

Summary Report

10th AP-BON Workshop

- Outline of the meeting

Date: 6th – 7th July, 2018

Venue: Pullman Kuching, Kuching, Malaysia

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

Participants: 36 persons and 10 nationalities

- Objectives:

- Discussing a new work plan towards 2020

- Outline of the proceedings

<Opening Session>

Hisashi Kawagoe

Director General, Biodiversity Center of Japan

The opening remarks were given by Mr. Hisashi Kawagoe, representing the Ministry of Environment, Japan. He welcomed all participants in behalf of the AP-BON secretariat. He acknowledged attendees from Sarawak Forest Dept and the Sarawak Forest Cooperation and thanked them for hosting the meeting. He acknowledged the Chair and Co-chairs of the meeting. He provided a brief background and achievements of AP-BON since its inception in 2009 and informed the participants that this meeting on the preparation of the next AP-BON workplan was quite important in mainstreaming AP-BON in the global biodiversity conservation agenda.

Tetsukazu Yahara

Professor, Kyushu University, Japan

Dr. Yahara, AP-BON Co-Chair welcomed the participants and expressed his appreciation for their attendance. He underscored the importance of this meeting, recalling its association with the development of the Aichi Biodiversity Targets. He invited the contribution of those present to the workplan on how to improve the state of biodiversity in the Asia Pacific region. In the discussions of

the new three-year workplan (2019 - 2021), he invited those present to craft the next goals of AP-BON.

Jack Liam

Sarawak Forest Department, Malaysia

The Forest Department of Sarawak was represented by Mr. Jack Liam. In his opening remarks, he acknowledged the Chair, co-chairs and all participants to the 10th AP-BON Workshop. He offered apologies for the acting Director of the Forest Department and relayed his greetings. He thanked Dr Yahara for the invitation to the workshop and underscored its networking value to Sarawak. He informed the meeting that Sarawak has great interest in research collaboration and emphasized that outcomes of such collaboration are expected to input into Sarawak's economic strategy. He looked forward to working with AP-BON in the near future.

Keynote Speech : Tetsukazu Yahara

Dr. Yahara provided a background and history of AP-BON, its contribution to global platforms such as the IPBES in way of integrative observations and assessments of Asian biodiversity (forest transitions in SEAsia and its proximate causes; threats of dam construction and global warming upon freshwater fish diversity & comparative studies of marine protected areas including EBSAs), and the identification of gaps. Such gaps include the use of FAO statistics – that may need to be updated with higher resolution information, in the freshwater and marine environments, the location and state of spawning areas, the documentation of changes in areas important to biodiversity in the region. He informed the meeting that were are at this turning point where the IPBES assessments have been completed and gaps identified. He informed the meeting that there is need to assess achievements with respect to the Aichi Targets and develop a workplan to address the gaps identified. He explained the AP-BON approach to networking in the region that is focused on mutual learning. He provided an orientation towards the development of the AP-BON workplan that will be the focus of this two-day meeting. He provided an overview of the proposed strategies in the workplan that include:

- Promote Data Sharing
 - Increase Access to Data
 - Fill gaps in data availability

- Monitoring States and Changes in Ecosystems / Biodiversity
- Use of evolving technologies
- Networking observation sites (Identification of Key Observation Sites)
- Support to Global Platforms
- AP-BON Publication
- Visualization of Observation Information for decision making, policy development and donor organizations / development partners

With these said he invited participants to contribute to the draft workplan. He provided an orientation on the talks and interactions for the next two days.

Presentation: Hiroyuki Muraoka (Gifu University)

Dr. Hiroyuki Muraoka presented some perspectives from GEO. As an introduction he provided a background on GEOSS (Global Earth Observation System of Systems) and the Societal Benefit Areas for which the observations will contribute to. He introduced the GEOSS Platform “GEOSS Portal” that provides information services and resources.

He also informed the meeting of the upcoming activities of AOGEOS in 2018 (joint researches, 11 GEOSS Asia Pacific GEOSS Symposium – Oct 24 – 26, 2018 in Kyoto, Japan, Asia Oceania day on Oct 29) and the upcoming development of the next GEO workplan.

