



# Fifth Meeting of the Asia- Pacific Biodiversity Observation Network (AP-BON) Report



# **REPORT OF THE 5<sup>TH</sup> MEETING OF THE ASIA-PACIFIC BIODIVERSITY OBSERVATION NETWORK (AP-BON)**





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**5<sup>TH</sup> ASIA PACIFIC-BIODIVERSITY  
OBSERVATION NETWORK (AP-BON) MEETING**

25-28 November 2013, Laguna, Philippines

**MEETING SUMMARY**

The 5<sup>th</sup> meeting of the Asia-Pacific Biodiversity Observation Network (AP-BON) was held in Los Baños, Laguna from 25 to 28 November 2013.

Co-organized by the Government of Japan's Ministry of the Environment and the ASEAN Centre for Biodiversity (ACB), the meeting gathered representatives of key organizations who have, common among them, the mandate to conduct biodiversity observations.

As he welcomed and thanked the participants for their participation, Atty. Roberto V. Oliva, executive director of ACB, underscored the importance of working together to provide tools for data integration and analysis as well as improve the delivery of biodiversity information to users such as government agencies, conservation organizations, decision makers, researchers, and the general public. He also reaffirmed ACB's commitment to support AP-BON's key goals of observing and assessing biodiversity changes in the Asia-Pacific region where biodiversity loss is rapidly happening; and developing effective plans for the conservation and sustainable use of biodiversity.

Dr. Theresa Mundita Lim, director of the Philippines' Protected Areas and Wildlife Bureau (PAWB), also welcomed the participants and lauded the AP-BON for its key role in the fulfillment of the Aichi Biodiversity targets. She said that there is indeed a great challenge to promote sharing and delivery of biodiversity information resources, especially in our region. She also highlighted that the outputs of the meeting will help promote the resilience of ecosystems in the Asia-Pacific region.

For his part, Mr. Ryuji Nakayama, director of the MoEJ's Biodiversity Center, emphasized that the meeting aims to discuss biodiversity information sharing in the Asia-Pacific region, noting the need to conduct assessments of gaps in biodiversity information – an issue identified at the COP 11 in India. He hoped that the discussions will be useful towards appropriately managing biodiversity information in the ASEAN region; creating stronger linkages among AP-BON, the Group on Earth Observations Biodiversity Observation Network (GEOBON), the Global Biodiversity Information Facility (GBIF), and the Convention on Biological Diversity (CBD). He added that the urgent issue is to provide adequate information on biodiversity to decision-makers in order to allow them to make appropriate decisions based on such information.

Mr. Tetsukazu Yahara discussed the rationale and objectives of the meeting. He stressed that ecosystems and biodiversity should be linked. He added that species have very important function to ecosystems.

Dr. Sheila Vergara discussed the meeting methodology; particularly the sequence of presentations. She also said that the team needs to craft recommendations after the meeting. She also mentioned how AP-BON can best contribute to the Conference of the Parties (COP).

Day One of the meeting focused on the assessment of gaps in biodiversity information and find ways to generate and share these information. A series of presentations and discussions were made about the current biodiversity observations in the Asia-Pacific region as well as data holdings and gaps in biodiversity information availability and sharing.



In terms of structure, the meeting participants identified the lack of collaboration on data among institutions and the variations in database structures as key challenges. They believe that the differences in formats pose a challenge because they make access to data difficult and limit our ability to conduct meaningful regional or global assessments. Examining the gaps in content, process, and collection circumstances and efforts, the participants highlighted that there are too many species, but too little time. As a result, some species become extinct even before they are surveyed. The lack of funds to conduct comprehensive surveys was also identified as an issue.

Discussing proposals on how to collect and share biodiversity information in the Asia-Pacific region, the participants identified publishing information through AP-BON publications, magazines, and digital museums as an important step. An equally significant recommendation is to build capacity in the region in the area of species-based analysis, biodiversity observation at the national level, developing a consolidated list of threatened species, and using a system to monitor ecosystem services. One recommendation is to use ACB as a platform for capacity building activities and assessments. Other proposals include demonstrating the use of data and information collected in the region, supporting continuing inventories, collaborating through models such as S-Net of Japan and the ABCD Network.

On furthering the work of AP-BON, the participants said this could be done by encouraging the creation of more biodiversity observation networks, conducting gap analysis among AP-BON countries, using AP-BON to support IPBES and GBIF, and preparing AP-BON products to support GEOBON. To generate more support for AP-BON, the meeting participants underscored the need to mobilize support from members of the International Union for Conservation of Nature (IUCN). Also highlighted were the need to make the most out of the utility of the databases that the AP-BON members organize, focusing on the needs of target stakeholders such as policy makers, and building interest in AP-BON.

Day Two of the meeting focused on the compilation and publication of regional RedList data and possible AP-BON data products. Following discussions on the niche of APBON and targeting multilateral environmental agreements and initiatives such as the CBD, GEOBON and IPBES, the meeting participants identified a number of project options, including Key Biodiversity Areas (KBAs) and related processes, regional RedLists, essential biodiversity variables, and fund assessments and databases for mosses.

In support of efforts to better promote the work of AP-BON, the participants identified upcoming meetings where AP-BON can be highlighted. Among these meetings are SBSTTA 18, CBD COP-12, GEOSS meetings, and GBIF 21.

