

Summary Report

AP-BON Working Group at 10th GEOSS Asia-Pacific Symposium (GEOSS-AP)

The WG of AP-BON was held as one of working group of the parallel session of 10th GEOSS (Global Earth Observation System of Systems) Asia-Pacific Symposium.

■ Outline of the meeting

Date: 19 September, 2017

Venue: Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam

Co-Chairs: Tetsukazu Yahara (Kyushu University, Japan); Sheila Vergara (ASEAN Center for Biodiversity, Philippines); Ha Quy Quynh (VAST, Vietnam); Qinhua Liu (CAS, China)

Participants: 23 persons and 8 nationalities

■ Objectives:

- To share the current status of thematic and geographical coverage of biodiversity, phenology and ecosystem research sites (plots)
- To plan mechanisms for data and knowledge delivery to Earth Observation community by inter-operable data system such as GEOSS portal and DIAS
- To build the 'Super-site' concept for integrated biodiversity and ecosystem observations by in-situ and satellite systems

■ Outline of the proceedings

Welcome remarks: Mr. Hisashi Kawagoe (Biodiversity Center of Japan, MOE)

Session 1: Update and new plans of regional and national BON activities

(Chair: T. Yahara)

① Vietnam National Biodiversity and GEOSPATIAL (Ha Quy Quynh, VAST, Vietnam)

He reported on extent of surveys conducted in Vietnam and the increase of species discovered. Through data and maps, he showed the increasing numbers and area covered by protected areas in Vietnam. He explained the importance of Geospatial data in biodiversity conservation, particularly in mapping and monitoring. He presented a case study on web-based real time monitoring of wetlands in Vietnam in collaboration with American Historical museum.

② Mapping Asia Plants (MAP) Initiative and Progress (Xuehong Xu, CAS, China)

She shared updates of the “Mapping Asia Plants Programme”. She presented the COL, the Plant List, GBIF, Rainbio, as powerful resources of plant species that yet have to exist in continental Asia, the reason for the establishment of Mapping Asia Plants as initiated by the ABCDNet.

③ Update and new plans of JBON related activities (Reiichiro Ishii, RIHN, Japan)

He reported on the “Update and new plans of JBON related activities” a collaboration of 4 organizations in Japan. He reported on hi-resolution land cover mapping projects in collaboration with JAXA and demonstrated how work on cleaning up map data results to higher accuracy of land use maps.

④ Updates of Global, Regional and National BONs (Eun-Shik Kim, Kookmin University, Korea)

He provided updates of global, regional and national BONs based on his attendance to GEOBON meetings and to the INTECOL meeting in China. He reported that APBON has aligned its activities with global plans. He refreshed the working group on the mission and vision of GEOBON, its governance structure and work areas in developing standards, supporting BONs and policy relevant outputs.

⑤ Nepal BON Update (Mangal Man Shakya, Wildlife Watch Group, Nepal)

He presented the use of observation in ECO-DRR to assist people and to assist in recovery efforts. He demonstrated how EOs could support the enhancement of low cost and environment friendly bio engineering as a rehabilitation approach.

⑥ ASEAN Biodiversity Update (Sheila Vergara, ACB, Philippines)

She reported on the contents of the ASEAN biodiversity outlook second edition (ABO2). She informed the session that the ABO is a series of publications prepared by ACB that integrates information from ASEAN member states’ submissions of their National Reports to CBD.

Session 2: Thematic and strategic issues of biodiversity and ecosystem observations

(Chair: E. -S. Kim)

① Challenges in connecting EO to SDGs (Hiroyuki Muraoka, Gifu University)

He referred to the SBAs of GEOSS and the SDS to align APBON’s work in data, knowledge, with the indicators, targets and ultimately the goals. He discussed the Essential Biodiversity Variables and their role in the hierarchy of work towards achieving the SDGs.

② The Philippine contribution to the Biodiversity Observation Network (PhilBON)

(Perry Ong, University of the Philippines Diliman, Philippines)

He reported on “The Philippine contribution to the Biodiversity Observation Network (PhilBON): The Palanan permanent forest dynamics plot, lessons learned. He analyzed data on the number of typhoons that hit the Philippines and postulated that it may disturb biodiversity in the country. He surmised that BD and ES assessments cannot be done without field work.

③ Quarter-century monitoring of seedfall and tree growth in a forest dynamics plot, northern Japan (Kazuhiko Hoshizaki, Akita Prefectural University, Japan)

He presented on the “Quarter-century monitoring of seedfall and tree growth in a forest dynamics plot in northern Japan. He summarized monitoring via FDPs in Japan and showed results of long term datasets.

