

Interim Report for CAPaBLE Project
Project Reference Number: CBA2008-12NMY-Ishida

Part One

1. Project Title

“The **Global Earth Observation System of Systems Asian Water Cycle Initiative Observation Convergence and Data Integration (GEOSS/AWCI/OCDI)**” for water cycle research and water resources management under climate change in Asia.

2. Project Leader Details: Name, Institution, Email Address, Website

Mr. Chu Ishida, Japan Aerospace Cooperation Agency (JAXA), Japan, ishida.chu@jaxa.jp,
<http://www.jaxa.jp>

Dr. Toshio Koike, Professor, University of Tokyo, Japan, tkoike@hydra.t.u-tokyo.ac.jp

3. Collaborating Countries

The GEOSS/AWCI/OCDI involves many Asian countries including but not limited to: Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Japan, Korea, Lao, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Uzbekistan, Vietnam.

4. Non-technical summary (500 words)

In recognition of the need for accurate, timely, long-term, water cycle information as a basis for sound and effective water resources and risk management and with regards to the ongoing initiatives pursuing to meet this need, the GEOSS/AWCI/OCDI project was initiated. The project follows-up on the data focus of the IIWaDATA project (ARCP2007-02CMY) and is contributing to the development of a sustainable scheme for water cycle data collecting, sharing, exchanging, and management at the regional level in Asia in cooperation with national governments, institutes and research communities and also international organizations.

The GEOSS/AWCI/OCDI project involves 19 participating countries and 18 river basins in the Asia-Pacific region, and develops an information system of systems for promoting the implementation of integrated water resources management (IWRM) .

Through a series of meetings, the IIWaDATA project established a mutual consensus among the participating countries and international organizations that defines data sharing and exchanging policy and responsibilities for data processing, management and archiving. This strong cooperative framework has evolved into a large regional initiative recognized by the Group on Earth Observations (GEO) as a GEOSS activity: GEOSS Asian Water Cycle Initiative (AWCI). The GEOSS/AWCI/OCDI project has been further significantly contributing to the development of the Data Integration and Analysis System (DIAS) that was launched in 2006 as part of the Earth Observation and Ocean Exploration System, which is one of five National Key Technologies defined by the 3rd Basic Program for Science and Technology of Japan.

Part Two

1. Project Objectives

The aim is to develop an information system of systems for promoting the implementation of integrated water resources management (IWRM) through data integration and sharing as a basis for sound decision making of national water policies.

The project contributes to the AWCI objectives that include:

1. To develop Integrated Water Resources Management (IWRM) approaches;
2. To share timely, quality, long-term information on water quantity and quality, and their variation as a basis for sound national and regional decision making;
3. To construct a comprehensive, coordinated and sustained observational system of systems, such as prediction systems and decision support capabilities, under the GEOSS;
4. To develop capacity building for making maximum use of globally integrated data and information for local purposes as well as for observation and collecting data.

2. Relevance to the APN's Science and Policy Agendas

Science Agenda – GEOSS/AWCI/OCDI focuses on specific science issues related to climate, atmosphere/land interactions, and impacts of water cycle variability on resources as a way of addressing capabilities for sustainable development. By surveying existing and the development of new methods related to these scientific and societal issues, GEOSS/AWCI/OCDI will contribute to the improvement of the effectiveness of transfers of scientific knowledge to decision-makers in the Asian region.

Policy Agenda – By cooperating with other institutions and bodies that address issues relating to science policy interactions such as WMO, ICSU, IOC, UNESCO, and others, the project is embracing a specific APN strategy formulated under its Policy Agenda.