The ideas and recommendations gathered from the meeting will be presented to the Steering Committee and the Working Groups. Nepal offered to host the next AP-BON meeting after COP-12 either by end of 2014 or early 2015.

**REPORT OF THE 5<sup>TH</sup> MEETING OF THE  
ASIA-PACIFIC BIODIVERSITY OBSERVATION NETWORK (AP-BON)  
25-28 November 2013, Laguna, Philippines**

**INTRODUCTION**

The fifth meeting of the Asia-Pacific Biodiversity Observation Network (AP-BON) was held at the SAS Hall, SEARCA, Los Baños, Laguna, Philippines on 25 to 28 November 2013.

Co-organized by the Government of Japan's Ministry of the Environment and the ASEAN Centre for Biodiversity (ACB), the meeting gathered representatives of key organizations who have, common among them, the mandate to conduct biodiversity observations.

The Meeting was chaired by Dr. Sheila Vergara, Director, Biodiversity Information Management (BIM), ASEAN Centre for Biodiversity (ACB); and attended by: Atty. Roberto V. Oliva, Executive Director, ACB; Mr. Ryuji Nakayama, Director, Biodiversity Center of Japan, Ministry of the Environment Government of Japan; Dr. Tetsukazu Yahara, Center for Asian Conservation Ecology, Kyushu University, Japan; Ms. Armida Andres, Chief, Planning Division, Protected Areas and Wildlife Bureau, Philippines; Dr. Mariano Roy Duya, Diliman Science Research Foundation; Dr. Tsuyoshi Hosoya, National Museum of Nature and Science, Japan; Dr. Dedy Darnaedi, LIPI, Indonesia; Dr. Mangal Man Shakya, Wildlife Watch Group (WWG), Nepal; Dr. Motomi Ito, University of Tokyo, Japan; Dr. Saw Leng Guan, Forest Research Institute Malaysia; Dr. Eun-Shik KIM, Kookmin University, Korea; Mr. Suman Jaiswal, International Centre for Integrated Mountain Development, Nepal; Dr. K. N. Ganeshaiah, University of Agricultural Sciences, India; Dr. Ibrahim Djamaluddin, Kyushu University, Japan; Dr. Yuichi Kano, Kyushu University, Japan; Dr. Keping Ma, Institute of Botany, Chinese Academy of Science; Ms. Emily Capuli, Fishbase Information and Research Group, Inc.; Dr. Benito Tan, National University of Singapore; Dr. Takeshi Osawa, National Institute for Agro-Environmental Sciences, Japan; Dr. Tsuyoshi Hosoya, National Museum of Nature and Science, Japan; Dr. Yu Huang Wang, Taiwan Forest Research Institute, Taiwan; Dr. Edwino Fernando, University of the Philippines Los Banos; Ms. Lilibeth Cabebe, BIM, ACB; Ms. Karen Lapitan, Communication and Public Affairs (CPA) Unit, ACB; Ms. Pamela Q. Reblora, CPA, ACB; Ms. Erica Villavelez, BIM, ACB; Mr. Jerome Alano, BIM, ACB; Ms. Rea Anne Rañada, BIM, CPA; Ms. Angela Metin, CPA, ACB. The complete list of participants is attached as [ANNEX 1](#).

The Meeting was held in plenary.

## **Day One – 26 November 2013**

### **OPENING PROGRAMME**

As he welcomed and thanked the participants for their participation, Atty. Roberto V. Oliva, executive director of ACB, underscored the importance of working together to provide tools for data integration and analysis as well as improve the delivery of biodiversity information to users such as government agencies, conservation organizations, decision makers, researchers, and the general public. He also reaffirmed ACB's commitment to support AP-BON's key goals of observing and assessing biodiversity changes in the Asia-Pacific region where biodiversity loss is rapidly happening; and developing effective plans for the conservation and sustainable use of biodiversity. The full text of the message is attached as [ANNEX 2](#).

Dr. Theresa Mundita Lim, director of the Philippines' Protected Areas and Wildlife Bureau (PAWB), also welcomed the participants and lauded the AP-BON for its key role in fulfilling the Aichi Biodiversity targets. She pointed to the great challenge faced by the region in promoting sharing and delivery of biodiversity information resources. She also highlighted that the outputs of the meeting will help promote the resilience of ecosystems in the Asia-Pacific region.

For his part, Mr. Ryuji Nakayama, director of the MoEJ's Biodiversity Center, emphasized that the meeting aims to discuss biodiversity information sharing in the Asia-Pacific region, noting the need to conduct assessments of gaps in biodiversity information – an issue identified at the COP 11 in India. He hoped that the discussions will be useful towards appropriately managing biodiversity information in the ASEAN region; creating stronger linkages among AP-BON, the Group on Earth Observations Biodiversity Observation Network (GEO BON), the Global Biodiversity Information Facility (GBIF), and the Convention on Biological Diversity (CBD). He added that the urgent issue is to provide adequate information on biodiversity to decision makers to enable them to make appropriate decisions based on such information.

Dr. Tetsukazu Yahara discussed the rationale and objectives of the meeting. He stressed that ecosystems and biodiversity should be linked. He added that species have very important function to ecosystems.