④ How to link multiple super sites for integration of satellite and ground observations -from the view point of plant phenology- (Shin Nagai, JAMSTEC, Japan)

He presented about importance of Plant phenology in preparing for and addressing climate change issues. He demonstrated tools used in the collection of phenological information. He also explained that appropriate sensors must be selected for particular work.

(Discussions)

Dr. Liu: How do you extract images from camera?

Dr. Nagai: We are extracting images as JPEG data because it is easy to detect images and utilize to take average number. Will show those data at offline later.

Dr. Liu: It would be some differences between the images extracted from satellite and grounded devices.

Dr. Nagai: Good question. There are some resolution gaps between satellite and footprint data. Will tackle with this and report in future.

Session 2: (continued)

(Chair: H. Q. Quynh)

⑤ A new phase for Australia's Terrestrial Ecosystem Research Network: a continental observatory for environmental change and management (Nicole Thurgate, University of Adelaide, Australia)

She presented a new phase for Australia's Terrestrial Ecosystem Research Network (TERN): a continental observatory for environmental change and management. She notes that monitoring is currently fragmented in Australia and no one has brought it together. So there is necessary to link these into one system, move away from individual pieces of data and work toward integration of shared data.

(Discussions)

Dr. Kim: What is the forecast of the coordination activities initiated by TERN?

Ms. Thurgate: The next step for TERN is to cooperate with international colleagues and other countries

in Asia Oceania region in terms of collaboration such as joint project.

Dr. Kim: Hope GEO and TERN must be able to conduct “co-deliver” of the output.

⑥ Anticipating the impacts of hydropower dams in the Mekong River by a freshwater fish observation network (Yuichi Kano, Kyushu University, Japan)

He presented on anticipating the impacts of hydropower dams in the Mekong river by a freshwater fish observation network on 366 species and several environmental parameters. He related a simulation of a hydropower dam using several scenarios – the result being an impact map on species loss.

⑦ The activities and plans contributing to AOGEOSS Task 7 (Qinhua Liu, CAS, China)

He presented the “Activities and plans contributing to AOGEOSS Task 7”. Then he identified various types of datasets and sources of remote sensing data that can be integrated through different organizations in China. He called for more involvement of countries and organizations in the AOGEOSS.

Discussions:

Dr. Yahara: Large area of tropical forest was lost in 2015 due to forest fire. Do you have any statistics or way to find fire?

Dr. Liu: China has a technology of fire detection with high resolution by items such as temperature and smoke. In case of smoke, aerosol distribution come to different.

⑧ Ecosystem condition and variation monitoring for AO region (Jing Li, CAS, China)

Mr. Liu on half of Mr. Li presented on the ecosystem condition and variation monitoring for AO region. He showed seasonal variations in relation to the carbon sequestration potential of plants in various parts of the world and surmised that Africa and Asia are the major carbon sinks.

Session 3: Connecting observations to approach SDGs

(Chair: H. Muraoka)

① Integration of in-situ biodiversity observation and modeling to mitigate climate change impacts and to enhance biodiversity conservation (SDG goals 13 & 15) (Yongyut Trisurat, Kasetsart University, Thailand)

He focused on goals 13 and 15 of the SDGs and presented on how in-situ observation both inside and outside PAs in Thailand address goals 13 and 15 using LTER sites in Thailand. He also posed the greater challenge beyond compliance to the Aichi targets – if Thailand has conserved and allocated enough area and efforts to be resilient to climate change and enhance SDGs.

② Rural developments and Sustainable Monitoring of ecosystems in coastal zones (Satoshi Ishikawa, RIHN, Japan)

He presented a framework by which care for ecosystems and effective utilization of resources are better achieved through community-based approaches and believes that such approaches cultivate the hopes and pride of local stakeholders where they co-benefit from the joint initiative.

(Discussion)

Dr. Yahara: To develop a capability of local community is important to maintain cooperation but it would be unstable unless there is a good leader. Which kind of leader is suitable in cooperation?

Dr. Ishikawa: A leadership is very important to create the local groups but not critical because, in case of my research area, the leader changed three times selected by the user group, community leader is selective,

Dr. Kim: What is area/zone capability?

Dr. Ishikawa: Area capability indicates not only economic value but human action possibility in which being increased in said area.

③ Biodiversity and ecosystem services for local indigenous people: Lessons from a case study in rural area in Sarawak, Malaysia (Yayoi Takeuchi, NIES, Japan)

She related the circumstances of indigenous people who live in the community forests that support their ecosystem service, the locals who were fully aware of their local identity. The locals were likewise aware of the cultural services of the forests but have to be made aware of the existence and value of other ecosystem service as part of the project.

(Discussion)

Dr. Sheila: Not only local people but global society is also aware of the value of local product. In this context, the product also helps the awareness of traditional culture.

