Summary Report

11th AP-BON Workshop

■ Outline of the meeting

Date: 26th – 28th June, 2019

Venue: Double Tree by Hilton, Kuala Lumpur, Malaysia

Co-Chairs: Tetsukazu Yahara (Kyushu University, Japan); Sheila Vergara (ASEAN Center for Biodiversity, Philippines); Eun Shik Kim (Kookmin University, Korea)

Participants: 43 persons and 11 nationalities

■ Objectives:

- Discussing a new work plan

■ Outline of the proceedings

Day 1

Opening Session

Opening Remarks：Kazuo Somiya (Ministry of the Environment, Japan)

As a Secretary General of AP-BON, Dr. Kazuo Somiya, Director of the Biodiversity Center of Japan, Ministry of Environment-Japan welcomed participants to the 11the Asia-Pacific Biodiversity Observation Network Workshop. He said that this meeting will be a chance to share biodiversity observations in the AP region and to discuss the new work plan. He recalled that the APBON had significant contributions to IPBES in the recent past and concluded by thanking participants for their attendance and wished the meeting a fruitful outcome.

Opening Remarks：Eun-Shik Kim（Co-Chair, Kookmin University, Korea）

Dr. Eun Shik Kim, one of the three co-chairs of APBON delivered a brief orientation on APBON's history and thanked the organizers on behalf of the co-chairs of APBON. He reminded the meeting of the beginnings of a Global Biodiversity Observation network in 2008 and recalled the history of APBON, its linkages to the GEOBON, and related platforms such as the IPBES. He provided a short introduction on the discussions of the workshop, highlighting Keynote and plenary presentations, and the introduction to the new work plan. He thanked the Ministry of Environment of Japan for their support to this workshop.

Keynote speeches

Presentation: Affendi Yang Amri (Malaysian Society of Marine Sciences, Malaysia)

Mr. Affendi Yang Amri of the Malaysian Society of Marine Sciences (MSMS) provided avery comprehensive presentation on the governance, conservation status and challenges of the coastal and marine environments of Malaysia. Highlights of his talk were on the comprehensive approach by which Malaysia invested in managing its coastal and marine ecosystems, he noted that studies have indicated that areas in association with the sunda shelf have some 500 species of corals, indicating that these were areas that qualified the expansion of the coral triangle. He highlighted that priority areas for conservation are the 9000 sq km Sugod Island Marine Conservation Areas (SIMCA) Sabah, one submerged offshore marine park at the continental slope edge and three sites in the SE of Peninsular Malaysia that have all three habitat building species. He informed the meeting that Tun Mustafa Park has recently been gazette and that challenges in coastal management include the need to more comprehensively document the size and extents of coral reefs and seagrass meadows in the country. He also confirmed that the draft of the 6NR(National Reports) has been finalized by the scientists assigned but the document is being vetted among stakeholders by the government of Malaysia.

Presentation: Keping Ma (Chinese Academy of Sciences, China)

The second keynote speech was on Biodiversity Monitoring in China, delivered by Prof. Keping Ma of the Chinese Academy of Sciences. Dr. Ma briefed the meeting on the comprehensive network such as other universities (Peking University, Beijing Normal University) through which the Chinese Academy of Science was monitoring China's biodiversity. To engage the monitoring of such a large country, China has invest some US$ 20M on equipment such as camera traps and soundscape equipment deployed in more than 3000 sites, covering 40 protected areas and several habitat types. Data they collect include images and sounds of hundreds of mammals and birds, and in some areas, tigers and leopards. They have also invested in satellite tracking to acquire information on migration routes of several species. China has also invested in establishing permanent plots where seeds, seedlings, saplings and adult trees are continuously being monitored and analyses such as seasonal dynamics and change of animal abundance are being done. As a result, they have collected information on spatial patterns, population genetics and have published over 500 papers.

