development policymaking, programming and project operations. In this context, we note the relevance of global mapping and recognize the efforts in developing global environmental observing systems, including by the Eye on Earth Network and through the Global Earth Observation System of Systems. We recognize the need to support developing countries in their efforts to collect environmental data.