

# **Expectations for the AfWCCI Workshop**

**Feb. 4, 2013  
AfWCCI Workshop  
El Jadid, Morocco**

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**Objective:** The objective of the workshop is to develop the AfWCCI Implementation plan. The plan will serve as the basis for coordination among agency activities and for setting priorities for project proposals that will be developed in advance of the AfWCCI symposium planned for Tokyo in the spring of 2013. The Implementation Plan will include action plans for specific basin-scale projects and build on activities that have recently been developed.



(from Abou Amani)

# Water for economic growth

Many African economies are extremely vulnerable to hydrological variability. Africa loses:

- 5% of GDP due to poor coverage of water and sanitation
- 2% power outage.
- 5-25% to droughts and floods in affected countries
- and further 5% to the future impact on climate change.
  
- Only 7% of Africa's hydropower has been developed and there are growing gaps in electrification.
  
- Africa's agricultural water is under-utilized, with a food import bill of over US\$ 17 billion.
  
- Progress on energy and food security issues is vital for any significant economic growth in Africa

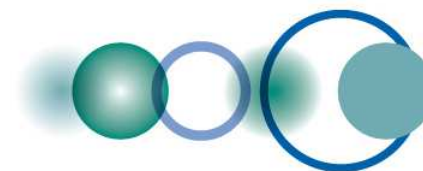
Water and Sustainable Development:

Water is the entry point for Sustainable Development (SD) and the Green Economy. Without water security it will not be possible to realize these SD Goals and to cope with the wide range of economic and social risks that will arise from climate change, disasters and manipulation by humans of the Earth's surface.

Water security requires the ability to:

- Map the availability and quality of surface and sub-surface waters,
- Measure and understand how the water cycle varies and changes,
- Predict how the availability and quality of water resources will change on a range of time and space scales,
- Support the integrated planning and management of water resources both nationally, internationally, and globally,
- Implement new technologies for water discovery and supply.

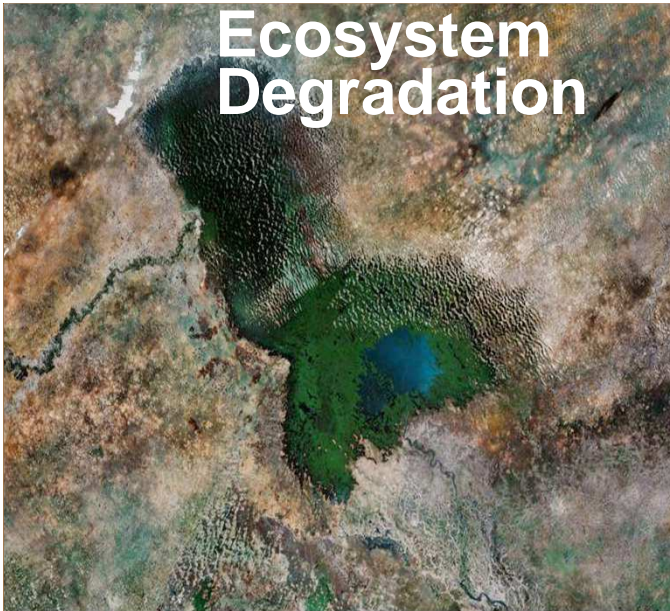
**This can only be achieved with timely, coordinated observations!**



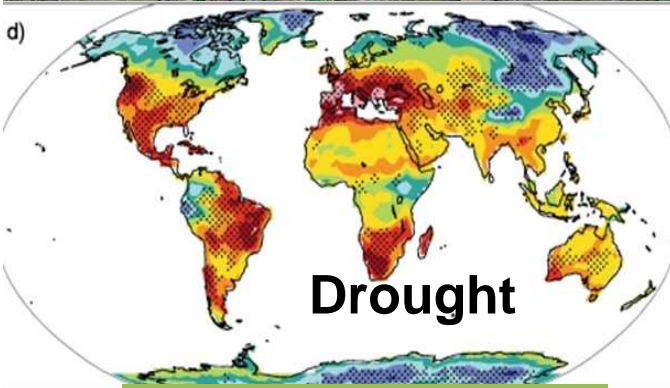
## **African Water Cycle Coordination Initiative: contributing to GEOSS (first AfWCCI Symposium)**

