

Summary Report of the 10th Asia Water Cycle Initiative International Coordination Group (AWCI ICG) Meeting

held at the Kokusai Fashion Center in Tokyo, 28 May 2014

Meeting website: http://monsoon.t.u-tokyo.ac.jp/AWCI/meetings/Tokyo_May2014/awci/index.htm

The 10th AWCI ICG Meeting was planned and held as a half day session in conjunction with the 7th GEOSS Asia-Pacific Symposium and the 10th GEO Integrated Global Water Cycle Observation (IGWCO) Community of Practice Meeting. The ICG members deliberated on AWCI structure rearrangements for the needs of AWCI Phase 2 activities following the three main items of the agenda:

1. Review of Activities
2. Identifying Core Activities
3. Governance of the Initiative Framework.

The meeting took place after the adjourn of the 7th GEOSS AP Symposium that focused on inter-linkages among disciplines and that also organized a parallel session dedicated to AWCI as the working group on Water. Accordingly, the outcomes of this Symposium were reflected in the ICG meeting discussion. Also, the results of the GEOSS Asia-Africa Water Cycle Symposium that was held in Tokyo in November 2013 were reiterated and referred to including the Project Design Matrices proposed by individual AWCI member countries at that occasion.

The meeting discussions were supported by a summary presentation provided by Prof. Toshio Koike, which can be downloaded in the pdf format at the mentioned meeting website:

http://monsoon.t.u-tokyo.ac.jp/AWCI/meetings/Tokyo_May2014/awci/presentations.htm.

The individual parts of the presentation were followed by discussion.

1. Review of Activities

This session summarized the process of Phase 2 planning that started in November 2011 with intention to focus on implementation of research outcomes into operational use and resulted in the set of Project Design Matrices (PDMs), which were presented at the GEOSS Joint Asia-Africa Water Cycle Symposium in Tokyo, November 2013 (<http://monsoon.t.u-tokyo.ac.jp/AWCI/AAWCS2013/index.htm>). The outcomes of this Symposium were presented with recommendations for further refinement of PDMs and suggestions of approaches towards successful PDM implementation. A range of activities relevant to this process were identified that reflect current AWCI status and capacities as well as directions in relevant international communities including GEO and UN institutions.

1.1 Project Design Matrices

PDMs are national proposals that need **commitment and technical support from national agencies and organizations** since the planning phase to assure harmonization of different responsibilities in a country and access to necessary local data from relevant sectors and disciplines.

The overall goal of PDMs is contribution to societal benefits, which requires **mainstreaming** into national priorities and plans. To assure this, capabilities and expected benefits should be appropriately demonstrated and proposals **well documented** and oriented towards national strategic objectives including **Climate Change Adaptation and Water Disaster Risk Reduction**. One of the key contribution to governments is improving understanding the phenomena and **raising public awareness** of the issues.

The implementation of the activities considers financial support from international funding agencies (JICA, ODAs, World Bank) and thus PDMs should reflect on the **areas of interest** of these donors. AWCI serves as a **regional and topic-oriented consortium** of the member countries to facilitate the procedure of PDM development and recognition of these PDMs by donors.

1.2 Frameworks for collaboration

Several international frameworks and interest areas were mentioned that are highly relevant for AWCI Phase 2 goals. These should be considered when planning particular activities as well as refining the PDMs – it will help the recognition of the AWCI activities by governments and hence the mainstreaming into action.

- a. **Climate Change** theme and climate change adaptation: demonstrate contribution of AWCI activities to climate change adaptation efforts.
- b. **UN Water and Sustainable Development Goals** (SDGs): demonstrate how the EO can be exploited to realize SDGs in the field of water (“EO for Water” activity).
- c. **Hyogo framework for action (disaster risk reduction)**: need to input scientific component including role of EO for disaster risk reduction. This process is now ongoing and includes the Tokyo Conference on International Study for Disaster Risk Reduction and Resilience that will be held in Tokyo, Japan, 14 – 16 January 2015. This event will result into the scientific community input into the UN World Conference on Disaster Risk Reduction that will take place in Sendai, Japan, 7 – 14 March 2015. AWCI input into the January science is desirable.
- d. **GEO and GEOSS**: AWCI to promote exploitation of EO in the abovementioned frameworks; AWCI is a **regional bridging function** among countries and international/global frameworks. In addition, AWCI will also promote interlinkages among socio-benefit areas (SBAs).