Plenary Session 1

Presentation : Tetsukazu Yahara (Kyushu University, Japan)

Dr. Yahara explained the current state of APBON, which is facing a turning point. According to it,

APBON has reached a turning point in four ways: first, S9, the core project of the Ministry of the Environment fund, has been completed in 2016, and second, IPBES 'Asia-Pacific region assessment has ended, which have various disparities remain, and third, confirmation of the achievement status of Aichi targets and new targets are required for COP CDB15 scheduled to be held in Kunming in 2020, and finally the challenge of how to collaborate in the new GEO strategic plan. In the presentation, after reviewing each detail, he said that he would like to actively discuss future directions based on the new work plan.

Presentation：Hiroyuki Muraoka (Gifu University, Japan)

Dr. Hiroyuki Muraoka of Gifu University introduced the outline of the international framework of biodiversity monitoring such as ILTER, GEO, GEOSS, etc., and then explained AOGEO in detail. He introduced the achievements of earth observation development, practice community, capacity building, and so on in Asia and Oceania, which was discussed at the previous GEOSS AP Symposium. In addition, he announced the preparation of the 12th AOGEO Symposium to be held in Canberra, Australia in Nov 2-4, 2019 and the preparation of the next GEO work plan. Presentation: Sheila Vergara (ASEAN Centre for Biodiversity, Philippines) Dr. Sheila Vergara gave a presentation on the progress of implementing the biodiversity Aichi target in the ASEAN region. Specifically, after explaining the outline of ACB, she briefly explained the achievement status of Aichi targets 5 to 11 through tables and graphs. In the second part of the presentation, she introduced projects that are being implemented mainly with other organizations such as ACB and CBD, KBA community, NatureServe and Academia Sinica.

Plenary Session 2

Presentation: Yoshihisa Suyama (Tohoku University, Japan)

Dr. Suyama Yoshihisa of Tohoku University gave a presentation on the next generation biodiversity assessment using MIG-seq. He introduced MIG-seq (multiplexed ISSR genotyping by sequence), observation methods, analytical methods, and MIG-seq and multiplexed DNA barcoding as new tools for biodiversity assessment. The possibility of biodiversity observation evaluation by next generation technology was described.

Presentation: Naoki Tani (Japan International Research Center for Agricultural Sciences, Japan)

Dr. Naoki Tani of International Research Center for Agriculture Sciences, reported on genome scanning of non-model forest species that links the gap between genetic diversity and phenotypic diversity. Among them, he mainly introduced adaptation and prediction to climate change using genome-wide association analysis (GWAS), and how genetic diversity supports biodiversity. He

stressed it would be necessary for biodiversity conservation which is the linkage between genotype and phenotype.

Plenary Session 3

Presentation: Yayoi Takeuchi (National Institute for Environmental Studies, Japan)

Dr. Yayoi Takeuchi gave a presentation on New Work Plan from 2019-2030 and beyond, which co-presented with Dr. Shin Nagai. On her presentation, she gave a presentation mainly from 3 perspectives which are vison, governance and working groups, and strategy. She briefly talked about the vision and APBON missions which we can find from Yahara et al.2014. And she also introduced the APBON's core activities as the working group's agenda. The APBON's core activities include the research and monitoring of biodiversity, networking, outreach activities, capacity building, actions for biodiversity, etc.

Presentation: Shin Nagai (JAMSTEC, Japan)

After Dr. Yayoi Takeuchi's presentation, Dr. Shin Nagai introduced that construction of terrestrial and marine low-trophic level organism database with moderate resolution (4-km, 8-day) and free-cloud (interpolated) data, and it is possible to use the constructed database to see the impact of climate change and human activities on the low-trophic organisms.

After that, Dr. Yahara explained to each working group about the results announcement schedule for the next day, and asked them to make fruitful discussions and summaries.
It was also mentioned that a new work plan would be updated based on the results.

Day 2

Plenary Session 1

At the beginning, Dr. Shin Nagai and Dr. Yayoi Takeuchi explained the outline and schedule of the conference on the introduction of the new APBON work plan. Based on the outline, the following working group(WG) were organized. In addition, the output of the WG will be submitted to the secretariat and presented at the AOGEOS scheduled to be held in November 2019 according to the schedule for strategic planning.

