

## Summary Report

### AP-BON Task Group at 11th GEOSS Asia-Pacific Symposium (GEOSS-AP)

The Task Group (TG) 2 of AP-BON was held as one of the working group of the parallel session of 10th GEOSS (Global Earth Observation System of Systems) Asia-Pacific Symposium

#### ■ Outline of the meeting

Date: 24th – 26th October, 2018

Venue: Kyoto TERRSA, Kyoto, Japan

Co-Chairs: Tetsukazu Yahara (Kyushu University, Japan); Sheila Vergara (ASEAN Center for Biodiversity, Philippines); Yongyut Trisurat (Kasetsart University, Thailand)

Participants: 27 persons and 8 nationalities

#### ■ Objectives:

- To review the achievements of the last AP BON workshop (especially about the work plan paper)
- To implement work plans specific to regions and subjects through the concrete collaborations of AP BON contributors, including observation strategies in some candidate master sites
- To implement work plans for the data collection, sharing, integrated analysis, and synthesis to meet the scientific questions and societal needs (e.g., UN's sustainable development goals, i.e., SDGs)
- To discuss the development of newly incorporated collaborators and/or field sites in AP regions
- To consolidate our discussion as the implementation plan of future AP BON and its collaboration with other Task Groups in Asia Oceania GEOSS and other associated international initiatives

#### ■ Outline of the proceedings

<Opening Session>

Kazuo Somiya (Ministry of the Environment)

The opening remarks were given by Mr. Kazuo Somiya, representing Ministry of the Environment, Japan. He welcomed all participants and expressed depth of gratitude to co-chairs of AP-BON, Dr. Yahara, Dr. Sheila and Dr. Yongyut. In addition, he referred to the background and achievement of AP-BON established in 2009. He also introduced the step as an important part of GEOBON and expected exchange of various views on biodiversity during the two-day discussion. Finally he emphasized that how AP-BON can contribute to other task groups of GEOSS.

Tetsukazu Yahara (Kyushu University)

Briefly explained the agenda of the plenary and introduced the COP 20 scheduled to be held in Beijing in 2020 as an important timing for the activities of AP-BON. Therefore the three groups of terrestrial, land water and marine biodiversity are going to have the opportunity to exchange opinions and discussions vigorously among the goals of each group.

Sheila Vergara (ASEAN Centre for Biodiversity)

Dr..Sheila expressed her gratitude for being able to participate the plenary session and said she expected to get various discussions and feedback during the GEOSS AP symposium.

Yongyut Trisurat (Kasetsart University)

Dr. Yongyut also expressed appreciation for participating the plenary session then expected the participants to contribute to the world community by advancing their own research.

Plenary Presentations:

Chair: Tetsukazu Yahara (Kyushu University)

- Achievements of the last AP-BON workshop

Tetsukazu Yahara (Kyushu University) and Sheila Vergara (ASEAN Centre for Biodiversity)

At first, Dr. Yahara introduced the agenda of the workshop and presented the achievements of last AP-BON workshop from four aspects; collaboration, ongoing observation, monitoring and promoting observation.

The first on collaboration, he presented that the next AP-BON Strategy and Workplan would mainstream AP-BON in the Global conservation agenda.

The next on ongoing observations, he also mentioned that species specific observations contributed to knowledge on site management (e.g. egarowanas in Sarawak).

The third about monitoring, he introduced the Monitoring Sites 1000 project which visualizes the long-term impacts of climate on biodiversity.

The fourth was Spatial Planning for protected areas. He also referred to the Trait-based mapping of forest functions and their applications.

Lastly he encouraged the participants to promote the results of work through a visual media such as infographics.

- New ideas for a revised work plan from 2019 to 2021

Tetsukazu Yahara

Dr. Yahara presented the history of AP-BON and other network activities, and the current scheme of AP-BON. He also shared a next step of AP-BON including 5 projects as follows;

Project 1: Plant diversity assessment (1A),  
Plant phenology observation (1B),  
Trait diversity assessment (1C)

Project 2: Freshwater fish assessment;

Project 3: Coastal biodiversity assessment;

Project 4: Networking observation sites;

Project 5: Developing Tailor-fit Indicators and Visualization Tools.