**Participants considered convergence and harmonization of observational activities, techniques, interoperability arrangements, and effective and comprehensive data management as the most fundamental elements that can be addressed under the GEOSS framework, including activities, programs and guidelines under UN agencies and non-UN agencies (AfDB, ESA, JAXA, NASA etc.).**

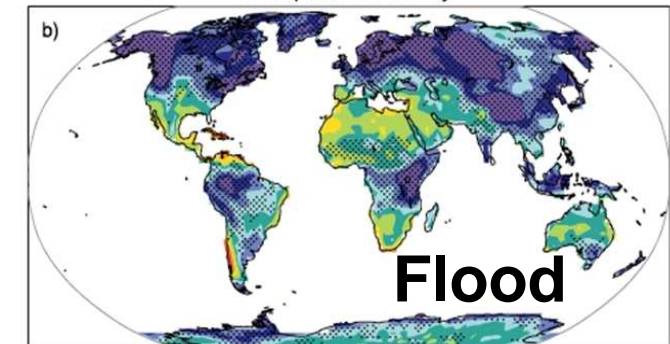
***from the 1<sup>st</sup> African Water Cycle Symposium in Tunis***



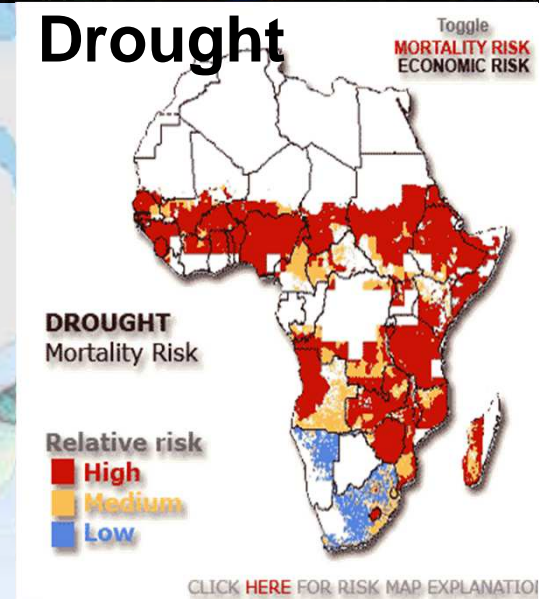
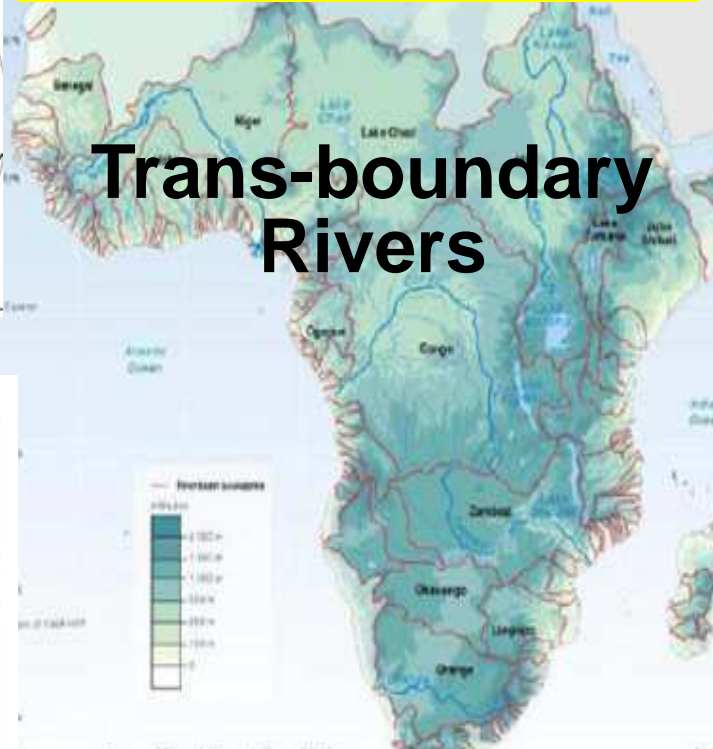
**GEOSS**  
*African Water Cycle Coordination Initiative*