The following breakout sessions were convened:

WG1: Terrestrial biodiversity Working Group (Venue: Acacia room)

WG2: Freshwater biodiversity Working Group (Venue: Peoney room)

WG3: Marine biodiversity Working Group (Venue: Hibiscus room)

The Agenda for each of the working groups was:

1. Monitoring states and changes of biodiversity (networking)
2. Filling gaps in data availability
3. Increasing access to data (data sharing, capacity building)
4. Improving knowledge on cutting-edge technologies
5. Mapping achievements and working plans using the template figure format (including SDGs etc.)
6. Contributions to AOGEO pilot studies 1) Mekong, 2) Pacific islands, 3) Himalaya
7. Raising funds
8. Preparation for report meeting

The discussions of each WG were summarized in the reports on the second day as below. The results of each group were announced by the representatives of each subcommittee, and then discussions were held for the purpose of formulating a new work plan. The outline of each group discussion is as follows.

Freshwater Group: Yuichi Kano (Kyushu University, Japan)

Dr. Yuichi Kano did the presentation about the comparing three representative lakes in monsoon Asia, where is one of the highest rainfall in the world with rich freshwater biodiversity. He compared the Inle Lake, Lake Biwa and Tonle-sap Lake by comparing the features of these 3 Lakes in terms of depth, ancient lake, fishery, sightseeing, flood plain, water quality, rice paddy. And finally he talked about the contribution to AO-GEO pilot studies will be the research on theses 3 lakes and the method of raising funds for AP-BON activities.

Marines Group: Masahiro Nakaoka (Hokkaido University, Japan)

Dr. Masahiro Nakaoka gave a presentation from three perspectives. First, biodiversity research and monitoring, second, network networking, and third, outreach activities, capacity building, and support for network biodiversity. In addition, future activities can be analyzed in a more global context in comparison with P2P by the United States. In addition, as a contribution to the AO-GEO pilot study , four methods were presented, such as monitoring the impact of global change on the ocean, the impact of climate change and human society change. In relation to funding, he said the need to focus on a decade of marine science for sustainable development and create a community to implement strategic funding.

Terrestrial Group: Yayoi Takeuchi (National institute for Environmental Studies, Japan)

Dr. Yayoi Takeuchi made a list according to the agenda presented before the breakout to the subcommittee, and reported the results of the evaluation, action plan, and action items for each item. Among them, restoration of data gaps was cited as a particularly important item, and identification of gaps and input to National BON and NBSAP as solutions to fill the gaps were effective. She also stated that APBON is expected to fill the gap between IPBES, CBD, GEO, WCC and other frameworks. In addition, it is said that an active approach is also required to request continued support from the Japanese ministries who has been provided budgets these years.

Outputs of the working groups were collected by the secretariat and the schedule of the strategic plan (indicated below) will enable the presentation of the strategic plan to the AOGEOS in November 2019.

Day 3

On the morning of the 3rd day, half -day field excursion to the FRIM . And Dr.Lillian Swee-Lian Chu(FRIM) gave a presentation about 「progress on the implementation of the globle strategy for plant conservation」 at Block E1 room of FRIM. At the beginning of the excursion, the participants were provided with an orientation on the Plant conservation strategy of Malaysia in the context of the national targets of Malaysia's National Biodiversity Strategy and Action Plan. After which, the participants were treated to a hike in the riverine forest to observe the performance of the rehabilitated ecosystem that was formerly a tin mining complex. According to the guide of FRIM, the forest, this was an excellent example that the planted forests contributed greatly to regeneration even in areas where mining has progressed and severe environmental destruction has occurred.

After the excursion, participants returned to the workshop venue and a closing session was held. Dr. Sheila, one of the co-chairs, gave the closing remarks and listed the following important achievements of the workshop. First, we identified gaps in various work being done by the APBON community, second, we further recognized the need to understand the causes of biodiversity loss, and third, more data from the Asia Pacific region and recognizing the need to digitize, and finally discussing new strategies for observing the current state and changes in the Asia-Pacific region.

Last but not least, participants agreed to reunite at the APBON Task Group at the AOGEO symposium in Canberra, Australia, where the next regular meeting is scheduled, and the 11th APBON workshop ended successfully.

Plenary Session

Breakout Session

Excursion (FRIM)

Group Photo