GROUP ON EARTH OBSERVATIONS

AGENDAS FOR PARALLEL SESSIONS

WG1: GEOSS ASIAN WATER CYCLE INITIATIVE (AWCI)

Floods and droughts are a recurring problem in Asia. Rapid population and economic growth is straining existing water resources and the ecosystem. The expansion of urbanization and the climate change is considered to make considerable impacts on such a vulnerable region. The AWCI aims to develop an Integrated Water Resources Management (IWRM) by exploiting the Global Earth Observation System of Systems (GEOSS) to address the water-related issues described above.

The AWCI member country reports presented at the 8th AWCI meeting in Seoul in October 2011 showed a great progress in the AWCI demonstration projects and good preparedness of individual countries to step into the next phase that envisions further integration and inter-disciplinary collaboration through the GEOSS Water Cycle Integrator (WCI) concept of "work benches". Following this concept, the member countries have initiated preparation of a draft implementation plan for the 2nd stage of AWCI.

The objective of this breakout session is to introduce each draft implementation plan and to establish make an integrated cooperative framework among the member countries, the Earth observation communities, science communities and the related international activities.

AGENDA

Tuesday, 3 April 2012

Co-Chairs: **Richard Lawford** (GEO Water), **Syahril Badri Kusuma** (Institute of Technology Bandung (ITB)), **Toshio Koike** (The University of Tokyo)

09:30-09:40 **Opening GEOSS/AWCI Breakout Session**

- Opening Remarks — D. Cripe, *GEO Secretariat*

09:40-10:30 **GEOSS/AWCI Activity Reports** *10min. each*

1. Working Group Reports by Chair(s):
   - Flood WG K. Fukami, *ICHARM*
   - Droughts WG G. Rasul, *PMD*, I. Kaihotsu, *HU*
   - Water Quality WG P. Koudelova, *UT*
   - Climate Change WG M. Rahman, *BUET*
2. Capacity Building Activities by Lead(s): S. Herath, *UN Univ.*

10:30-12:30 **Brief introduction to Draft Implementation Plans: Part1**

5min. presentation + discussion

1. *Bangladesh:* M.A. Islam
2. *Bhutan:* K. Chophel
3. *India:* R. Kumar/S. Kaur
4. *Indonesia:* S.B. Kusuma
5. *Japan:* T. Koike
6. *Laos:* S.Pathoummady
7. *Malaysia* M.Z.M. Amin
8. *Mongolia:* G. Davaa
9. *Myanmar* : S. Lin
10. *Nepal:* S.K. Sharma
11. *Pakistan:* G. Rasul/B. Ahmad
12. *Philippines:* F. Hilario
13. *Sri Lanka:* G.R.A.S. Gunathilake
14. *Thailand:* T. Sukhapunaphan
15. *Uzbekistan:* I. Dergacheva
16. *Vietnam:* D.N. Tinh

12:30-13:30 ***Lunch Break***

13:30-15:15 **Inputs from Agencies** *15min. each including discussion*

1. Asia-Pacific Network for Global Change Research (APN) A. Takemoto
2. United Nations Educational, Scientific and Cultural Organization (UNESCO) T. Sonoda
3. Network of Asian River Basin Organizations (NARBO) T. Kawasaki
4. Japan International Agency (JICA) Y. Amano
5. Japan Aerospace Exploration Agency (JAXA) R. Oki
6. Japan Meteorological Agency (JMA) K. Onogi
7. International Centre for Water Hazard and Risk Management(ICHARM) K. Fukami

15:15-15:30 ***Break***

15:30-17:15 **Discussion towards an Integrated Cooperative Framework** *All*

- Common Targets and Fields:
- Regional Coordination Framework
- Linkage to Global Coordination Framework
- Building capacity
- Planning Strategy

17:15-17:30 **Closing GEOSS/AWCI Breakout Session**

- Session Summary
- Concluding Remarks

WG2: ASIA-PACIFIC BIODIVERSITY OBSERVATIOIN NETWORK (AP-BON)

The Global Biodiversity Outlook 3, published in May 2010, concluded that the 2010 Biodiversity Target, "to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level…", has not been met. All three components of biodiversity; genes, species and ecosystems, have been declining during the last decade. At the 10th Conference of the Parties, the Convention on Biological Diversity adopted its new Strategic Plan for Biodiversity, including the Aichi Biodiversity Target, for the 2011 – 2020 period. Also, a new science-policy interface, IPBES are now going to work to assess biodiversity and ecosystem services in various scales. More accurate evaluation and prediction of the status and change in biodiversity and ecosystem services at global, regional and national levels are required.