Dr. Sheila Vergara discussed the meeting's methodology, particularly the sequence of presentations. She also said that the team needs to craft recommendations after the meeting. She also mentioned how AP-BON can best contribute to the Conference of the Parties (COP).

This was immediately followed by the introduction of participants.



## THE HISTORY OF AP-BON

### ***PRESENTATION 1: AP-BON History and Strategy***

Dr. Tetsukazu Yahara traced the history of AP-BON and its relationship with the GEO BON. Among the key activities discussed were the publication of the AP-BON book, the International Workshop on Freshwater Biodiversity Conservation in Asia, the International Symposium on Biodiversity in Changing Coastal Waters of Tropical and Subtropical Asia, and database construction for data sharing.

He also discussed the AP-BON strategy which focuses on conducting networking activities directed at biodiversity observation and will bring synergy in conservation of biological diversity at the local, national, regional and global levels. His PowerPoint presentation is attached as [ANNEX 3](#).

## **PRESENTATIONS ON CURRENT BIODIVERSITY OBSERVATION IN THE ASIA-PACIFIC REGION**

### ***PRESENTATION 2: State of Biodiversity Observation in the Philippines***

Ms. Armida Andres, Chief, Planning Division, PAWB, presented an overview of the Philippines' biodiversity, including status, recent endemic species discoveries, trends and threats, and the updating of the Philippine Biodiversity Strategy and Action Plan. She also presented the Philippines' inventory programs that cut across various ecosystems and species.

On examining the obstacles faced in the area of information sharing, Ms. Andres reported the lack of a systematic reporting system and a database that can help manage information needed for decision making. She also mentioned the difficulty encountered in gathering updated information from data holders. Despite these challenges, she highlighted that the Philippines looks forward to opportunities such as the Biodiversity Information Sharing Network which was organized to facilitate information exchange and provide data to the Philippines Clearing-House Mechanism (CHM). Her presentation is attached as [ANNEX 4](#).

***PRESENTATION 3: Inventory and Assessment of Biodiversity in Mounts Iglit-Baco Mountain Range: Mount Masulong Key Biodiversity Area***

Dr. Mariano Roy Duya, biologist at the Diliman Science Research Foundation, Inc., presented the assessment of flora and fauna in Mounts Iglit-Baco, Mount Masulong Key Biodiversity Area conducted by the University of the Philippines Biology Department and the Diliman Science Research Foundation, Inc. According to Dr. Duya, the research team finds it imperative that protection measures of the remaining forest patches in Mindoro be set in place to ensure continuous survival of the island's biodiversity assemblage. He mentioned that one strategy that can be adapted is declaring the area as an Indigenous Community Conserved Area.

Asked about the level of information that the locals in the KBA know about the species in the Red List and their importance in protected areas, Dr. Duya explained that most of the communities were consulted when the KBAs were identified. Consultations, he said, are conducted to gather feedback on how the locals can work together and how they can manage on their own. This presentation is attached as [ANNEX 5](#).

***PRESENTATION 4: Current Biodiversity Observations in the Asia-Pacific Region***

Dr. Tsuyoshi Hosoya from the National Museum of Nature and Science in Japan introduced the museum, its major functions, departments, collecting activities, and data publication flow. A copy of his presentation is attached as [ANNEX 6](#).

***PRESENTATION 5: Current Biodiversity Observations in Indonesia***

Dr. Dedy Darnaedi, tropical botanist at the Herbarium Bogoriense, Research Center for Biology, Indonesian Institute of Sciences (LIPI), shared key facts about Indonesia's rich biological resources. His presentation focused on flora, natural forest ecosystems, ecosystem diversity, and endemic species. A copy of the presentation is attached in this report as [ANNEX 7](#).

***PRESENTATION 6: Promotion of the Network Activities for the Biodiversity Observation in Nepal and Region***

Dr. Mangal Man Shakya from Nepal's Wildlife Watch Group (WWG) introduced the organization's functions as a watchdog in the area of biodiversity conservation. Presenting WWG's N-BON activities, he shared the group's experience in performing conducting biodiversity observation by assessing the impact of climate change on flora and fauna in Nepal's protected areas. These activities, he said, were performed at the Parsa Wildlife Reserve, the Shivapuri-Nagarjuna National Park, and Langtang National Park with Nepal's Ministry of Forest and Soil Conservation and the International Union for Conservation of Nature (IUCN). Future biodiversity observations are planned in Ramsar sites and World Heritage sites.

Dr. Shakya also recommended key activities including gap analyses for AP-BON countries, networking of AP-BON by sub-region and by country, and preparation of AP-BON reports by sub-region and by country. He also underscored the importance of crafting strategic action plans and roadmaps as well as boosting promotional efforts for AP-BON activities. Dr. Shakya's presentation is attached as [ANNEX 8](#).

***PRESENTATION 7: Current Activity on Biodiversity Observation Data Archiving in Japan***

Dr. Motomi Ito from the University of Tokyo shared information on Japan's activities related to the creation and archiving of biodiversity data. Topics covered in his presentation were the Asia-Pacific Plant Diversity Assessment in Terrestrial Ecosystem (APDATE); the Global Earth Observation System of Systems (GEOSS); and the collection, analysis, complementation, estimation, and visualization of biodiversity and ecosystem information. His presentation is attached in this report as [ANNEX 9](#).

