

Executive Summary of the 2nd GEOSS African Water Cycle Symposium
Addis Ababa, 23-25 February 2011

As a follow-up to the 1st Global Earth Observation System of Systems (GEOSS) African Water Cycle Symposium (Tunis, 2009) at which the participants recognized the commonality and regionality of water-related issues and socio-economic impacts caused by water-related disasters in Africa, the 2nd GEOSS African Water Cycle Symposium was convened at the United Nations Conference Centre in Addis Ababa, Ethiopia, on 23-25 February 2011 to explore making use of the international Group on Earth Observations (GEO) framework to develop a plan for an “African Water Cycle Coordination Initiative.” More than 70 participants, including representatives from 21 African nations and River Basin Authorities as well as North America, Asia, and Europe met to consider how GEOSS could provide fundamental services to support water management in Africa, including convergence and harmonization of observational activities, new techniques, interoperability arrangements, and effective and comprehensive data management to strengthen the various on-going and planned water-related activities in Africa.

In opening remarks, the African Ministers' Council on Water (AMCOW) noted that, according to the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report, the continent of Africa is one of the most vulnerable places on Earth with respect to the impacts of climate change. AMCOW shares the findings from the 1st Symposium therefore welcomes the collaboration with GEO and shares its conviction that Earth observation coordination is needed to improve efficiency and effectively respond to these water-related issues. The United Nations Economic Commission for Africa (UNECA) stressed that achievements towards the Millennium Development Goals (MDGs) are falling short, particularly with regards to the water sector. UNECA therefore congratulated the Symposium participants for their efforts at fostering better use of Earth observations in Africa, necessary to accelerate progress towards sustainable water development. Finally, the Ethiopian Ministry of Water and Energy observed that the nation of Ethiopia was no stranger to the impacts of extreme weather events. Moreover, adverse impacts in Ethiopia could have ripple effects with respect to neighboring countries, due to transboundary nature of major rivers. Thus, proper river basin stewardship requires high-level management and multi-national cooperation, which in turn implies the capacity to share information should be developed and enhanced.

A series of keynote presentations as well as reports from river basin authorities further illustrated the water-related needs and challenges facing Africa, and how GEOSS can serve as a framework for delivering observations, services, data integration and capacity building in support of informed decision-making to respond to these challenges. Over the 2 days of presentations, the key messages with respect to the challenges facing Africa in the water sector were summarized as:

- lack of access to data and data sharing;
- lack of infrastructure for collecting and analyzing data;
- lack of funding;
- need for capacity building, enhancement of capabilities , and retention of expertise;
- political buy-in and role of national government is critical to the success of any initiative;

Breakout groups met to identify current gaps with respect to individual/institutional/infrastructure capacities across Africa to respond to these challenges, and to consider specific steps to address them. The groups concluded with the following recommendations:

1. Increased African membership in GEO is encouraged in order to help address issues of Earth observation coordination, data access/sharing, and enhanced capacity building across the continent.
2. Given its preeminence in representing the interests of African nations in intergovernmental organizations, the African Union is encouraged to consider joining GEO as a Participating Organization.
3. There is an urgent need to increase country commitment by demonstrating the benefits of cooperation under the GEO framework.
4. For governments that are GEO Members as well as part of a basin authority, guidance is needed in effectively applying GEOSS Data Sharing Principals.

5. Pilot projects within specified transboundary basins could be a first step towards improved cooperation and data sharing, as well as demonstrating increased use and application of Earth observations for effective management
6. Priority should be given to designing a project that examines how data for a particular transboundary basin are shared among nations. It is further recommended that at least one basin in which data access/sharing is successful be chosen to serve as an example of best practices.
7. An information system should be established that would provide data and information for several River Basin Authorities (RBAs) and initiatives in both near-real-time and historically, in Africa. In turn these RBAs should serve as a test-bed for interoperability, validation data, model and technique development. In order to fully demonstrate the value of information it is recommended that at least two basins should be selected where there are tensions between different political boundaries of the basin so the benefits of a shared data system will become evident. The system should be built on a paradigm that incorporates issues of IWRM, climate change, biodiversity, health and development perspectives.
8. A home page (possibly similar to CIEHLYC at watercycleforum.com or the TIGER homepage) should be developed and managed as a step in establishing an AfWCCI Community of Practice (CoP). This site should serve as an information clearinghouse for Water-related projects in Africa that have the potential to utilize GEO information and principles. This web site/portal should not only include information for professionals but also information that can be used by the public.
9. AfWCCI should develop a “workbench” whereby scientists and professionals can together to test out and validate tools and make them freely available to experts for informed water resource decisions. Make use of OGC to ensure formats, standards, and tools are open source.
10. An inventory and assessment of the various services, projects and plans in water-related sectors should be developed along with the identification of gaps and needs for future action by GEO and the AfWCCI.
11. AfWCCI should open a dialogue with development agencies to assist them in making decisions on funding projects and to work with them to launch initiatives that will advance AfWCCI plans in specific basins.
12. The private sector should be included in appropriate ways in partnerships in select pilot projects of AfWCCI, as they often have resources available to allow for infrastructure improvements. Lack of adequate infrastructure is particularly acute in Africa, and partnering with the private sector in this regard may provide a viable model of interaction between GEO and the private sector.
13. AfWCCI should structure an educational component that takes into consideration the capabilities of ITC and the German plans for a new centre/university that will provide PhD programmes in water.

Taking these recommendations into consideration, the Symposium participants decided that the African Water Cycle Coordination Initiative (AfWCCI) should focus initial efforts on two river basin authorities/initiatives, with the specific aims to enhance current capacity through improved data collection, analysis, integration, and sharing among the nations comprising the river basins. The GEO framework will also be utilized to develop the political consensus needed to effectively coordinate the trans-boundary aspects of the chosen river basins.

The timeline for elaboration of the AfWCCI implementation plan consists of:

- **March 2011:** preliminary draft of 2nd GEOSS African Water Cycle Symposium report (This has been delayed by the recent earthquake in Japan).
- **April 2011:** reorganization of AfWCCI Task Team into steering committee for 3rd GEOSS African Water Cycle Symposium.
- **Maz 2011:** submission of 2nd GEOSS African Water Cycle Symposium report to Preliminary African Caucus consultation in preparation for RIO+20.
- **August/September 2011:** workshop to select two candidate River Basins for AfWCCI implementation.
- **November 2011:** AfWCCI submission to Broad African Caucus consultation in preparation for Rio+20, organized by UNECA.
- **December 2011/January 2012:** 3rd GEOSS African Water Cycle Symposium.
- **March 2012:** present AfWCCI at World Water Forum during side-event on Africa; solicit AMCOW/African caucus support to introduce into Ministerial Declaration.
- **June 2012:** submission of AfWCCI to Rio+20.
- **August 2012:** announce AfWCCI at World Water Week.