Presentation: Khairulazman Sulaiman (WWF Malaysia)

Khairulazman Sulaiman of WWF Malaysia presented his research on Asian Arowanas in Sarawak. His research investigated the distribution of *Scleropages formosus* in Sarawak and other 9 members of the Osteoglossidae family, their behavior, colors and associated prices, their status in Sarawak and issues related to their survival as these are listed as endangered (IUCN redlist). The species is protected in Sarawak. He described its habitats (freshwater swamps and lakes) where they were historically found (Kenyan, Ulu Kapuas, etc.) but informed the meeting that the fish are and their habitats are incrementally being lost in these Sarawak habitats. He found that several people living in close association with these habitats are selectively breeding some of the red Arowana. Issues identified associated with their loss include transformation of some areas into oil palm plantations, logging, deforestation, accidental catch and he recommended enhanced protection of the species, its habitat through increased support for education, systematic captive breeding, and improving standards for fish assessment.

Plenary Session 1

Presentation: Xu Xuehong (CAS China)

Xu Xuehong from the Biodiversity Committee, Chinese Academy of Sciences presented on the Development of Biodiversity Infrastructure in China in collaboration with Keping Ma. She introduced three ongoing projects: China Biodiversity Observation and Research Network (Sino BON), its datasets on animals, plants and microbes, its national biodiversity observation data sharing platform (17 fields) and networks through Chinese Forest Biodiversity Monitoring Network (CForBio) ; National Specimen Information Infrastructure (NSII) that has millions of unique species related information with over 190 organizations that contribute specimen - related information; Regional Initiative: Mapping Aisa Plants (MAP) launched in 2015 which Xu Xuehong has been the Coordinator. They intend to further their work in improving the database structures based on the information found in checklists, literature, and maps. They are now producing maps on species richness in Asia. They recognize the range of data (data types)being collected by different organizations, and they aim to provide the facility by which these can be integrated.

Presentation: Yusuke Saito (Ministry of the Environment, Japan)

Mr. Yusuke Saito of the Ministry of Environment Nature Conservation Bureau, Biodiversity Center of Japan presented an Overview of the Monitoring Sites 1000 project. He talked about the purpose of the project which intends to conduct long-term quantitative monitoring of Japan's basic ecosystems, publish results in order to assist academic research and develop conservation approaches. The project will be ongoing for 100 years, monitoring some 1,077 sites involving 4,719 surveyors throughout Japan covering land, land-water, and coast (ocean) realms. The project name is based on the estimated number of sites to monitor. Monitoring accuracy was a particular concern such that a survey manual was developed to maintain standards for monitoring for which training courses are carried out to improve the skills of citizen scientists. Reports are prepared annually, summary reports every five years and several publications reflect results of surveys that demonstrate temperature trends, vegetation, growth and trends in growth, habitat and species interactions, distribution and abundance of species, etc. Future prospects include site and survey content expansion, using results for academic research and policy development and maintaining a system to continue long-term surveys.

Presentation: Yongyut Trisurat (Kasecert University)

Dr. Yongyut Trisurat presented on Spatial Planning for protected areas. Among the information that such a planning strategy uses are temperature, annual rainfall for baseline and SimCLIM database + emission scenarios. This way integrated data on drought and flood situations are made available. Implication information are likewise collected to predict land suitability. Population information is

likewise collected. Such planning is also based on SDG Goal 15 and the Aichi Targets. Processed information results to information such as ecosystem shifts and predictions on (new) bioclimatic zones (in the environment of climate change), loss and gain in habitats, changes in occurrence of wildlife, indications of resilience and planned adaptation, etc. He concluded that Climate change indicates a prolonged period of impacts on ecosystems, biodiversity and ESs. Current management and conservation efforts will be affected due to changes in ecological condition thus in-situ observation data and spatial planning at temporal and landscape scales are very important.