When asked about the possibility of sharing Japan's model on biodiversity observation data archiving to other countries, Dr. Ito said Japan can provide technical support and capacity development assistance.

## **PRESENTATIONS ON DATA HOLDINGS AND GAPS IN BIODIVERSITY INFORMATION AVAILABILITY AND SHARING**

***PRESENTATION 8: The ASEAN Clearing-House Mechanism***

Dr. Sheila Vergara discussed the key role that information sharing plays in monitoring the progress of biodiversity conservation efforts in the ASEAN region and making science-based decisions and policies for conservation planning. In introducing the ASEAN CHM, she emphasized that it was established to support science-based decision making for biodiversity and to enable ASEAN Member States to meet their commitments to the Convention on Biological Diversity. She also highlighted the importance of the ASEAN CHM in tracking the progress of AMS in biodiversity conservation efforts.

Dr. Vergara discussed the various features of the ASEAN CHM, including the single entry point for biodiversity information websites of ASEAN Member States, support to biodiversity information research, monitoring and tracking (auto summaries, maps), interactive tools (interactive graphs), capacity building tools, interactive graphs, access to ASEAN Heritage Parks (AHP) as unique treasures, E-library, Friends of Biodiversity, and Mobile Applications for AHPs e-library. She also highlighted the importance of ACB's formal and non-formal partnership arrangements in furthering the Centre's work on biodiversity information management. Her presentation is attached as [ANNEX 10](#).

***PRESENTATION 9: Biodiversity Databases at the Forest Research Institute Malaysia (FRIM) and the Malaysian Clearing-House Mechanism***

Dr. Saw Leng Guan from the Forest Research Institute Malaysia (FRIM) discussed the abundance of Malaysian biodiversity, the databases managed by FRIM, Flora and Fauna Databases at CHM, and the Protected Area Database. His presentation is attached as [ANNEX 11](#).

***Presentation 10: Follow-up measures of the IUCN Resolution for the Promotion of the AP-BON adopted at the World Conservation Congress (WCC) in 2012***

Before delivering his presentation, Mr. Eun-Shik Kim expressed his sympathies for the victims of Typhoon Haiyan in the Philippines. The AP-BON co-chair discussed the key resolution items of the 2012 Jeju World Conservation Congress of IUCN on AP-BON. These include urging the members of IUCN to support existing biodiversity observation network activities, encouraging non-government organization members of IUCN to actively participate in activities, encouraging governments in the Asia-Pacific region to extend support to biodiversity observation networks, requesting IUCN's director general to boost cooperation and promote capacity building, and inviting the director general to utilize information generated by the AP-BON.

In discussing follow-on measures for the IUCN Resolution for AP-BON, the presenter suggested holding a side event at the 12<sup>th</sup> Meeting of the Conference of the Parties to the CBD in Korea to promote the AP-BON. He also recommended initiating an international cooperative research project on essential biodiversity variables in the Asia-Pacific region. He also suggested conducting further discussions in Korea about the promotion of the AP-BON.

Mr. Eun-Shik Kim also discussed the questions that should be asked about AP-BON, which include among other the niche of AP-BON in biodiversity conservation, interlinkages, and the benefits of networking. His presentation is attached in this document as [ANNEX 12](#).

During the question and answer portion of the session, the participants highlighted the importance of linking regional activities of the CBD, the IPBES, and other organizations with the AP-BON network.

***Presentation 11: ICIMOD's Biodiversity Information Gaps in Information Sharing in HKH Region***

In this presentation, Mr. Suman Jaiswal gave an overview on what the International Centre for Integrated Mountain Development (ICIMOD) is all about. He discussed the Centre's regional programmes and thematic areas, regional database initiative, the HKH biodiversity data, and data portals, among other topics. In discussing challenges and the way forward, Mr. Jaiswal the need to address the issue of taxonomic anomaly and incentive for data publishing, conduct data sharing to improve decision making, sustain activities by ensuring long-term funding, boost capacity building activities, and encourage continued support from GBIF members.

Providing a glimpse of what ICIMOD wants to see in the next few years, Mr. Jaiswal highlighted the importance of discovering all available data, conducting demand-driven publishing, becoming scientifically and socially relevant, and becoming an important partner of IPBES. His presentation is attached in this report as [ANNEX 13](#).

***Presentation 11: National Initiatives on Biodiversity Databases in India***

Dr. K. N. Ganeshiah from the University of Agricultural Sciences Bangalore traced the beginning of India's digital inventory of its biological resources. He discussed Jeeva Sampada which covers a huge database, more than 150 scientists, almost 500 man years, and involves taxonomy, biology, chemical constituents as well as uses and economic importance. According to Dr. Ganeshiah, Jeeva Sampada includes bio-resource databases, taxonomic databases, and ecological databases. Their data holdings are disseminated and utilized through reports, scientific publications, maps, atlas, web GIS, decadal plans, and partnerships with universities, NGOs and institutes.