**Climate Change**



Precipitation intensity

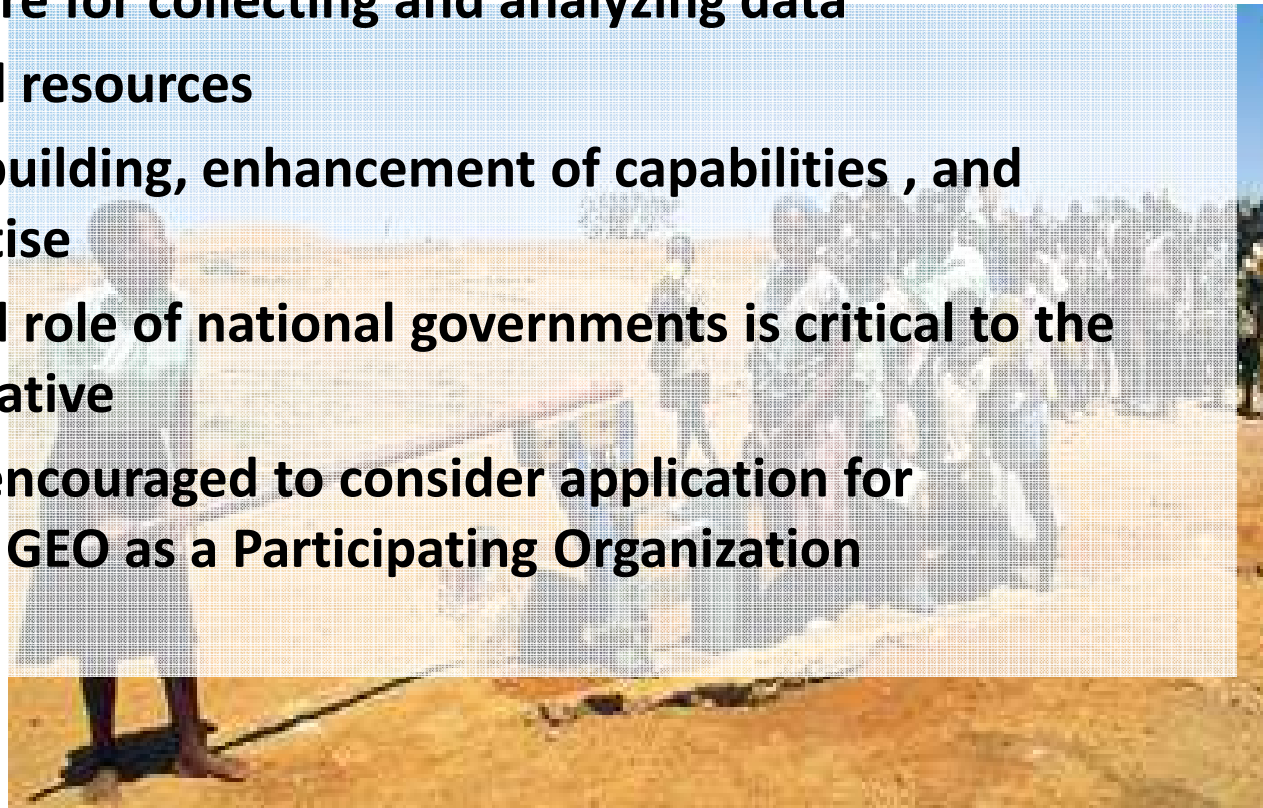




# 2nd GEOSS African Water Cycle Symposium

**Key messages regarding challenges facing Africa in the water sector:**

- **lack of access to data and data sharing**
- **lack of infrastructure for collecting and analyzing data**
- **lack of funding and resources**
- **need for capacity building, enhancement of capabilities , and retention of expertise**
- **political buy-in and role of national governments is critical to the success of any initiative**
  - **African Union encouraged to consider application for membership in GEO as a Participating Organization**