The Asia-Pacific Biodiversity Observation Network (AP-BON) was established in July 2009, aiming to promote networking of observation activities and evaluation and prediction of biodiversity in this region. To meet the increasing requirements to monitor the situation of biodiversity and ecosystems services, it is crucial to have better integration between remote sensing and on site observation. In this session, we summarize the existing activities and further possibilities in this field, and discuss the application in the implementation of AP BON activities.

AGENDA

Tuesday, 3 April 2012

Co-Chairs:	**Dr. Tetsukazu Yahara** (Professor, Kyushu University), **Dr. Eun-Shik Kim** (Kookmin University), **Dr. Tohru Nakashizuka** (Professor, Tohoku University)
09:30-10:20	**Introduction (Chair: Dr. Tohru Nakashizuka)**
09:30	Integration of remote sensing, GIS and ground surveys for assessing plant diversity loss in Southeast Asia
	Prof. Tetsukazu Yahara (Kyushu University)
09:55	Biodiversity information systems in Japan and Asia: Current status and perspective
	Prof. Motomi Ito (The University of Tokyo)
10:20	Information sharing through common species and protected areas platforms
	Dr. Sheila Vergara (ASEAN Centre for Biodiversity)
10:45	Remote sensing & GIS for biodiversity conservation in Indonesia
	Dr. Lilik Budi Prasetyo (Bogor Agricultural University)
11:10	Development of a biodiversity database and its current situation in Mongolia
	Dr. Tsolmon Renchin (National University of Mongolia)

11:35	Role of observation of biodiversity by remote sensing and ground Dr. Partha Sarathi Roy (Indian Institute of Remote Sensing)

12:00 – 13:00 Lunch

13:00	Satellite Ecology initiative for ecosystem function and biodiversity analyses Dr. Hiroyuki Muraoka (Gifu University)
13:25	Development of Geo-informatics system for monitor and analysis changes in biodiversity of the Doi Inthanon National Park, Thailand Dr. Surachai Ratanasermpong (Geoinformatics & Space Technology Development Agency)
13:50	Biodiversity monitoring and research in Chinese Ecosystem Research Network Dr. Xiubo Yu (Chinese Ecosystem Research Network)
14:15	Trends of geo-informatics applications in biodiversity monitoring in Thailand Dr. Yongyut Trisurat (Kasetsert University)
14:40	Roles of remote sensing for studies of biodiversity and ecosystem function - recent challenges of Japanese group Dr. Rikie Suzuki (JAMSTEC)
15:05	A perspective for a trans-scale biodiversity observation system: To integrate horizontal and vertical networks of information about ecosystems Dr. Reiichiro Ishii (JAMSTEC)
15:30	Challenges and opportunities for satellite observation of ecosystems in Korea Dr. Eun-Shik Kim (Kookmin University)

15:55 – 16:10 Coffee break

16:10 – 17:00	Discussion

WG3: FOREST CARBON TRACKING (FCT)

In November 2011 the Group on Earth Observations (GEO) VIII Plenary approved the Global Forest Observations Initiative (GFOI) Implementation Plan. While there is institutional framework for both the implementation of GFOI and continued operations of the GEO Forest Carbon Tracking (FCT) Task, the contribution of FCT is essential to a successful implementation of GFOI. GFOI was proposed and accepted with the intent that its activities would within some two years become operational and find a long term "home" organisation. This gives GFOI a "proof-of-concept" role in GEO as the first task to commit to an operational contribution to its Societal Benefit Area (SBA).

While, FCT is required to conduct internationally coordinated research activities responding to the emerging policy demands: 1) Monitoring, Reporting and Verification (MRV) to support the UNFCCC/REDD+ development and implementation. 2) Consideration of the tradeoff between global forest carbon management (incl. bio-energy use) and other social benefits. Especially, later is one of the important topic in the Rio+20 sustainable development debates. In order to answer to these issues, FCT activities need to enhance collaborations with not only with carbon but also with other SBA modeling researches.

AGENDA

Tuesday, 3 April 2012

Co-Chairs:	**Dr. Yoshiki Yamagata** (National Institute for Environmental Studies (NIES), Japan), **Dr. Miriam Baltuck** (The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Department of Climate Change and Energy Efficiency (DCCEE), Australia)
09:30-09:40	Opening remarks and introduction to the FCT session
	Yoshiki Yamagata (NIES, Japan), Co-chair
09:40-10:10	Overview of GEO FCT and GFOI
	Miriam Baltuck (CSIRO, DCCEE, Australia), Co-Chair
10:10-10:30	Overview of the GFOI Space Data Coordination
	Ake Rosenqvist (soloEO, Japan)
10:30 –11:00	***Break***
11:00-11:20	Overview of REDD+ activities in Malaysia
	Hamdan bin Omar (FRIM, Malaysia)
11:20-11:40	Overview of REDD+ activities in Indonesia
	Orbita Roswintiarti (LAPAN, Indonesia)
11:40-12:00	Overview of REDD+ activities in Vietnam