Dr. Takeuchi: Cultural service is also important for local people. For instance, a basket is cultural product and the value would be shared by others as a cultural service.

④ Assessing ecosystem services in Asian region by using biodiversity observation data (Tohru Nakashizuka, RIHN/Tohoku University, Japan)

He presented on assessing ecosystem services in Asian region by using biodiversity observation data. He demonstrated how ES is estimated from biomass and structure of forests. On connecting biodiversity data to ES, he suggested the use of a methodology of mapping functional traits with ES to estimate the probability of soil erosion.

(Discussion:)

Dr. Liu: What kind of planter can contribute to the data classification?

Dr. Nakashizuka: A remote sensing data can be classified by vegetation, by using biomass it can estimate productivity.

Dr. Muraoka: A nationwide map should be developed to the regional scales but we have limitation. What could be the next step?

Dr. Nakashizuka: It is important to share the work data which is not opened about the hidden species in the area. The species in Malaysia is clear but not in Vietnam and Cambodia.

Session 4: Building / connecting databases

(Chair: Q. Liu)

① ILTER-DEIMS and GEOSS (Hiroyuki Muraoka, Gifu University, Japan)

He presented the data management principles of GEOSS and the GEOSS Common Infrastructure (GCI) designed to broker data exchange and sharing. www.geoportal.org is equipped with a visualizing facility and an entry point to other resources. He shared data sharing experiences of ILTER an organization that maintains a metadata base and observation catalogue shared through their website.

Discussions:

Dr. Liu: How many uses and data would be available?

Dr. Muraoka: No data but agree that statistics is important.

② GBIF and ACB (Sheila Vergara, ACB, Philippines)

She presented on the various data collaborations of ACB and enumerated the partnerships that ACB maintains to ensure that their data structures are consistent with global standards and that the ASEAN CHM is populated.

③ National Survey on the Natural Environment of Japan (Yusuke Saito, Ministry of the Environment, Japan)

He presented on the basic survey taking off from the governance and the functions of the Biodiversity Center tasked to provide the basic scientific data necessary for nature conservation, monitoring of ecosystem changes. They organized Ikimonolog, a platform where the general public could participate in the surveys. They also organize training courses mainly for East and Southeast Asia, as an international contribution.

(Discussion)

Mr. Mangal: The training is mainly focused on the flora.

Mr. Saito: Because it based on the need from ASEAN countries. If they have other concern or target, we will accept it with discussing with the specialists.

Dr. Liu: MOE's activities based on the very long term plan. How do you adopt and implement a new

technology to assure the continuity of those data?

Mr. Saito: We are conducting survey every year in many sites. Once there is a new technology, we will update information not to make it as old or out of use.

④ SE Asian Plant Diversity Assessment Network (Tetsukazu Yahara, Meng Zhang, Ngọc Nguyễn, Bình Hoàng Thị, Kyushu University, Japan)

He presented some of the results of the SE Asian plant diversity assessment where 135 sites in 35 locations were visited in 6 years. He noted that there were no good forest below 1200m and suggested the need to improve efforts in park management and in PAs. To link small transects to large plots and supersites, it was needed to collaborate with remote sensing studies in future.

Session 5: Toward the next decade of APBON

(Chair: S. Vergara)

- Tetsukazu Yahara, Kyushu University, Japan

As a conclusion, Chair Dr. Yahara presented a suggested framework by which the next decade of APBON could pursue its collaborative work. He suggested the overarching framework to be Climate change and biodiversity / ecosystem changes and their impacts on ecosystem functions and services that can be assessed or approached through several methods in the next 10 years. Dr. Kim also recalled the necessity of discussing the evolution of BONs in the region and align with other GEOBON activities.

Breakout discussions

[Potential topics]

- (i) Climate change and biodiversity/ecosystem changes (phenology), and their impacts on ecosystem functions and services;
- (ii) Super-site as the methodology;
- (iii) Data and information flow;
- (iv) Contributions to SDGs

Consolidation of ideas and planning the potential structure

Closing remarks

Preparation of WG outcome report

Co-chairs and co-organizers

■ At the third day, Dr. Yahara, as a co-chair of WG2 made comments on the topic as follows; (i) Climate change and biodiversity/ecosystem changes (phenology), and their impacts on ecosystem functions and services; (ii) Super-site as the methodology; (iii) Data and information flow; (iv) Contributions to SDGs.



GEOSS Asia-Pacific Symposium

Accelerating the realization of the SDGs with Earth Observations:
Lessons from the Asia-Oceania Region

 Date: 18th - 20th September 2017

 Venue: VNSC, Vietnam Academy of Science and Technology, Hanoi, Vietnam