## **Expected outcome:**

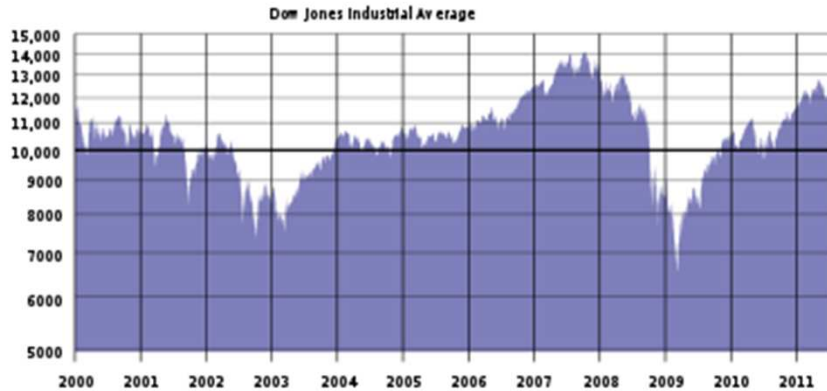
Development of the AfWCCI Implementation Plan

**Background:** The third African Water Cycle Coordination Initiative (AfWCCI) workshop is occurring at a critical juncture in the development of the Initiative.

Interest is growing within several Development Agencies in supporting Sustainable Development through AfWCCI projects as studies related to specific African basins are maturing. In addition, through CEOS, a broader base of support is developing among major space agencies throughout the world.



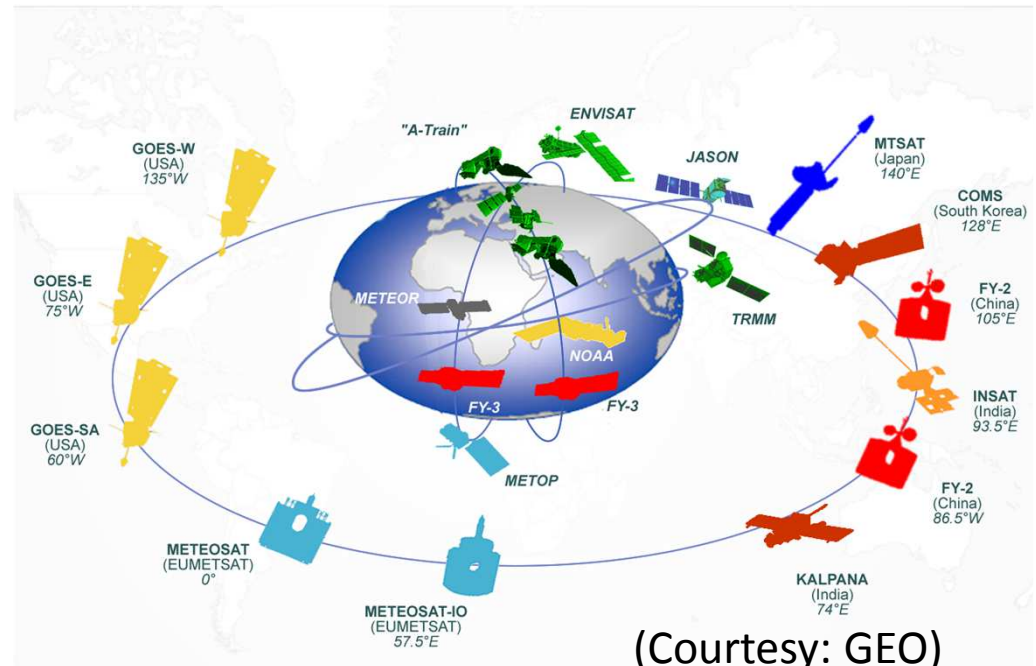
# Why we should move forward now



On Feb. 1, 2013, the DOW JONES index went above 14,000 for the first time since 2007. Similar gains are occurring in other countries.