Nguyen Phu Hung (Forest inventory and planning institute, Vietnam)

12:00-13:30 Lunch Break

13:30-13:50	Overview of National Carbon Project CS Jha (FED, NRSC, India)
13:50-14:10	Stability of GAMMA-NAUGHT and THE PALSAR based FOREST MRV SYSTEM Masanobu Shimada, Manabu Watanabe, Takeshi Motooka, Tomohiro Shiraishi, Rajesh Thapa (Japan Aerospace Exploration Agency (JAXA), Japan)
14:10-14:30	Systematic collection of in-situ data for validation of remotely sensed information for regional forest carbon monitoring Kenlo Nasahara (Univ. Tsukuba, Japan)

14:30-15:00 *Break*

15:00-15:20	Research and development of forest carbon monitoring methodologies for REDD+ Tamotsu Sato (Forestry and Forest Products Research Institute (FFPRI), Japan)
15:20-15:40	Estimate on large scale carbon dynamics in tropical peatland-forest Mitsuru Osaki and Kazuyo Hirose (Hokkaido Univ.)
15:40-16:00	Integrating ground observation, satellite remote sensing, and terrestrial ecosystem model for future forest carbon monitoring systems Nobuko Saigusa, Akihiko Ito, and Yoshiki Yamagata (NIES, Japan)
16:00-16:30	Session summary and discussion lead by Co-chairs for FCT toward sustainability science

WG4: OCEAN OBSERVATION AND SOCIETY

Establishing the way for the data integration toward social benefits is the most important feature of GEOSS. Relevant data collection and dissemination that will ensure free access to data and data products is an important key to the feature of GEOSS.

It has been found that systematic data collection and dissemination was well promoted in the field of ocean observation especially for international projects under GCOS concept through the enormous effort along GEOSS provision during the period from 2006 through 2011. However, the collection and dissemination of ocean data from regional or national projects has not been promoted and established among Asian countries.

In the GEO 2012 – 2015 Work Plan, a new paragraph on "Ocean and Society" needs to be added to address the aforementioned issue. Ocean modeling efforts for social benefits will be included in the paragraph. One of the most successful contributions of Ocean observation to social benefits has been apparent through the reports from IPCC under a close collaboration with the modeling of changes in the global climate. In the scope of the implementation plan from 2012, it is natural that ocean observation efforts needs to be requested to enlarge the collaboration with ocean modeling efforts even for possible coastal and fisheries management. Data integration of ocean observation not only in blue water but also in green water together is essential for the social benefits in coastal regions to create more sustainable and productive society keeping harmonious relationships between human and the environment.

Thus this session aims:

1) To share possible contributions of data integration to social benefits;
2) To learn status of data collection and dissemination in each international program and country;
3) To start the discussion on and to share the ideas on how to disseminate and integrate the coastal ocean observation data with the blue water data.

The final goal of this session is to form a common recognition among attendees that data collection and dissemination is most fundamental issue for ocean science to pursue the social benefits through ocean data integration.

AGENDA

Tuesday, 3 April 2012

Co-Chairs:	**Dr. Masao Fukasawa** (JAMSTEC), **Dr. V.V.S. Sarma** (NIO), **Dr. Keisuke Mizuno** (JAMSTEC)
09:30 – 9:40	Opening remarks and welcome address (Co-chairs)

Session 1: **Present status of Ocean observation**

GCOS oriented projects in blue water

09:40 – 10:00	Overview of Argo and Repeat Hydrography
	(Takeshi Kawano, JAMSTEC/J-GO-SHIP)
10:00 – 10:20	Overview of Tropical buoy array
	(Keisuke Mizuno, JAMSTEC and Sydney Thurston, NOAA)
10:20 – 10:40	Varieties of time series data (Ocean Sites)
	(Makio Honda, JAMSTEC/Ocean SITES)

10:40-11:10 Break

Session 2: **Present status of Ocean observation**

Regional/domestic projects in green water

11:10 - 11:30	Monitoring system for Fisheries Research around Japan
	(Takashi Setou, FRA)
11:30- 11:50	New insights on the coastal currents in the North Indian Ocean
	(D.Shankar, NIO and S.S.C. Shenoi, INCOIS)
11:50- 12:10	Integrated Indo-Pacific Ocean Observing Initiative in support of the regional climate service
	(Weidong Yu, SOA/China)
12:10 - 12:30	Capturing the evolution of Indian Ocean Dipole using RAMA buoy networks
	(Iskhaq Iskandar, UNSRI/Indonesia)