Then Dr. Yahara gave examples of networking observations by citizen, which had led to good success in Korea, Japan and the flora of Vietnam Facebook group.

- Recent progress in GEO BON

Laetitia Navarro (GEO BON)

Dr. Navarro firstly gave update and current progress on the GEO BON activities. Referring to the mission and vision of GEO BON, she emphasized that the GEO BON's core focus should be on "developing the essential biodiversity variables" and "developing the biodiversity observation networks" which is expected to lead to "producing policy relevant outputs".

Keynote presentation and discussion (from forest):

- Networking of forest plots in Asian countries

Chair: Kaoru Kitajima (Kyoto University)

Dr. Kitajima firstly overviewed the current networking of forest plots among Asian countries and reported forest GEO plot network of Center for Tropical Forest Science (CTFS) with 67 forest plots, in 27 countries, 6 million trees and 12000 species. She also introduced the current situation in detail of 29 CTFS large plots in Asia and the regional tree cover loss by driver for the period 2001-2015.

Finally she raised some points to be discussed.

- Relationship among phenology, ecosystem process, and biodiversity

Chair: Shin Nagai (JAMSTEC)

Dr. Nagai presented on the relationship among phenology, ecosystem process and biodiversity. He emphasized the importance of secondary forests in Southeast Asia from four aspects as below;

- 1) Collection of phenological information for discrimination of tree species
- 2) Collection of in situ phenological observation data

3) Collection of phenology images taken by time-lapse digital cameras

4) Collection of ground-truth for land use and land cover change

- Possible linkage with the UNESCO's Man and Biosphere programme

Chair: Yayoi Takeuchi (NIES)

Dr. Takeuchi had a brief description of the mechanism on how circumstances of the people living in the society with nature would be affected the preservation of biodiversity. In this sense, UNESCO's Man and Biosphere program could be one of the best practice which promoted the implementation of conservation collaborated with the local people and local community environment. Then she invited Dr. Dedy to introduce the actual practice observed in Indonesia.

- UNESCO's Man and Biosphere programme in Indonesia

Dedy Darnaedi (Universitas Nasional Jakarta)

Dr. Darnaedi also presented on the possible linkage with the UNESCO's Man and Biosphere Program especially on Biosphere Reserve in Indonesia. He introduced the definition of Biosphere Reserve (BR) first and the balance relationship between human and nature, and shared the basic concept of site management Biosphere Reserve. There are 669 BRs in 120 countries, and 11 BRs in Indonesia (2016) are supported by government. He also provided some examples such as Cibodas BR, peat land BR, marine resource BR, and figured out some common problems of Biosphere Reserves in Indonesia.

- Evaluation of ecosystem services and biodiversity in river basin scale

Chair: Yongyut Trisurat (Kasetsart University)

Dr. Yongyut presented evaluation of ecosystem services and biodiversity in River Basin Scale. He used a case study of lower Mekong River on his presentation. He mentioned the Transboundary River Basin, basin-wide assessment of ecosystem services, and talked about the species vulnerability in limited occurrences. Two methods, biological trait-based approach and regional and national experts were also mentioned. He had a brief introduction of Ecosystem area and shifts; Water Yields and Food security.

Keynote presentation and discussion (from fresh water):

- Threats and future of freshwater fish biodiversity in Southeast Asia

Chair: Yuichi Kano (Kyushu University)

Dr. Kano presented on the threats and future of freshwater fish biodiversity in East and Southeast Asia. He also mentioned some issues of freshwater fish biodiversity and habits in Southeast Asia such as pollution, habitat loss, global warming, plantation and alien penetration. He also introduced some

possible monitoring sites in order to maintain the long-term monitoring of freshwater fish biodiversity in Southeast Asia with methodology to be taken.