(I.E., There is more money available to support development in Africa.)

The number of satellites observing elements of the global water cycle is at an all-time high

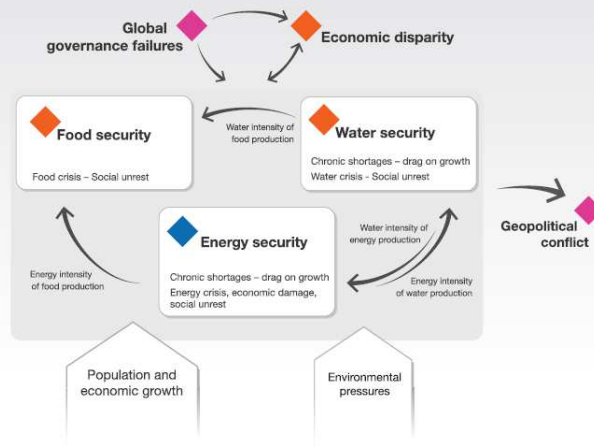


# Key science issues that have been identified:

Reducing vulnerability to natural hydrometeorological hazards



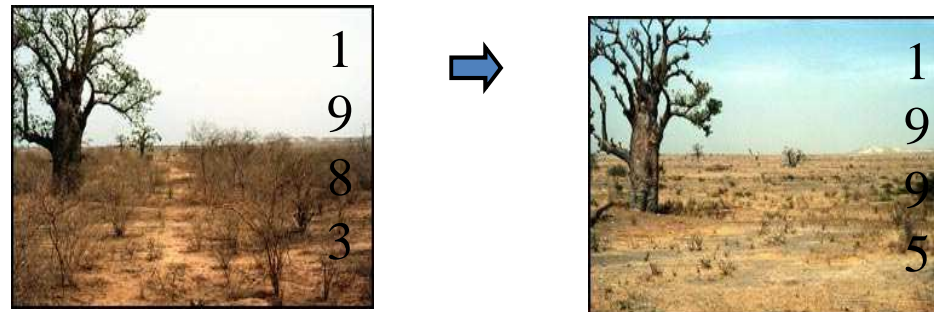
Figure 8 System diagram for risks associated with the water-food-energy nexus



Source: World Economic Forum

Contributing to improving water availability to address the water-energy-food (WEF) security nexus.

Adaptation to climate change to reduce its impacts on basins.

