

Summary Report

8th AP-BON Workshop

Title : The 8th Asia-Pacific Biodiversity Observation Network Workshop

Date : 12th -13th September, 2016

Venue : Academia Sinica, Taipei, Taiwan

Participants: 32 (8 countries and regions)

<Objectives>

1. To share information on biodiversity research and assessment activities, country and regional reports
2. To develop a new work plan for AP-BON(2017–2020)
3. To promote networking observation sites collaborated with International Long-Term Ecological Research Network (ILTER)
4. To promote data sharing, motivations for data sharing
5. To promote development of tools for sharing and managing data

< Summary of workshop >

Day 1

Opening Remarks

On behalf of AP-BON Secretariat, Mr. Hisashi Kawagoe, Director of Biodiversity Center of Japan, Ministry of the Environment(MOE-J), opened the workshop. The Director stressed the increasing importance of managing, sharing, and publishing biodiversity data which can be used in decision making and policy making. The Director also hoped that the participants could exchange their views on how to contribute to GEO BON and IPBES (The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services).

Session 1: Introduction of 8th AP-BON meeting

Dr. Tetsukazu Yahara (Kyushu University, Japan)

Dr. Yahara briefly talked about the history of AP-BON, the contribution of AP-BON to IPBES and the role of AP-BON in collaboration with GEO BON.

Dr. Yahara introduced the MOEJ-sponsored core project S9 which collected biodiversity data in several sites in Asia.

Dr. Yahara emphasized the meaning of the workshop, in regard with the need and urgency to collect and list the biodiversity data.

Session 2: Self-Introduction of new participants

In this session, new participants briefly introduced themselves, their research interest, and current projects.

Session 3-1: Recent Progress in soundscape monitoring, camera trap, and UAS (Unmanned Aerial Systems) Data Management & Observation Systems for AP-BON

Dr. Yu-Huang Wang (Academia Sinica, Taiwan)

The 2014 Asian Soundscape workshop encouraged participants to use five-minute recording files with detailed metadata. According to Dr. Wang, all data and information could be published, shared, and recorded through GBIF(Global Biodiversity Information Facility) network. Dr. Wang encouraged the participants to consider how to archive and analyze these big data from a long-term perspective.

Session 3-2: Biodiversity monitoring activities in Taiwan Listening to the wild: Ecoacoustics and wildlife biodiversity through soundscape information

Dr. Tzu-Hao Harry Lin (Academia Sinica, Taiwan)

Measuring the complexity of acoustic signals could help ascertain the biodiversity within an area and this approach provided the opportunity to explore the variability of acoustic world and biodiversity of calling animals. Probability distribution of each soundscape event and scene could be deployed to calculate the diversity of the soundscape. By using algorithms, a researcher could establish sound catalogues and send them to other researchers to investigate occurrences of different kinds of animals.

Monitoring of Ultra-soundscape

Dr. Mao-Ning Tuanmu (Academia Sinica, Taiwan)

The soundscape ecology is a field focusing on how nature processes and anthropogenic activities changed the sounds emanated from landscapes. The focus of the field had been on audible sounds that humans could hear and sometimes on infrasound. However, ultrasounds produced by animals, such as bats could also serve as a very important indicator for biodiversity.

Asia Pacific Regional Distributed Collaboration Infrastructure for AP-BON

Dr. Eric Yen (Academia Sinica, Taiwan)

The huge data produced by the Large Hadron Collider gave birth to the Worldwide LHC Computing Grid (WLCG), the distributed infrastructure for sharing and analysis. Since 2005, WLCG had been expanded to other disciplines. This technology of distributed infrastructure had been deployed by other research projects such as Life Watch.

(Conclusion)

Dr. Yu-Huang Wang concluded the session with some suggestions.

- Scientists need to collaborate to share, analyze, review, and manage data to create synergies in the cloud age.
- Accessing grid computing and shared resources were necessary to seek for synergy.
- Data and information management required the standard methods, open data, sharing and reusing existing resources, and saving and sharing resources.
- It is important to establish collaborative observation network.
- Cross domain collaboration between biodiversity and information communication technology is important.

Session 4-1: New GEO BON structure towards 2020

Dr. Laetitia Navarro (GEO BON)

Dr. Laetitia Navarro had become the new executive secretary of GEO BON on 1st September 2016. The vision and mission of GEO BON, the endorsement criteria of BONs and the three types of BONs (national, regional, and thematic) were introduced. She presented the previous structure and then explained the activities that were held to contribute to the current structure of GEO BON.

Session 4-2: Opportunities and challenges for linking the activities of Biodiversity Observation Network (BON) and Long-Term Ecological Research (LTER) at regional as well as global level

Dr. Eun-Shik Kim (Kookmin University, Korea)

Dr. Kim introduced IPBES as a major global event, and its four functions. The issues related to GEO BON implementation, niche of observation in GEO BON and the ultimate BON model for global networking were discussed. Dr. Kim also referred to the Long Term Ecological Research (LTER) network activities with BON activities at regional and global levels. Regarding the details, the goals of LTER science, categories and criteria for evaluating the status of LTER networks such as governance, sustainability, and services – giving back to society was introduced.