Plenary Session 2

Presentation : Tetsukazu Yahara

Dr. Yahara provided a brief orientation on the preparation of the revised AP-BON workplan. Issues raised:

1. Participation of the Pacific (Dr. Dedy)
2. high turnover of participation (Dr. Alice)
3. participation of central and west Asia (Mr. Mangal)
4. Pilot project on linking to Oceania, Himalayas (Mr. Mangal)
5. AOGEOSS - Himalayan GEOSS focus in collaboration with ISIMOD (Dr. Muraoka)
6. GBIF Training Course organized in SPREP - Mark suggested get in touch with them. (Dr. Muraoka)

Then Dr. Yahara also presented results of the Networking forest plot observations as the lead botanist of the project. He raised the issue of gaps in data management such as one-time sampling, storage of data in personal holdings. To address the issue, he developed a protocol on data collection and data sharing to include sharing of old data to increase data availability of from plots within protected areas. He also demonstrated some analyses, publication of results, particularly those of; a) new species discovered and described, b) results of studies conducted inside protected areas in Southeast Asia and observations on changes in ecosystems and habitats in several study sites in the region (species richness, forest community structure, phylogenetic distance).

He informed the meeting of the need to collaborate to describe new species as this could not be undertaken by a single person. He also suggested a training course on describing species. He emphasized the need to link interests with needs such as the interest of scientists and the needs of society.

Presentation: Tohru Nakashizuka (Research Institute for Humanity and Nature)

Dr. Tohru Nakashizuka of the Research Institute for Humanity and Nature introduced “On Trait-based mapping of forest function- Spatio” which indicate temporal resolution and accuracy of ES /

NCP assessment including scenario analyses were required for decision making linking species data with ES and climate. He also presented the functional traits measured such as target species, FT measured (16 FTs) and literature resources.

As well as a map of these traits that were combined in particular configurations to present information for specific preferences such as pollination efficiency (services), forest potential to provide honey or model some scenarios like what would happen if all primary forests were converted to secondary forests.

Presentation: Yuichi Kano (Kyushu University)

Dr. Yuichi Kano presented some strategies of freshwater observations. Taking off from his earlier presentations, he suggested that the next steps are on the actions necessary to pursue his research in freshwater fishes. He presented the drivers of freshwater fish biodiversity and the habitats in SEAsia. To monitor these he suggested 3 sites: Inle Lake, Thailand and Chaopraya River. The expressed methods are: Direct field survey by sampling and/or snorkeling at defined area, 2. Market survey 3. Environmental DNA (but not appropriate at acid peat swamps)

Presentation: Takehisa Yamakita (JAMSTEC)

Dr. Yamakita presented some strategies of coastal observations. He underscored the need for networking among marine scientists, particularly those that are in existence such as the SEAsian seagrass network, the Indo-Pacific Seagrass network (IPSN), those who conduct socio-economic studies in coastal areas, he specifically mentioned the GCRMN an international network on coral reefs. In addition he proposed the development of synthesis data by harvesting / automatic extraction of data from existing sites and resources including the IUCN.

Presentation: Sheila Vergara (ASEAN Centre for Biodiversity)

Dr. Sheila Vergara gave a presentation on the visualization of indicators a project proposed in collaboration with NatureServe Dashboard that intend to provide conservation practitioners and policy makers with a quick view of the state and trends of biodiversity and conservation actions at regional, national, river basin and site scales. Through charts, graphs, and maps, the Dashboard assembles information on a range of factors that reflect trends in the health of species and ecosystems as well as the threats to biodiversity. Indicators visualized on the Dashboard can support reporting on progress toward MEAs, prioritizing deployment of conservation resources and distinguishing the most effective actions that contribute to improving biodiversity conservation.

After this, participants were separated into three working groups then discussed in their particular topics. The discussions of each group will be reported in the minutes of first session of Day 2.