In examining issues faced in India's biodiversity databases, Dr. Ganeshaiah said that it would be very productive to augment the efforts of the Indian Bio-resource Information Network (IBIN) at the national level. He also mentioned that GBIF should think of setting a global infrastructure in India with equal participation, highlighting that the Indian sub-continent is a mega-diversity cluster. His presentation is attached as [ANNEX 14](#).

***Presentation 12: A GIS Web Server for the Development, Circulation and Utilization of Biodiversity Information***

In this presentation, Dr. Ibrahim Djamaluddin from Japan's Kyushu University discussed how using a Geographic Information System web server can integrate many observation data and establish a geodatabase network on biodiversity data. His presentation covered geodata, multi-user geodatabase, geodatabase interoperability, integrating web services by mashups, web application of client-side, publishing and utilizing plant survey data, and collecting biodiversity information and sharing via mobile. According to Dr. Djamaluddin, ecological data can be integrated and shared effectively for regional or global scale research. He underscored that using GIS web server capabilities in building web-based analysis tools can contribute a useful component for ecological forecasting. His presentation is attached as [ANNEX 15](#).

***Presentation 13: Database for Freshwater Fishes in East and Southeast Asia***

Dr. Yuichi Kano of Kyushu University discussed the online database on freshwater fish diversity in East and Southeast Asia. The database managed by the Nagao Natural Environmental Foundation helps document freshwater fish in the region, with the ultimate aim of protecting East and Southeast Asia's freshwater ecosystems. According to Dr. Kano, what sets apart their database from other databases is that primary data are actively collected. He added that information in their database is also visually presented, holds a range of data types, and has an ID for a cluster of data. His presentation is attached in this report as [ANNEX 16](#).

Responding to a query raised by a participant, Dr. Kano clarified that their database is independent from FishBase and that there are no data overlaps between them.

## PRESENTATIONS ON EXISTING DATABASES

***Presentation 14: Biodiversity Informatics in China***

Briefing meeting participants about biodiversity informatics in China, Dr. Keping Ma from the Chinese Academy of Science's Institute of Botany discussed the all-in-one design of the National Specimen Information Infrastructure (NSII). The NSII covers both biodiversity and geodiversity, and includes more than 10 million specimens and links with more than 100 institutes and universities. He also discussed key initiatives such as China's Catalogue of Life, the Chinese Field Herbarium, the Chinese Virtual Herbarium, the National Digital Museum of Animal Specimens, and the Biodiversity Heritage Library of China. A copy of his presentation is attached in this report as [ANNEX 17](#).

**Presentation 15: FishBase Information and Research Group, Inc. (FIN) Databases**

Ms. E. Emily Capuli, FIN research associate, introduced FIN, a Philippine-based organization established in 2003 to support the availability of comprehensive information systems with key data on all aquatic organisms of the world, easily accessible and free of charge to the public. She presented the organizations two main projects – FishBase and SeaLifeBase – which hold information on nearly 160,000 species. Also covered in her presentation is AquaMaps, which has at least 13,000 species mapped. Ms. Capuli also discussed FIN's various knowledge products such as the fish ruler and poster, an atlas of common fishes, and mobile apps. Her presentation is attached in this report as [ANNEX 18](#).

**PRESENTATION 16: Plant Databases in Singapore**

Dr. Benito Tan from the University and Jepson Herbaria, University of California at Berkeley presented the plant databases of Singapore, including Singapore Herbarium Online, the Digital Nature Archive of Singapore, the Zingiberaceae Resource Centre, the East Asian Moss Database, the Interactive Malaysian Moss Database, and the NParks FloraWeb. According to Dr. Tan, among the problems faced by plant databases are completeness of information, accuracy of information, intellectual property ownership, and sharing and benefits. His presentation is attached in this report as [ANNEX 19](#).

**PRESENTATION 17: National Institute for Agro-Environmental Sciences and Collaboration Work in Japan**

Dr. Takeshi Osawa introduced the National Institute for Agro-Environmental Sciences (NIAES), a Japan-based institution that assesses risks in agricultural environments and develops risk management technologies; elucidates the structure of agricultural ecosystems in order to develop technologies to manage natural cycles; and conducts basic research to help elucidate the functions of agricultural ecosystems. He also discussed the National Resources Inventory Center (NRIC) and its key role in advancing natural resources inventory. Dr. Osawa also shared with participants the major activities that NIAES conducts for GBIF, including providing thousands of records on insects, microbe, and plant observation; publishing research papers; and promoting the biodiversity informatics field. His presentation is attached as [ANNEX 20](#).

**OPEN FORUM**

A major issue discussed during the open forum is the urgent need to demonstrate the relevance of the AP-BON by having tangible, appropriate, and useful products that reach target stakeholders. According to participants, databases will only be useful if data they contain will be analyzed, packaged well, and distributed to decision makers.

One product identified is a regional Red List. The participants agreed that this is a priority product that can encourage stakeholders to take action, especially when informed about critically endangered species.

Another product identified is the mapping of key biodiversity areas. Participants agreed that assessing protected areas and mapping KBAs will provide significant information including species that are being lost. This product, the group agreed, can be packaged as a visual reference that offers a wealth of species information for policymakers.