12:30-13:30 Lunch Break

Session 3: **Toward Social benefits**

13:30-13:50	Ocean and Climate Prediction Services for the Society
	(S.K.Behera, JAMSTEC)
13:50-14:10	Biogeochemistry of Indian estuaries and human interference on them
	(V.V.S. Sarma, NIO)
14:10- 14:30	Societal benefits of operational ocean forecasts – an Indian experience –
	(P.A. Fransis, INCOIS)
14:30-14:50	Ocean Observation as IPCC activity
	(Masao Fukasawa, JAMSTEC and Chris Sabine, NOAA)
14:50 – 15:10	Data Portal and Integration in JAMSTEC
	(Yasunori Hanafusa, JAMSTEC)

15:10-15:40 ***Break***

15:40 – 16:30 Session summary and discussion
(Co-chairs)

WG5: AGRICULTURE AND FOOD SECURITY

The food demand is still increasing in the 21st century under rapid population growth, food transition from grain to meat, use of crops for bio-fuel, etc., while facing the shortage of arable land shortage and water resource for sufficient food production, and frequently occurring extreme weather conditions under global warming which are terrifying stable productivity of food. In addition, because of flood and drought, there are so many agriculture damages around the world. Moreover, we have to break the dependency of agricultural production on excessive use of chemicals which causes serious environmental impact. Namely, we need to simultaneously accomplish both high productivity and sustainability against several constraints.

Realizing that global/local scale earth observation is one of the most important key factors to address those issues by optimizing complex conditions, several groups have been involved in providing satellite observations and ground level observations and trying to apply such data with some model for agriculture including crop yield forecast and agriculture damage assessment. However, the satellite observations and the ground observations have been hardly merged though the importance of such integration is promising.

In this working group, both of the fields will interact to learn about the present status and perspectives of satellite observations and ground observations, and discuss how to integrate both to achieve an optimal productivity fulfilling the above constraints, while clarifying the short-term and long-term goals of the observations. The results of the discussion will lead us to the Input to GEO GLAM (Global Agricultural Geo-Monitoring) project work plan for G20 action plan and other international projects including FAO AFSIS, WMO CAgM, etc.

AGENDA

Tuesday, 3 April 2012

Co-Chairs:	**Prof. Seishi Ninomiya** (University of Tokyo), **Dr. Jai S. Parihar** (ISRO, India), **Prof. Byong Lyol Lee** (Seoul National U., WMO/CAgM, South Korea)
9:30-9:40	**Introduction** by co-chairs
9:40-12:10	**I. Satellite observation and agriculture** (Chair: Jai. S. Parihar, ISRO, India)
	GEO-GLAM global agricultural monitoring (Dr. Jai S. Parihar, ISRO, India);
	Food security and satellite monitoring (Dr. Shinichi Sobue, JAXA);
	Food security and satellite monitoring (Dr. Jai S. Parihar, ISRO, India) invited;

Food security and satellite monitoring (Dr. Preesan Rakwatin , GISTDA, Thailand) invited;

Contribution and policy of CAgM/WMO to ground data provision (Byong Lyol Lee, Seoul National U., WMO/CAgM);

Utilization of children as field sensors (Seishi Ninomiya, U. Tokyo);

Discussion.

12:10-13:30 **Lunch break**

13:30-16:00 **II. Ground observation and agriculture** (Chair: B.L. Lee)

GeoSense - Towards an OGC complaint DSS for precision farming with GeoICT and WSN (J. Adinarayana, IITB, India) *Remote presentation*

Present status and perspective of field sensor network (Masayuki Hirafuji, U. Tsukuba & NARO, Japan);

Field sensing and agricultural decision support in Indonesia (Budi I. Setiawan, Bogor Agricultural University, Indonesia)

Calibrating crop models through data assimilation under ubiquitous geoinformatics (Kyoshi Honda, Chubu University).

Crop modeling in agriculture and food production decision support system (Felino P. Lansigan, UPLB, Philippines)

Integrated databases for agricultural decision support (Takuji Kiura, NARO)

Food Security and Climate Change in the Asia-Pacific Region: Evaluating Mismatch between Crop Development and Water Availability (Samsul Huda, U. Western Sydney)

16:00-16:20 **Coffee break**

16:20-17:30 **III. Discussion: data integration toward sustainable food production** (Chair: S. Ninomiya)

Summaries for Session 1 and 2

Discussion

Topics to be discussed:

- Clarification of short-term and long-term goals;

- Integration of satellite and ground data;

- Development and collaboration scheme;

- Capacity building;

- Input to GEO GLAM project work plan and other international projects.

Summary for WG recommendations