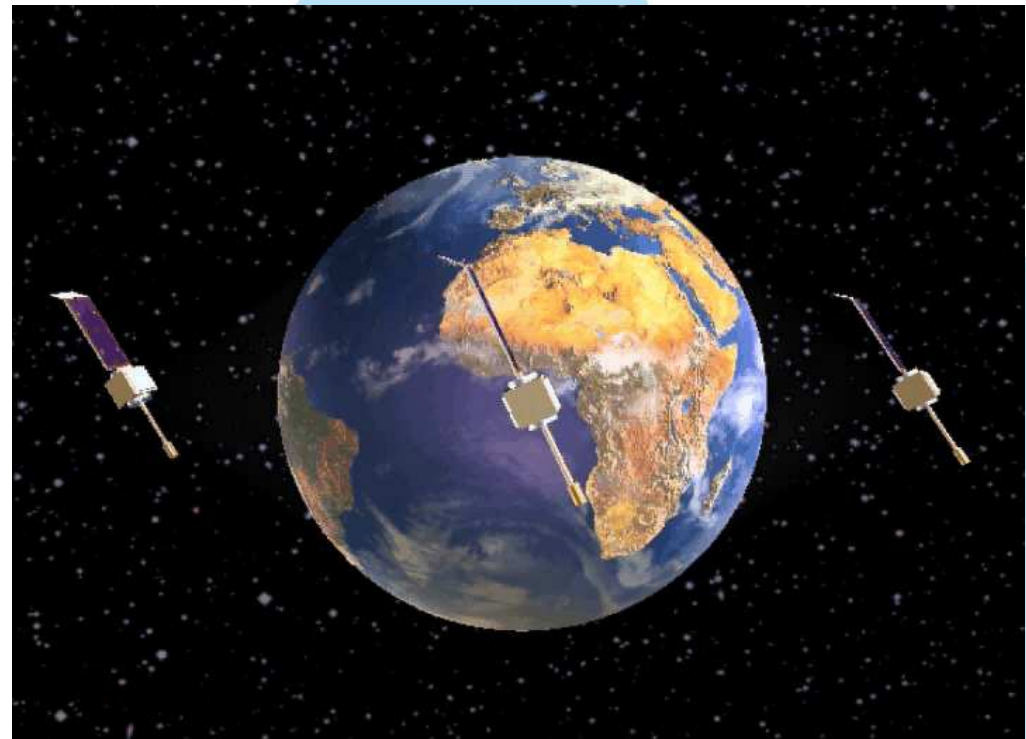


Source : EROS Data Center International Program, U.S. Geological Survey

## A New Planning Model: the Anthropocene Age

**“The human population will approach ten billion within the century. We spread our man-made ecosystems, including “mega-regions” with more than 100 million inhabitants, as landscapes characterized by heavy human use — degraded agricultural lands, industrial wastelands, and recreational landscapes — WHICH become characteristic of Earth’s terrestrial surface. We infuse huge quantities of synthetic chemicals and persistent waste into Earth’s metabolism. Where wilderness remains, it’s often only because exploitation is still unprofitable.**

**The ICSU “Future Earth” programme provides an ideal opportunity to bring water to the centre of discussions about global change. AfWCCI provides an excellent opportunity for demonstrating how observations and science can work together to address urgent problems related to water security and human well-being.**



## **Day 1: Gathering information through ~33 presentations**

## **Day 2: Developing the Implementation Plan**

Strategy for moving from river basins to Africa

BO Groups 2

Broader plan that considers that the contributions of related programmes (TIGER, NASA)