The lack of funding was discussed as a significant roadblock in coming up with AP-BON products. One recommendation offered is to convince government officials that what AP-BON is doing on the database is useful and encourage them to provide the funding needed to sustain AP-BON's work. Gaining access to a higher ministerial meeting was also recommended to demonstrate the importance of the work conducted by AP-BON.

On the issue of scale, the participants agreed that AP-BON products can initially target a small area to test the usefulness of products. Products and projects can then be expanded later on to cover a wider stakeholder base.

In discussing databases, the participants examined the issue of usefulness. They agreed that it is important to identify the end user, the type of information they need, and the kind of presentation they require. A key step identified is to find out who are using the databases and how they are using the data.

## **MEETING DISCUSSIONS**

### ***Issues Gathered from the Presentations***

In terms of structure, the meeting participants identified the lack of collaboration on data among institutions and the variations in database structures as key challenges. They believe that the differences in formats pose a challenge because they make access to data difficult and limit our ability to conduct meaningful regional or global assessments.

Examining the gaps in content, process, and collection circumstances and efforts, the participants highlighted that there are too many species, but too little time. As a result, some species become extinct even before they are surveyed. The lack of funds to conduct comprehensive surveys and establish permanent plots was also identified as an issue.

Other process issues gathered from the presentations include intellectual property rights and legal issues and misunderstanding of museum functions.

In terms of collection circumstances and efforts, among the issues identified were the displacement of native plants, the reduction in the number of migratory birds observed, and shift in the frequency of fauna from lowland to upland. Another key issue highlighted in the presentations was the fragmentation of forests and the modification of ecosystems. The lack of funds and safety from insurgents were also identified as barriers.

### ***Proposals on How to Collect and Share Biodiversity Information in the Asia-Pacific Region***

Discussing proposals on how to collect and share biodiversity information in the Asia-Pacific region, the participants identified publishing information through AP-BON publications, magazines, virtual herbaria, and digital museums as an important step.

An equally significant recommendation is to build capacity in the region in the area of species-based analysis, biodiversity observation at the national level, developing a consolidated list of threatened species, and using a system to monitor ecosystem services. One recommendation is to use ACB as a platform for capacity building activities and assessments.

Other proposals include demonstrating the use of data and information collected in the region. The creation of a regional Red List was discussed as a key component of this recommendation. One idea brought forward was to make available online a list of threatened species. Also discussed was the need to develop a comprehensive database that will address the conservation needs of a larger stakeholder group.

The participants also proposed supporting continuing inventories, collaborating through models such as S-Net of Japan, centralized specimen-based databases, specimen and ecosystem-based networking, network of partners, the landscape approach to ecosystem management, and the ABCD Network.

In terms of data structure, participants proposed the use of the CHM as a national platform and the use of Darwin Core 2. They also mentioned the importance of using available technology such as GIS web server capabilities for utilizing biodiversity information data.

On data content, the participants recommended increasing the number of people who encode data, highlighting species of interest, and linking the map-based protected area database with the World Database on Protected Areas. In discussing the development of data sharing incentives, the participants highlighted the need to break data sharing issues through the “carrot and stick” approach, generating support from GBIF, establishing data storage arrangements.

### ***Furthering the Work of AP-BON***

On furthering the work of AP-BON, the participants said this could be done by encouraging the creation of more biodiversity observation networks, conducting gap analysis among AP-BON countries, using AP-BON to support IPBES and GBIF, and preparing AP-BON products to support GEO BON.

To generate more support for AP-BON, the meeting participants underscored the need to mobilize support from members of the International Union for Conservation of Nature (IUCN). Also highlighted were the need to make the most out of the utility of the databases that the AP-BON members organize, focusing on the needs of target stakeholders such as policy makers, and building interest in AP-BON. The complete presentation on meeting discussions is attached as [ANNEX 21](#).



**Day Two – 27 November 2013**

**COMPILATION AND PUBLICATION OF REGIONAL RED LIST DATA AND POSSIBLE AP-BON DATA PRODUCTS**

***PRESENTATION 18: Compilation of Regional Red List***

Dr. Tsuyoshi Hosoya, GBIF Japan Node Manager, presented an overview of GBIF as an international organization that focuses on making data available through the Internet. In terms of regionalization, he explained that owing to the rapid increase in the number of participants and the limited manpower, it became necessary for GBIF to undergo regionalization. The Asia-Pacific region, he said, faces a number of problems related to regionalization, one of which is that the region's heterogeneity poses some challenges in terms of collaboration and communication. According to Dr. Hosoya, the representation of the Asia-Pacific region in GBIF is not very strong. This, he said, could be owing to the fact that there are only two voting members of GBIF in Asia and that there are no full-time GBIF node managers in the continent.

Dr. Hosoya updated the participants about the status of Red List and Invasive Alien Species list in Asian Countries. He said that materials for the fundamental data have been collected and that clearance has been obtained for the integration. The actual integration of the data has been initiated and is being funded by the East and Southeast Asia Biodiversity Information Initiative (ESABII). The final version is expected to be shared by ESABII, JBIF, and GBIF Asia. The next steps, he said, include advancing contents for the listed species, establishing a procedure for data sharing mechanism, and collecting data of invasive alien species. Dr. Hosoya's presentation is attached in this report as [ANNEX 22](#).