- 1) Inle lake
- 2) Steung Treng
- 3) Ubon Ratchatani
- 4) Baleh River

- Activities in TERN Australia

Mark Grant (TERN)

Mr. Grant introduced Australia's land ecosystem observatory and NATIONAL DATA COLLECTION including the data openness of TERN on the field, airborne and satellite. He also introduced the detail of each scaled observation such as continental, regional and local scale. Temporal data streams contributing to achieving SDGs were emphasized and detailed in his presentation. Essential measures and environmental economic accounting as well as national environmental prediction system were involved in his presentation.

Keynote presentation and discussion (from marine):

- Feasibility of large scale analysis and potential networking as AP-MBON

Chair: Takehisa Yamakita (JAMSTEC)

Dr. Yamakita presented on the feasibility of large-scale analysis and potential networking as referred as AP-MBON. In his presentation, four points were described as points to be developed

- 1) Networking networks and to revive past activities to observe spatial-temporal patterns;
- 2) To facilitate broad scale researches and production of infrastructure
- 3) To facilitate gathering the information of recent topics
- 4) Outreaching and increase communication of people.

Finally he announced the reason why society needed AP-MBON.

- Possibility of the collaboration with AOGEOSS

Chair: Hiroyuki Muraoka (Gifu University)

Dr. Muraoka introduced to the participants about the current discussions around the collaboration with AOGEOSS task group and emphasized the Interdisciplinary scientific studies by sharing thematic areas, geographical targets, mapping exercise on SDGs, Sendai framework and Paris Climate Agreement.

He also requested some advice for "Kyoto Statement" from TG2 members.

Group session (forest, fresh water, marine):

In this session, participants discussed by focusing on the following themes.

After this, participants were separated into three working groups and discussed in their particular topics. The discussions of each group were reported in the wrap-up session.

[Themes]

From forest:

- (a) Networking of forest plots in Asian countries (including the possibility of satellite tracking of migratory birds).
- (b) Relationship among phenology, ecosystem process, and biodiversity.
- (c) Possible linkage with UNESCO's Man and Biosphere (MAB) programme.
- (d) Evaluation of ecosystem services and biodiversity in river basin scale.

From fresh water:

- (a) Networking and achievements of freshwater fish biodiversity observation in Southeast Asia.
- (b) Subsequent monitoring of freshwater fish biodiversity in Southeast Asia.

From marine:

- (a) Listing potential collaborators to join the network to observe spatial-temporal patterns
- (b) Facilitation of broad scale observations focusing on feasibility of pole-to-pole analysis
- (c) Recent monitoring methods to be considered in the above activities.

Wrap-up session (forest, fresh water, marine):

Session co-chair: Tetsukazu Yahara (Kyushu University), Sheila Vergara (ASEAN Centre Biodiversity), and Yongyut Trisurat (Kasetsart University)

- Report from fresh water:

Presenter: Yuichi Kano

In fresh water group, Dr. Kano reported their discussions particularly on several monitoring sites and introduced 3 possible methods to be taken in each site as follows;

Method1: Direct field sampling survey

Method2: eDNA

Method3: Market survey

And he also emphasized the importance of the budget to implement of the survey.

- Report from forest:

Presenter: Yayoi Takeuchi

Dr. Takeuchi introduced the discussion of forest group. The first point was to strengthen the network among forest group as a priority especially the cooperation in social aspects emphasizing the monitoring sites to be made available for the people in local area. Another point was solution-oriented and interdisciplinary research with collaborating with the actual stakeholders. In-situ monitoring is also important and she also emphasized the contribution to SDGs.

- Report from marine:

Presenter: Takehisa Yamakita (JAMSTEC)

In marine group, Dr. Yamakita reported especially on Mangrove research and the boundary of geographical region. He also quoted the discussion of marine group with referring to fundraising and listed potential funds.

(TG2 Participants)