Specific Basin implementation plan and projects

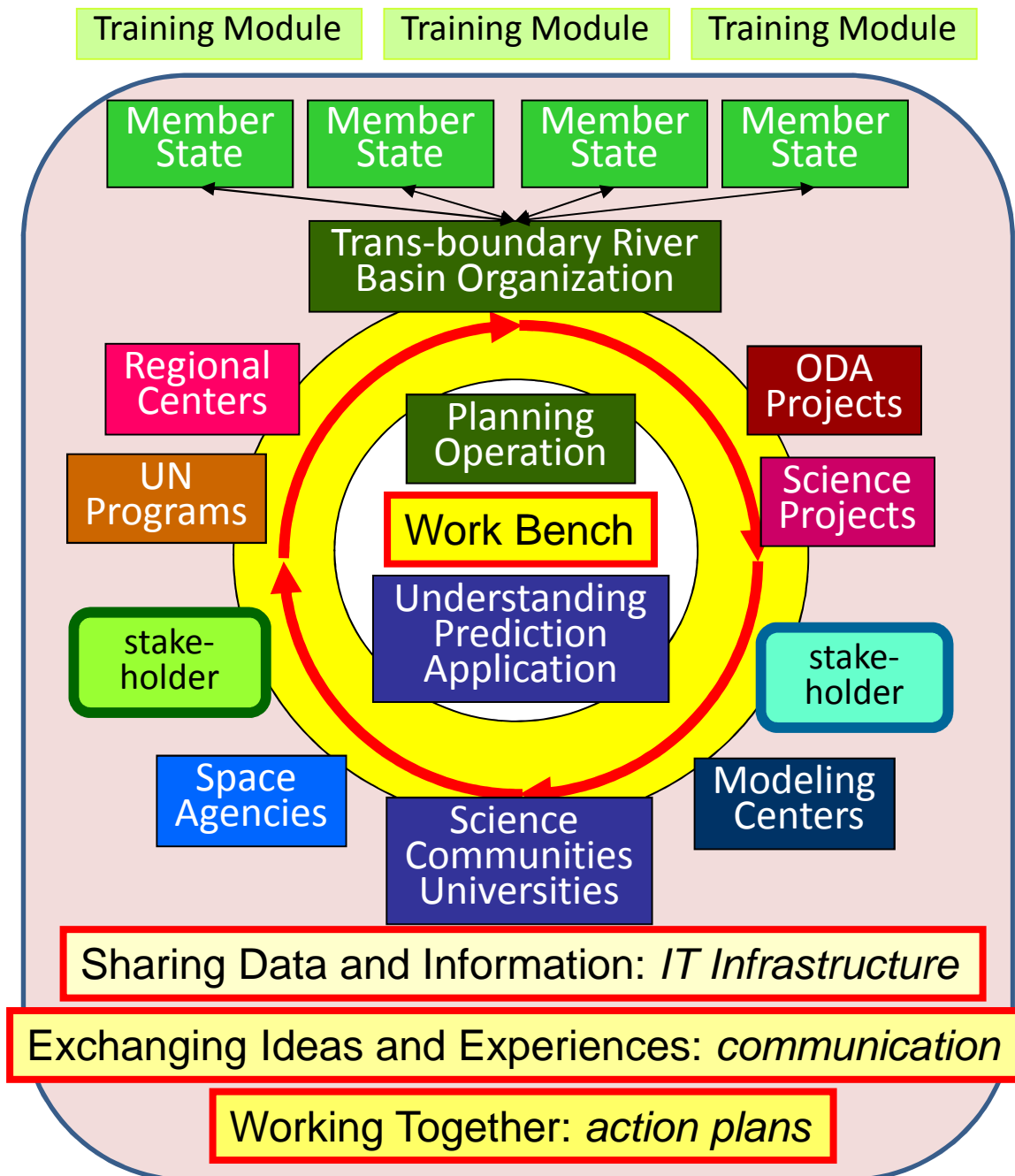
BO Groups 1

Two year – development plan

Three year – plan to operationalize the system

Follow-on – making the system sustainable

# Sustained Educational Framework (universities)



## Implementation Planning

### 1. Demonstration Identification

- Participating RBOs:
- Targets:
  - ✓ management
  - ✓ science/technology

- Partners
- Schedule

### 2. Agreement for demonstration

### 3. Demonstration

- Data registration
- Model development
- Data Integration and analysis

### 4. Demonstration evaluation

- 2<sup>nd</sup> Workshop
- 2013-2014 work plan

### 6. Funding proposal

- Plan completion including  
coordinated capacity building  
programs

### 8. Plan approval

- 4<sup>th</sup> Symposium

## **The Vision:**

(Development of Integrated Information Systems for Water Management in Africa):

This chapter would provide the rationale for the AfWCCI and its information system in terms of the benefits it would provide for water and related decision-making in Africa.

## **Water management and Science Issues:**

This chapter would outline the research and innovation that will be required to bring the technical advances being made in remote sensing and information systems to water managers in Africa. The Basin scale initiatives would be directed at transboundary basins. The linkages will be primarily through building capacity directly in national programs and Basin authorities. Elements of the system would/could include: The Water Cycle Integrator; appropriate TIGER projects and NASA SERVIR and WISP systems