WG1: Terrestrial biodiversity Working Group (Venue: Olympia)

WG2: Freshwater biodiversity Working Group (Venue: Eiffel 1)

WG3: Marine biodiversity Working Group (Venue: Eiffel 2)

Day 2

Plenary Session 1

Dr. Yahara introduced the second day agenda where the working groups will present their outputs and the rest of the day will be spent on updating new workplan.

Freshwater Group: Yuichi Kano

The Freshwater group suggested a “cheaper and simpler” framework. They proposed four candidate monitoring sites in the region as follows;

- Inle Lake Myanmar
- Ubon Ratchathani,
- Baleh River Sarawak
- Stun Treng

Stung Treng is strategically located below the Khone Falls, Mekong River, and below the dam; Ubon Ratchathani is above the Knobe Falls, was between the planned dams and is a known spawning site; Inle Lake is an ancient lake with many endemic species, has some alien species spreading; Upper Baleh River was almost pristine forest, a large dam is planned to be constructed downstream and is the habitat of the Tor fish (aruana) and important freshwater fish in Borneo. They presented the monitoring method by;

1. Field sampling using a consistent sampling effort;
2. Market survey to derive nativeness index, healthiness index and wildness index.
- 3.Environmental DNA
4. Bongo net for larvae.

He presented a matrix on must, try, by chance sampling per proposed site. Results of the research will be published.

Terrestrial: Kaoru Kitajima (Kyoto University)

The group has discussed how to move to the next phase, as 2020 (in the context of the Aichi biodiversity targets) approaches. There are three common concerns such as; how to build on to accumulated activities of AP-BON to date, what are gaps and challenges and how to decide the super sites (or master sites, if we adopt the term from ILTER)

In order to treat those concerns, firstly the links to ILTER, IPBES, CBD-COP, and policy relevance are obviously important. Next, in selection of super/master sites, not only the high diversity or endemism, but representativeness of the selected sites (for the region or ecosystem/community type), and usefulness for capacity building, should be considered. Thirdly a holistic approach, encompassing plants, animals (mammals, insects) and soils, phenology, ecosystem aspects (e.g., microclimate), traditional ecological knowledge, landscape perspective, should be integrated in monitoring (integration of terrestrial-freshwater-marine, possibly via remote sensing, and have sites grouped). Doing so, do not forget the stakeholders (esp. benefits to local communities, how do they benefit from the monitoring activities) (link to MAB of UNESCO). Many participants recognize the multitudes of challenges for data sharing, and stress the importance of standardization of methods.

Marine: Takehisa Yamakita

The first discussion was on why does society need an AP mBON? It is because the urgent need to know what is happening to marine biodiversity in the Asia-Pacific region.

This region has the highest density of terrestrial, freshwater and marine species on Earth. The second was on how was it responding to climate change, how are species of economic and ecological importance changing, then how are communities changing, how will these changes affect food webs and ecological interactions.

Demand for evidence to support progress towards SDG and Aichi Targets; Demand for input to IPBES and UN World Ocean Assessment ;Preparations for the Decade of the Ocean 2020-2030 are underway. AP mBON will contribute to AP-BON, MBON of GEO BON, GBIF, OBIS IPBES WoA.

Plenary Session 2

After the report from each working group, Dr. Yahara suggested to discuss about new strategy draft suggested by co-chairs. After introductions of history, mission, core values, achievements and challenges, it was stressed that the importance of data sharing, activities of national BON and method of assessment. Based on the discussion above, the new or ongoing projects were announced as follows.

Project 1: Promoting plant diversity assessments in tropical Asia

Project 2: Promoting freshwater fish assessments in tropical Asia

Project 3: Promoting coastal biodiversity assessment in the Asia-Pacific sea area

Project 4: Promoting coordinated observations of phenology and terrestrial ecosystem functions
by multiple networks

Project 5: Developing Tailor-fit Indicators and Visualization Tools to Address ASEAN Reporting
Obligations to Multilateral Environmental Agreements

Project 6: Monitoring of biodiversity sustainability by networking plots, programs and conservation areas

The progress will be reported or shared in forthcoming 11th GEOSS AP Symposium in Kyoto on December.