3. Work undertaken and results to date

A kick-off plenary meeting, that included AWCI International Coordination Group (ICG) members, was held at the occasion of the 4th Conference of the Asia Pacific Association of Hydrology and Water Resources (APHW), in Beijing, China, 3-5 November, 2008. A full day special session on AWCI was held on 5 November and the 3rd meeting of the AWCI ICG followed at the same venue on 6 November. The 3rd AWCI ICG meeting reviewed the progress of the AWCI activities, with a focus on the AWCI Demonstration Projects (DPs) for 18 river basins in the participating countries. It was decided to establish the fourth WG on Climate Change Impacts and Adaptation. WGs identified priority activities and agreed to develop their implementation plan at next ICG meeting in Kyoto. In addition, two related capacity building workshops were held in Indonesia (July) and Bangladesh (August) that addressed rainfall downscaling, hydrological modeling, flood risk management, etc.

The 4th AWCI ICG meeting was held on 6-7 February 2009, in Kyoto, in conjunction with the 3rd GEOSS Asian Pacific Symposium. In the GEOSS AP Symposium special “water” sessions, a possibility for expanded collaboration among the AWCI current activities focused on water cycle issues and related socio-benefit areas of GEOSS were sought. Four target topics: 1. Typhoon, cyclone and induced floods, 2. Drought, 3. Cold surge and 4. Snow, glacier and GLOF were identified. The 4th AWCI ICG meeting acknowledged a good progress in the AWCI Demonstration Projects data and metadata submission, and data quality check activities. A good progress was also made in the AWCI capacity building program. An on-line repository system on the AWCI capacity building activities of member organizations was developed by UNU. The AWCI WGs discussed their concrete activities in the 2009-2010 timeframe.

The 5th AWCI CG meeting was held on 15-17 December, in Tokyo. A very good progress of the AWCI Demonstration Projects was reported as shown in the following summary table:

Station Name	Basic info.	Data Upload	Quality Control	Metadata
Bangladesh	Complete	Complete		
Bhutan	Complete	Complete	1%	
Cambodia	Complete	Complete	34%	
India	Complete	Complete	88%	
Indonesia	Complete	Complete	32%	
Japan	Complete	Complete	100% (Complete)	Ready
Korea	Complete	Complete	100% (Complete)	Ready
Lao				
Malaysia	Complete	Ongoing		
Mongolia	Complete			
Myanmar	Complete	Complete	100% (Complete)	Ready
Nepal	Complete	Complete	100% (Complete)	Ready
Pakistan	Complete	Complete		
Philippines	Complete	Complete		
Sri Lanka	Complete	Complete	100% (Complete)	Ready
Thailand	Complete	Complete	100% (Complete)	Ready
Uzbekistan	Complete	Complete	2%	
Vietnam	Complete	Complete	1%	

Expanded activities of the AWCI WGs for the climate disaster areas; 1. Typhoon, cyclone and induced floods, 2. Drought and 3. Snow, glacier and GLOF were discussed. It was agreed to develop an implementation plan for these activities. It was also agreed to proceed with filling the AWCI capacity building repository with member organizations requirements and resources, and registering necessary

capacity building modules. The training workshop on the application of remote sensing products on drought monitoring in Asia was also held on 17-18 December.

4. Self evaluation against project objectives

The project has been very successful in executing the AWCI Implementation Plan (<http://monsoon.t.u-tokyo.ac.jp/AWCI/>) and expanding its activities to cope with the climate change issues in the Asia-Pacific region. Meta-data and data collection and data quality check are progressing well. Development of training modules and their integration for the demonstration projects are being implemented. Applications of newly developed distributed hydrological models to the demonstration river basins showed significant advantage of such modeling technique for water resource management and disaster risk reduction.

5. Publications (to date and/or pending): None

6. Acknowledgments

In addition to the support from APN, which made this project possible, we would like to thank the following organizations and institutions for their scientific and technical contribution as well as financial and in-kind support to the activities undertaken by this project and for their continued collaboration with AWCI: Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan; University of Tokyo, Japan; Japan Aerospace Exploration Agency (JAXA), Japan; United Nations University (UNU); the International Centre for Water Hazard and Risk Management (ICHARM), Japan; Asian Institute of Technology (AIT), Thailand; Kasetsart University, Thailand.