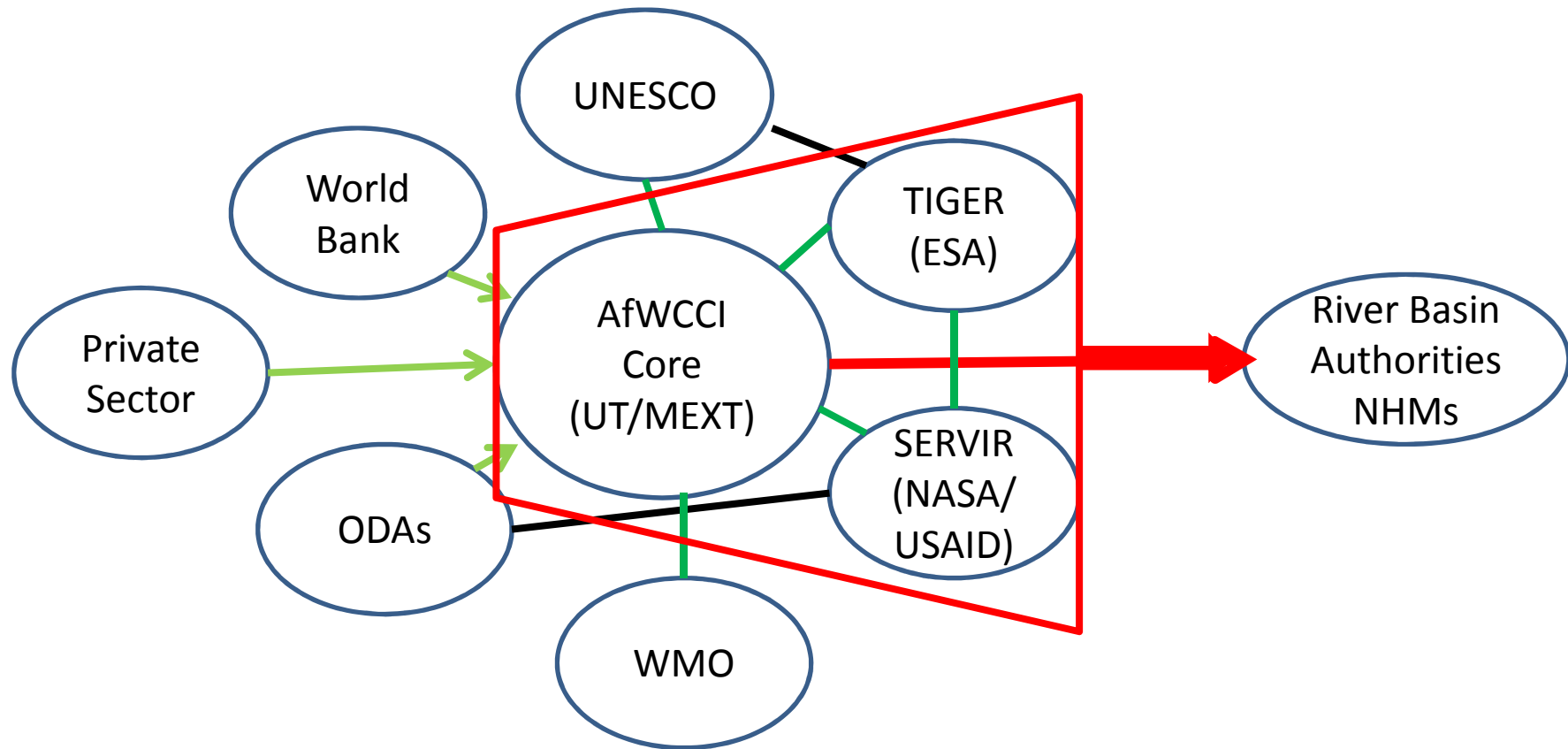
## **Value of Integration for water management at a Basin level**

Based on the Water Cycle Integrator and IWRM, discuss how different components of the water cycle could be integrated to address basin-specific water management problems.

## **Building on national and international programs and systems**

This chapter would link the Water Cycle Integrator to different national and international programs to demonstrate its benefits in each selected basin.

# Elements in the AfWCCI Implementation Plan



## **Integration across disciplines at the basin level**

This chapter would outline a strategy for linking between water issues and other issues within a basin. Expanding the applications of the WCI would be part of this strategy.

## **Towards integration across the continent**

This chapter would describe strategies for scaling up the results achieved in a few basins to the whole of Africa. Gaps in the existing infrastructure and policy across continent would be identified and approaches proposed.

## **Summary of contributions and building blocks**

This chapter would include an analysis of the capabilities that exist and how these could be combined to deliver on the integrated system.

(Basins first. Africa second)



# AfWCCI Implementation plan should provide a Framework for Africa

The knowledge and examples of the benefits of GEO and GEO projects should be Communicated and demonstrated throughout Africa.

