

## Biodiversity Information Management: Cultivating a culture of information sharing

Biodiversity information can come in many forms, one of which is the observation of species—their habitats, genetic makeup and distribution, and the means by which this information has been collected. Biodiversity managers and decision makers who promote conservation of biodiversity resources need information on the state of such species, threats to their existence, the state of their preferred environments, and how these can be best conserved.

The use of biodiversity information as scientific basis for conservation planning and management is underscored in Target 19 of the Convention on Biological Diversity's (CBD) Strategic Plan for Biodiversity 2011–2020. Thus, its collection and generation should be improved, widely shared, and appropriately used to achieve desired goals. The CBD encourages the establishment of a clearing-house mechanism (CHM) to serve as platform for technical cooperation and sharing of biodiversity information among member countries.

In the ASEAN region, Biodiversity Information Management (BIM) is the means by which ASEAN Member States (AMS) could systematically integrate biodiversity concerns in conservation planning, management, policy development, and decision-making processes. Specifically, BIM is having data contributed by a community of partners who are equipped with the necessary skills that



Biodiversity information management is relevant to the implementation of Target 19. Access to information is important to identify and monitor threats to biodiversity and determine priorities and appropriate measures for conservation and sustainable use. The CBD encourages the establishment and maintenance of national Clearing-House Mechanisms among Parties to improve access to and sharing of biodiversity information, generate knowledge products, and promote scientific and technical cooperation.

enable the use of a common structure (interoperable data) and collaboratively develop knowledge products on responsible biodiversity conservation.

The results of efficient biodiversity information management can be demonstrated in accurate regional analyses; informed policy development; adequate and robust data for research support; and having available information for science-based governance and local area management support.

### Challenges in biodiversity information management

In the ASEAN region, biodiversity information are held by various institutions and recorded in different structures and in local dialects, making these data difficult to integrate, analyze, share, and use for conservation efforts. The variability of formats constrains the documentation of long-term observations of biodiversity components such as taxonomic data, species occurrences, and



socio-economic information. Project-based initiatives often limit information and its use within the scope of their design and objectives. Further, biodiversity information sharing in the region, particularly on species location, is often hampered due to the species' vulnerability to poaching and other illegal trade activities.

In the global setting, there are about 2.5 to 3 billion specimens that document more than 300 years of biological exploration. It is estimated that only around 10 percent of the world's total specimens are digitized, with some 4 to 5 percent discoverable through global online platforms such as the Global Biodiversity Information Facility (GBIF) (Holmes et al., 2016). The vast majority of accessible records are shared by natural history collections in the developed world, especially in Europe and North America, including some 3 million specimen records "repatriated" through digital access to the AMS from which they were collected. A wealth of data remains untapped in the institutions of megadiverse regions including ASEAN; and initiatives such as the Biodiversity Information Fund for Asia are attempting to bring more of this information into the public domain and accessible for research and policy through promotion of data standards, capacity building, and publication in open data discovery platforms (GBIF, 2016).

### **The ASEAN CHM and CHM capacity building activities**

Cognizant of the need for infrastructure to organize biodiversity information in the region, the ASEAN Clearing-House Mechanism (ASEAN CHM) was established, through the ASEAN Centre for Biodiversity (ACB), as an entry point to available biodiversity-related information in the ASEAN region. The ASEAN CHM offers a range of services, such as providing biodiversity-related information and capacity building guides and tools, to aid conservation planning, monitoring, and decision making.

To keep abreast with the latest developments in data organization and management and to facilitate access to species data in the region, ACB also partners with global data holders and organizations, including the Asia Biodiversity Conservation and Database Network (ABCDNet), Asia Pacific Biodiversity Observation Network (APBON), BirdLife International, Global Biodiversity Information Facility (GBIF), Group on Earth Observations Biodiversity Observation Network or GEO BON, Ocean Biogeographic Information System or OBIS. However, the ASEAN CHM's maintenance as a regional platform for biodiversity information is highly dependent on the availability of locally and nationally collected information by AMS. Currently, not all biodiversity information at the national level is interoperable; thus, it is a challenge to put the data together and produce new information. In response, training modules and tools that facilitate the encoding of biodiversity data in common formats that are globally acceptable have been developed.

### **Updates on national CHMs**

As part of commitments to the CBD, the AMS continue to establish and maintain national CHMs. To date Cambodia, Malaysia, the Philippines, Singapore, and Thailand have operational national CHM websites.

Despite these efforts, the publication of biodiversity information in national CHMs has been slow due to a number of factors. Some data are in need of translation, there is a lack of financial and human resources to encoding data, and in some cases, internal policies limit the sharing of sensitive information, particularly on species locations. Further, CHM operations are not mainstreamed into the regular operations of some AMS because of the lack of regular staff to maintain the national CHM network and website.







Photo by the ASEAN Centre for Biodiversity

## Call for Action

It is imperative to support the coordination of biodiversity observation efforts and generation of shareable biodiversity information at the national and regional levels to facilitate sound decision making, policy development, and conservation of the region's biological resources. These could be achieved through the following actions:

### At the regional level:

- Continue to enhance capacities of AMS to manage national CHMs and organize and maintain biodiversity information.
- Continue to develop biodiversity information management tools that could facilitate establishment of biodiversity databases and promotion of knowledge products.
- Promote a culture of data sharing on species and protected area data that conform to common format, terminologies, and metrics to increase access to accurate and scientific biodiversity data for decision making, policy development, and monitoring purposes.
- Maintain regional and global partnerships to promote biodiversity information sharing at all planning levels.

### At the national level through the AMS:

- Support the ASEAN CHM website by contributing species and protected area data that will facilitate science-based biodiversity monitoring, decision making, and policy development in the region.
- Continue to develop and maintain national CHMs.
- Generate and share biodiversity information in standard formats and mainstream national CHM operations into regular government budgets to ensure sustainability of CHM operations.
- Get involved in global initiatives (e.g., UNDP BIOFIN, GBIF, AP-BON, GEO BON, and ABCDNet, etc.).
- Tap natural history museums and academic institutions engaged in biodiversity data collection as data partners and provide capacity support to share data in common formats.
- Secure funding for the establishment and maintenance of national CHMs by tapping the BIOFIN project to generate and explore potential funding sources.

## References

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# Biodiversity Information Management:

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## Clearing-House Mechanism (CHM)

A biodiversity information platform that facilitates information sharing to support the conservation and management of biological resources

## Ways Forward



Work with natural history museums



Maintain global partnerships



Continue to enhance capacities on CHM management and data organization



Continue developing biodiversity information management tools



Engage academic institutions as part of network of data partners



Promote a culture of biodiversity information sharing



Pursue CHM content enhancement activities



Active participation in global scientific discussions



Encourage AMS to support the ASEAN CHM

## Challenges



Species and protected area data do not use common format



Limited technical capacity and financial resources



Language barriers

Limited sharing of species and PA-related data