1.3 Infrastructure

Data sharing is essential part of the AWCI activities and it needs to be supported by **appropriate infrastructure**. Data sharing protocols and seamless routes are requested: (i) within government departments, (ii) among agencies and citizens, (iii) government to government, and (iv) to the world. Implementation of the desirable data sharing capabilities and infrastructure may require or be facilitated by:

- a. Establishing of a consortium for data sharing within countries and starting with an example that may initiate “snowball effect” as it happened with Landsat data;
- b. Improvement of basic infrastructure (internet) but at the same time, considering adaptation of the technologies for available facilities (mobile phones);
- c. Coordinated training and capacity development, education – involvement of universities in the process – integrated and interdisciplinary approach, provision of scientific knowledge and tools for data processing and analysis (e.g. downscaling).

1.4 GEOSS AP Symposium highlights and on-going and planned country activities addressing interlinkages

In addition to the overview of the outcomes of the Joint GEOSS Asia Africa Water Cycle Symposium in November, brief summary of the just adjourned 7th GEOSS AP Symposium was provided (https://www.restec.or.jp/geoss_ap7/index.html). The Symposium focused on the theme of Benefits for Society from GEOSS towards **Sustainable Development Goals** as well as the GEOSS contribution to the **trans-disciplinary initiatives such as Future Earth**. The potential and advantages of the trans-disciplinary approach to solve the environmental issues was demonstrated at the special panel session dedicated to the **case studies in Cambodia** and surrounding coast that allowed for specific insight for trans-disciplinary and trans-SBAs

interlinkages and evoked suggestions for concrete collaboration among disciplines/SBAs. The continued need for **sustainable in-situ observation** networks was resonating through all the presentations and discussions as an indispensable basis for research as well as operational activities for disaster risk reduction and sustainable development. At the same time, the **benefits of earth observation data** in general for these (and other UN) targets were demonstrated (especially with new satellites launched and in preparation), while the **barriers to mainstreaming** advanced approaches were discussed and some strategies to overcome them articulated. The Symposium resulted into a “Tokyo Statement” document that can be downloaded from the Symposium website at: https://www.restec.or.jp/geoss_ap7/index.html. It highlights the need to recognize the benefits of EO for UN activities and the need to **harmonize research and operational activities**. Addressing these needs is inherent part of AWCI Phase 2 plans.

In addition, four examples of the AWCI country activities that are considering or have a potential to address the interdisciplinary interlinkages were introduced at the GEOSS AP Symposium, the Working Group 1 (AWCI) parallel session, namely activities in Indonesia, Pakistan, Sri Lanka, and Vietnam (the AWCI Cambodia activities were presented at the plenary panel session of the Symposium). These presentations were summarized at the ICG session and resulted in a set of items recognized as **common issues, targets and approaches** that are in line with the more general highlights of the Asia-Africa Symposium mentioned above and that should be regarded when planning Phase 2 activities:

- a. **Needs and Issues:**
 - Observation and data availability: Improving hydromet stations (the necessity must be understood by governments), in-situ event data, health data, water quality data, and socio-economic data
 - Comprehensive land management
 - Visualizing capability of new risks and their social impacts to be prevented
- b. **Linkage to Regional and Global Coordination Framework:**
 - Remote sensing, model linkage
 - UN, UN water initiative, donors, global partnership
- c. **Building Capacity:**
 - Educating climate change - existing resident involvement project: ADB, APN, SAFE
 - Early warning
 - Adaptation package: change of “loser-to-gainer” ratio
 - Sharing research outputs with society
- d. **Planning Strategy:**
 - Integrated research proposal
 - Residents participation survey: crowd-sourcing
 - Support to develop government strategy
 - Holistic view by end-to-end cooperation

2. Phase 2 Core Activities

Resulting from the planning discussions and actions up to present that were based on country needs and issues and considering the latest developments in the climate and water cycle science as well as current strategies of global networks, the Core Activities of AWCI Phase 2 were outlined and agreed at the meeting. These include:

- a. Country Project development based on PDMs: AWCI will support e.g. stakeholder meetings as a regional partner, provides expertise and documentation.
- b. Development of Inter-linkage framework: organizing workshops, inter-agency stakeholder meetings, trans-disciplinary scope considered in projects design.