Session 5-1:

Recent development on biodiversity observations and conservation: LTER Perspectives

Dr. Hen-Biau King (Taiwan Ecological Research Network: TERN)

Dr. King introduced the background of the loss of biodiversity with the evidence supported by other scientists' research for the problem of climate change, invasive species and the taxonomy. As the urgent research topics, species need to be identified before their habitats being destroyed, and Acoustic tool are very powerful in identifying species.

The importance and Future Trends of Sharing Data on Biodiversity and Ecosystems: A Regional Perspective

Dr. Chau-Chin Lin (Taiwan Forestry Research Institute)

The availability and sharing data are the only ways to address complex, large scale and long-term environmental challenges. Data sharing also improves data quality and enables new science by hosting workshops to promote a data sharing culture.

Session 5-2:

Mobilizing Biodiversity Data from ASEAN Protected Areas (GBIF Grant/ Biodiversity Information Fund for Asia, BIFA)

Dr. Sheila Vergara (ASEAN Centre for Biodiversity, Philippines)

Dr. Vergara introduced the orientation workshop on mobilizing Biodiversity Data from ASEAN Protected Areas. Currently, there were now 38 ASEAN Heritage Parks (AHPs), which are usually supported by national governments to collect information, so it was ideal to start collecting information from AHPs. In addition, as the expectation of AHP, such as increasing availability of biodiversity information, increasing the awareness of camera trap deployment, promoting the decision making and policy development on the base of scientific information.

Day 2

Session 1-1: Data sharing in AP-BON: points to be discussed

Dr. Yahara

Dr. Yahara introduced the forthcoming discussions from which a new work plan for AP-BON (2017 – 2020) could be developed. These will include: 1) Promoting data sharing, which include data tagged with species-name, other ecological data geo-referenced and maps and satellite images 2) networking observation sites collaborated with ILTER 3) collaboration with IUCN 4) contribution to IPBES and CBD (Convention on Biological Diversity).

Session 1-2: Fish Base

Dr. Christine Marie Casal (Fish Base, Philippines)

Dr. Christine Marie Casal explained the outline of FishBase in which the information and tools being used. She introduced the current status for ASEAN freshwater species. AquaMaps utilizes environmental envelopes to locate where the species might be. The number of mapped fish species in Global Freshwater AquaMaps was not ideal compared with that of the marine. It is necessary to develop an authoritative classification for the species of freshwater basins.

(Discussion)

Dr. Vergara commented ACB also collaborated with FishBase for fishes in the AESEAN region. AP-BON plays important role in promoting data sharing, network and collaboration.

Dr. Yahara also commented it was important to observe states repeatedly in the same location. He asked the type of approach to update fish data.

Dr. Casal replied they would put them in once new species were discovered or newly introduced species reported, data were uploaded every two months.

Session 1-3: Database of freshwater fish in mainland SE Asia

Dr. Yuichi Kano (Kyushu University, Japan)

Dr. Kano explained the three local databases that he was managing after introduction of his recent activities about the database and his recent published paper covers Japan, Thailand, Cambodia, Laos, Vietnam, and China. This paper investigated into dams and global warming issues in the Mekong region.

Session 2: Discussion on Data Sharing in AP-BON: points to be discussed

Dr. Yahara invited discussion on motivation such as incentives and interests for data sharing. For the future effort, Dr. Yahara also suggested the Asian Tree Database that would include a checklist, specimen images, collaboration on taxonomy, capacity building, and data summaries (counts, threat status, hot spots). He concluded by introducing examples of global platforms such as Tree of Life: One Zoom, EOL, Discover of Life and the Map of Life.

(Discussion)

Dr. Huang expected AP-BON as an infrastructure of capacity-building and providing training, contributing to the database, since some Southeast Asian countries do not have the infrastructure to collect small mammal specimen or acoustic recording.

Dr. Vergara agreed and commented that there were various needs across the region, so capacity building and infrastructure were very important for interoperability of data.

Dr. Yahara pointed out that it was not difficult to create a checklist or images, and maybe GBIF could provide it.

Dr. Lin said the necessity of some comprehensive standards for all fields so that it would not be a problem of connecting databases of different fields in the future. In this sense, we needed to think about kinds of observation such as BON as an observation site.

Dr. Yahara added that the purpose of regional BONs was to observe repeatedly in the same region and document how global diversity was changing.

Ms. Navarro responded that GEO-BON had the concept of EBVs which were the building blocks and indicators. The EBV development would be done at different working groups of GEO-BON and then transfer to regional BONs for them to implement observations and share tools.

Dr. Yahara said the difficulty lies with identification. Species identification cannot use the standardized protocol. Sometimes it does not work. Therefore, we need to develop a good identification system shared by researchers in Asia.