In an open forum held after the presentation, participants emphasized that countries must have uniform Red Lists. According to Dr. Vergara, this is the rationale behind supporting CHM in the country level.

***PRESENTATION 19: Data Publication as Means for Sharing Biodiversity information***

In his presentation, Dr. Yu-Huang Wang of the Taiwan Forest Institute, explained the significance of publishing data. He also answered the questions: What to publish? Where to? How to? This presentation is attached as [ANNEX 23](#).

## RECOMMENDATIONS

A synthesis of issues and suggestions on how to move forward was presented. The participants proceeded to talk about how the AP-BON will move forward. Dr. Saw Leng Guan mobilized discussions on how to make the work of AP-BON more meaningful, building on the ideas put forward by Dr. Ganeshiah on making the most out of the utility of the databases that the AP-BON members organize, focusing on the needs of target stakeholders such as policy makers and the need to build interest in AP-BON.

Following discussions on the niche of AP-BON and targeting multilateral environmental agreements and initiatives such as the CBD, GEOBON and IPBES, the meeting participants identified a number of project options, including regional Red Lists, Key Biodiversity Areas (KBAs) and related processes, essential biodiversity variables, and fund assessments and databases for mosses.

One product recommendation that resulted from the discussions is the establishment of a regional Red List. The participants agreed that there is a need to encourage Asia-Pacific countries to establish their national Red Lists as instruments of prioritizing biodiversity conservation and to publish the lists in their national CHMs. The components of the Red Lists include capacity building, taxonomy, data entry, conservation assessment, and monitoring of conservation threats using species data. In defining the character of the Red List, the participants agreed that the lists should have Darwin Core as a common database structure. In addition to Darwin Core, it was suggested that nationally elected categories such as 'rare' be included.

Another recommended product is the mapping of Key Biodiversity Areas. The participants highlighted the importance of encouraging Asia-Pacific countries to identify KBAs using their national Red Lists as well as Important Bird Areas (IBA), Indigenous Protected Areas, and other important areas as base of map-based site selection. This product, they said, can be a key contribution of AP-BON to IPBES, CBC, and the GEOBON. They also underscored that this product is a cost-effective means for Asia-Pacific countries to identify particularly sensitive and ecologically important areas. AP-BON members, however, need to agree on the methodology for this product. They also need to think about the mechanics of how to implement KBA selection process at the national, subregional, and regional levels.

The participants also recommended having essential biodiversity variables (EBVs) as an AP-BON product. Under this product, baseline references will be established to understand and document changes and impacts. This include selecting clear variables that everyone could agree to. According to the participants, EBVs can be an important AP-BON soft product that can be fed to IPBES. They also highlighted that this product, which may be supported by Korea's Ministry of Environment, can boost AP-BON's visibility. They acknowledged a number of challenges that may be faced in pursuing this product, one of which is the difficulty in identifying EBVs owing to complexity, local occurrence, and existing impacts. The difficulty of using global tools was also identified as a challenge as well as the difficulty of measuring ecosystem services on the ground. The participants also said that the processes and outputs in relation to EBVs are also less tangible compared to KBAs. They agreed that the best way to go is through conservation assessment. Among the suggestions discussed is to have a regional EBV, establish a network with the developers of the Global EBVs, and identify AP-BON members who will attend EBV discussions. Based on initial discussions on pursuing EBVs as an AP-BON product, the participants looked into monitoring the rate of species extinction at the national level using species data. They said that this can be conducted as part of conservation assessment. Other suggestions include monitoring the rate of conservation threats and using satellite images and time scale to see what is happening regionally.

In terms of supporting work on mosses, the participants discussed an existing East Asiatic database and an interactive database that is under construction. One activity to be conducted under this product is a workshop that will introduce Pteridophytes, Bryophytes and Ferns. There will also be an introduction to biodiversity, including the role in ecosystems and forest ecology and identification of species to encourage interest in these species. The participants agreed that there is a need to strategize from an applications point of view.

Another recommendation that resulted from the workshop is the publishing of data papers. They agreed that data paper preparation can be a collaborative activity among AP-BON members. The participants discussed the need for AP-BON to prioritize geographies and themes and to collaborate on preparing data papers. They also plan to prepare at least two data papers for COP12 in Korea.

Other recommendations include opening existing databases for access to data, contributing a draft paper of AP-BON governance including membership, and conducting another AP-BON workshop to discuss products outside of databases and data products.

## **NEXT STEPS**

The ideas and recommendations gathered from the meeting will be presented to the Steering Committee and the Working Groups. Nepal offered to host the next AP-BON meeting after COP-12 either by end of 2014 or early 2015.

In support of efforts to better promote the work of AP-BON, the participants identified upcoming meetings where AP-BON can be highlighted. Among these meetings are SBSTTA 18, CBD COP-12, GEOSS meetings, and GBIF 21. The presentation on recommendations and next steps is attached in this document as [ANNEX 24](#).

## **CLOSING**

Dr. Tetsukazu Yahara officially closed the 5<sup>th</sup> meeting of the AP-BON. He expressed his gratitude to the Philippines for hosting the gathering and to Japan's Ministry of Environment and ACB for contributing significantly to the success of the meeting. He also thanked the participants for joining the fruitful discussions. He expressed optimism that the meeting's outcomes will contribute to the success of the AP-BON. Photos from the meeting form part of [ANNEX 25](#).