- c. Regional core collaborative activity: Focus on development of **early warning capacity** (on operational basis) as contribution to Climate adaptation efforts, including current risk management and future risk management. This will be accomplished in three steps:
1. Enhance spatial distribution of rainfall monitoring (satellite integrated rainfall product (GPM) will be calibrated (off-line) by in-situ observations to improve the accuracy)
 2. Implement algorithms and infrastructure for producing and dissemination of near-real time rainfall information (real-time calibration algorithm, telemetric system or transmission by via mobile phones).
 3. Early warning modeling systems for flood and drought based on outcomes of previous steps. In addition, soil moisture observation is essential for drought predictions – the activity will also include efforts to improve in-situ soil moisture observation network, which is key for validation of satellite data (GCOM-W). This data are provided by JAXA free of cost upon specific application. Also, seasonal drought prediction by GCMs is still a challenging task especially in some regions – affected by large-scale oscillations like MJO- research activities to improve this are on-going.

The participants also discussed the strategy of implementation of regional core activity and more concrete steps. It was highlighted that these targets are in line with a number of country PDMs and positive outcomes of the first stages of the regional activity (c.1 – c.3) will be very helpful for having the PDM approved by governments and/or donors. Therefore the PDM efforts and regional collaborative activity tasks should be pursued in parallel manner.

The regional core activity expects **close collaboration with JAXA** in terms of precipitation and soil moisture data. This collaboration will bring mutual benefit as the in-situ data from countries are valuable for JAXA's satellite products calibration and validation. In addition, through the planned AWCI activities, JAXA's datasets will be used for societal benefits. JAXA representatives mentioned that currently, JAXA and ADB were implementing projects for early warning on floods in Bangladesh, Philippines, and Vietnam; JAXA and UNESCO were collaborating on another flood project in Pakistan; and JAXA was also involved in a drought early warning project in the Mekong Delta. These activities are relevant for the AWCI plans and should be regarded and its outcomes utilized as much as possible.

In addition, collaboration with WMO in terms of near-real time precipitation data was suggested (GTS network and its follow-up – advanced WMO information system)

The question of **funding** was raised in case of regional core activity. From past experiences it was suggested and agreed that firstly proposals would be submitted for funding of smaller-scale projects (e.g. establishment of a few telemetric raingauges or soil moisture observation stations) and the benefits would be well demonstrated, which would raise interest of governments and/or donors, who would then provide further investment for the activity. In other words, **funding will follow successful pilot accomplishments.**

The first action will be an **inventory of available in-situ raingauge stations** in countries that may be considered for the activity, i.e. data can be provided and shared for satellite product calibration and validation, and that are or may be providing near-real or real time data. Stations with a shorter observation interval are highly desirable. A questionnaire will be prepared for this purpose and circulated among the ICG members.

3. Governance of the AWCI Framework

The need of effective and sustainable governance and management structure of the AWCI framework was recognized and possible re-organization to suit the needs of the Phase 2 targets was discussed. This includes:

- International Coordination Group, which will hold regular meetings to report the activity progress and discuss the further steps and new possibilities.

- National Task Teams are necessary for implementing the country projects proposed in PDMs and to move toward operational applications. Establishment of national task teams will be assured by the ICG country representatives.
- Leading scientific team is not a firmly defined group but include scientist, members of academia and experts (even members of ICG and national task teams), who will provide scientific leadership for targeted activities.
- Working Groups will continue from the Phase 1 - they bring together “members” (countries) solving common specific topic, including experts in that field. Interaction among the groups will be promoted during the ICG meetings.

Also, it was agreed that involvement of stakeholders into the process is necessary and opportunities for dialog with them at national as well as international level should be assured. Meeting with stakeholders from all relevant disciplines is important for sharing the concept of inter-linkages and implementing in into praxis.

The efforts to assure funding for the framework management (meetings) will include proposal submission to the APN funding programmes to get support for regional core activities, which will also include ICG meeting opportunities. The AWCI Coordination Function (UT team) will cooperate with country leaders and inform them of the APN opportunities. In addition, closer collaboration with ODAs will be sought for (i) implementation of PDM activities (ICG, National task teams) and (ii) framework management (ICG, AWCI Coordination Function).

Also, the membership of the coordination and leading body was discussed. While it is desirable for the mainstreaming objectives to have linkages to decision-making levels in countries, the system of organization and responsibilities vary from country to country and thus it is not possible to define the most effective approach towards nominating a country representative. It was, however, agreed that the ICG should include one representative per country as it was during Phase 1. The current members are welcome and appreciated to serve further in this function as the team has been effective in its tasks. The continuity of the team felt as an important advantage for further implementation. In addition, interest in the technical aspects of the activities is critical for motivation and keeping momentum (interest of continued involvement and bearing the responsibilities). At the same time, the ICG members were asked to subsequently provide their further views on this considering local specifics and to suggest the best approach in case of their country.

The national teams will be nominated by each ICG country representative based on their particular project needs.

The leading scientific team will be also nominated according to the actual plans and foci.