Dr. Ishii said AP-BON did not have the power to force people who were not interested in this large-scale collaboration project to share data yet, how AP-BON could be the one which give recommendations to national governments to provide incentives or promote to share researchers' interest.

Dr. Yahara responded to this concern saying researchers and scientists from different fields did not necessarily share the universal interest. For researchers working on tree species, they might have huge amount of data but were not willing to share them. It truly was a problem when it comes to creating such a mechanism to encourage data sharing.

LTER collaborations: points of discussion

The session was opened with introduction of the points to be discussed: how to update plot data, how to develop plots in plot-poor countries as Vietnam and how to observe changes in more unstable forests. Dr. Yahara showed maps of deforestation in Southeast Asia and the need for updating these maps of deforestation to complete IPBES assessments, talked about the use of plot data, and composition data.

(Discussion)

Dr. Lin had questions about Forest inventory plots and Smithsonian dynamic plots, because these two kinds of plots were much different systems with different protocols.

Dr. Yahara answered that the plots are mostly inventory plots. Currently, we do not have any good system to operate on.

Dr. Sam said that they have done some primary analysis on tree distributions. They currently do not have the resources to establish smaller plots in species rich area.

Dr. Yahara pointed out that funding is needed to develop new plots, of course, there are many plots in Malaysia and Indonesia. Most researchers cannot access locations of inventory plots or those who have the data. The idea should be to provide a simple database to start with.

Dr. Vergara said that clearing house mechanism development varies among Southeast Asian countries. There must be a commitment from the national level to encourage plot data sharing.

K-BON Activity, Now and for the Future

Dr. Chan-Ho Park (National Institute of Biological Resources, Korea)

Dr. Park made a brief introduction on K-BON and its activities in collaboration with the Global Taxonomy Initiative (GTI) and ESABII.

Session 3-1: Update WCC and linking IUCN with AP-BON

Mr. Mangal Man Shakya (Wildlife Watch Group, Nepal)

Mr. Shakya introduced the WCC and its purpose as well as the activities and workshops.

Session 3-2: Developing a site network of long-term biodiversity observation in AP region

Dr. Reiichiro Ishii (Research Institute for Humanity and Nature, Japan)

Based on the experiences with J-BON over the past 7 years, he introduced the international programs on biodiversity and its spatial scales such as GEO-BON, IPCC, IPBES, and Future Earth etc. to fill in the gap between those differences. If GEO-BON decided to use Essential Biodiversity Variables (EBVs) to compare across different regions or time, some local scientists might be able to provide within their biodiversity database at a very low cost. Then he raised question again who would pay for the cost of gathering extra information if extra information was needed to meet the requirement from GEO-BON.

Session 4: AP-BON work program 2017-2020

Dr. Yahara

Since the rapid deforestation in SE Asia was being observed, Dr. Yahara presented some personal ideas about how they could appeal to policy making. Firstly, the role of IPBES assessments which should include some aspects such as genetic diversity, species diversity and ecosystem. Secondly, As general information of declining species examples he introduced Sumatran rhino (loss of habitat), serious forest fire and haze in SE Asia (Indonesia and Singapore), invasive alien species (weeds, insects, and pathogens), avian flu (diversity of

the viruses, new viruses are evolving), global diversity patterns for threatened and narrow-range migratory species and so on. Then, he also introduced the current efforts of scientists and the organization, mentioned that IPBES assessment assessed not only biodiversity, but also bio-cultural diversity such as linguistic diversity in Papua New Guinea. Lastly, he introduced the environmental Kuznets curve hypothesis saying that upon economic growth, at first forest coverage decreases, but after a turning point, it will increase. According to his introduction, the forest coverage was decreasing in SE Asia but increasing in western & central, south, and East Asia as well as Oceania, it meant that the increase of forest coverage did not indicate the recovery of biodiversity.

(Discussion)

Dr. Vergara stressed the sustainable development goals, or other global agreements to have a structure or indicators for data which responded to Aichi Target. She also referred to the implications of rehabilitation, the forest rehabilitation in Southeast Asia was declining generally. Although Vietnam and the Philippines were making progress in forest restoration, there had been little impact.

Dr. Yahara agreed it with saying that two targets for CBD COP 10 for 2020 had been halted, it might be a turning point.

Dr. Darnaedi added that the lifestyle in Asia Pacific was changing and had pressured the environment so it would consume more energy, therefore the turning point might not come quick.

Dr. Ishii agreed and mentioned that the turning point depended on the spatial scale. In fact, trades had been occurring in the way of domestic use, woods were not chopped down only for domestic use. They were chopped down by the companies that were trading with developed countries. Trades within Asia were intensive than another region. If we include that, we might have a different approach. We might consider changing the scale to know how to optimize sustainability.

Session: Summary

Dr. Vergara

Dr. Vergara presented a summary of the presentations over the past two days, the workshop was closed.

[End]