**Table 1. Summary of Issues, Solutions and Possible APBON Products Discussed during the 5<sup>th</sup> APBON Meeting in Los Banos, Laguna, Philippines**

Issues	Suggested Solutions	Possible APBON Products	
		Product	Activities
<ul style="list-style-type: none"> <li>Lack of systematic reporting system and a database that can help manage information needed for decision making</li> <li>Lack of collaboration on data among institutions and variations in database structures</li> <li>Difficulty in gathering information from data holders</li> <li>Lack of collaboration on data among institutions and variations in database structures</li> <li>Need to address issue on taxonomic anomaly and incentive for data publishing, conduct of data sharing for improved decision making</li> <li>Problems faced by plant databases are completeness and accuracy of information, IPR ownership and sharing of benefits</li> </ul>	<ul style="list-style-type: none"> <li>Use CHM as national platform, use Darwin Core 2 format as structure for species information</li> <li>Use ACB as a platform for capacity building activities and assessment</li> <li>On usefulness of data – identify target users, information needs of target users</li> <li>Encourage Asia Pacific countries to establish their National redlists as instruments of prioritizing biodiversity conservation and publish national CHM</li> <li>Make available online a list of threatened species</li> </ul>	<p>Regional Red List</p> <p>KBA delineation</p>	<p>Capacity building, red listing</p> <p>Capacity building, KBA process Implementation</p>
<ul style="list-style-type: none"> <li>Too many species, too little time resulting to species becoming extinct before surveys are conducted /Lack of funds to conduct surveys</li> </ul>	<ul style="list-style-type: none"> <li>Build capacities in the region to do species-based analysis, developing list of threatened species, and monitoring ecosystems services</li> </ul>	Essential Biodiversity Variable (EBVs)	Identify key indices for AP region, Remote sensing, time series
<ul style="list-style-type: none"> <li>Urgent need to demonstrate relevance of AP-BON by having tangible products that reach stakeholders</li> <li>Lack of funding</li> </ul>	<ul style="list-style-type: none"> <li>Publish information through AP-BON publications, magazines, virtual herbaria, digital museums</li> <li>Convince government officials about the usefulness of APBON activities</li> <li>Craft strategic action plans and roadmaps and promotional efforts for APBON products</li> <li>Link APBON network with the regional activities of the CBD, IPBES and other organization</li> </ul>	Data published	Data papers, data set, (Malaysia & India)



## List of Annexes

Annex No.	Title	Link
1	Directory of Participants	<a href="#">DOWNLOAD</a>
2	Welcome Speech	<a href="#">DOWNLOAD</a>
3	Programme	<a href="#">DOWNLOAD</a>
4	AP-BON History and Strategy	<a href="#">DOWNLOAD</a>
5	State of Biodiversity Observation in the Philippines	<a href="#">DOWNLOAD</a>
6	Inventory and Assessment of Biodiversity in Mts. Iglit-Baco:Mountain Range: Mt. Masulong Key Biodiversity Area	<a href="#">DOWNLOAD</a>
7	National Museum of Nature and Science	<a href="#">DOWNLOAD</a>
8	Current Biodiversity Observation in Indonesia	<a href="#">DOWNLOAD</a>
9	Promotion of the Network Activities for the Biodiversity Observation in Nepal and Region	<a href="#">DOWNLOAD</a>
10	Current Activity on Biodiversity Observation Data Archiving in Japan	<a href="#">DOWNLOAD</a>
11	The ASEAN Clearing House Mechanism	<a href="#">DOWNLOAD</a>
12	Biodiversity Databases at the Forest Research Institute Malaysia and the Malaysian Clearing House Mechanism	<a href="#">DOWNLOAD</a>
13	Followup measures of the IUCN Resolution for the promotion of the APBON adopted at the World Conservation Congress in 2012	<a href="#">DOWNLOAD</a>
14	ICIMOD's Biodiversity Information and Gaps in Information Availability and Sharing in HKH Region	<a href="#">DOWNLOAD</a>
15	Indian Bio-resource Information Network	<a href="#">DOWNLOAD</a>
16	A GIS web server for the development, circulation, and utilization of biodiversity information	<a href="#">DOWNLOAD</a>
17	Database for freshwater fishes in East and Southeast Asia	<a href="#">DOWNLOAD</a>
18	Biodiversity Informatics in China	<a href="#">DOWNLOAD</a>
19	FishBase Information and Group, Inc. Databases	<a href="#">DOWNLOAD</a>
20	Plant Databases in Singapore	<a href="#">DOWNLOAD</a>
21	National Institute for Agro-Environmental Sciences and Collaboration work in Japan	<a href="#">DOWNLOAD</a>
22	Day 1: Meeting Discussions	<a href="#">DOWNLOAD</a>
23	Compilation of a Regional Red List	<a href="#">DOWNLOAD</a>
24	Data Publication s means of sharing biodiversity information	<a href="#">DOWNLOAD</a>
25	AP-BON Potential Products: 2014 and beyond	<a href="#">DOWNLOAD</a>
26	Photo Gallery	<a href="#">DOWNLOAD</a>



