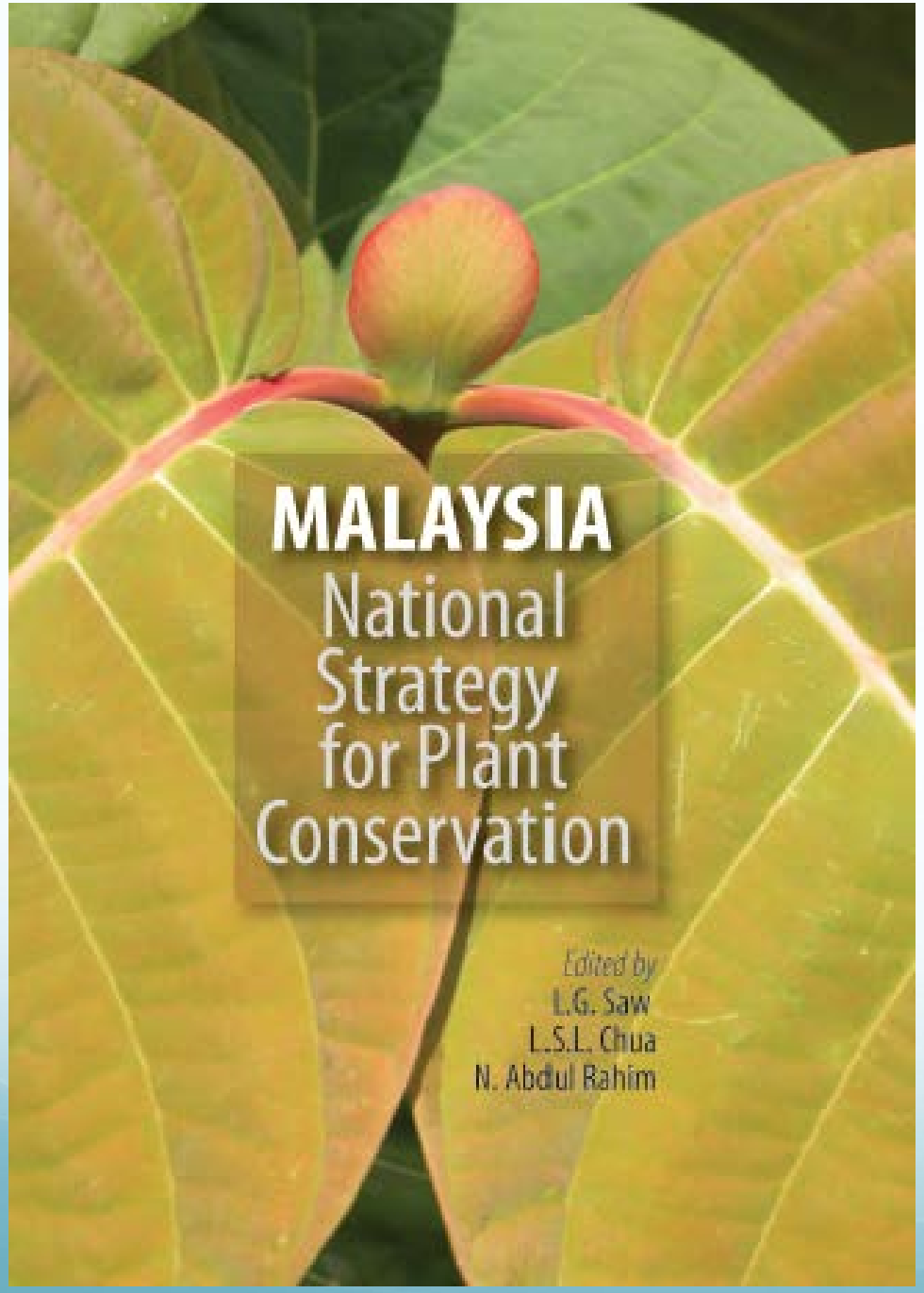
Progress on the Implementation of the Global Strategy for Plant Conservation

MALAYSIA

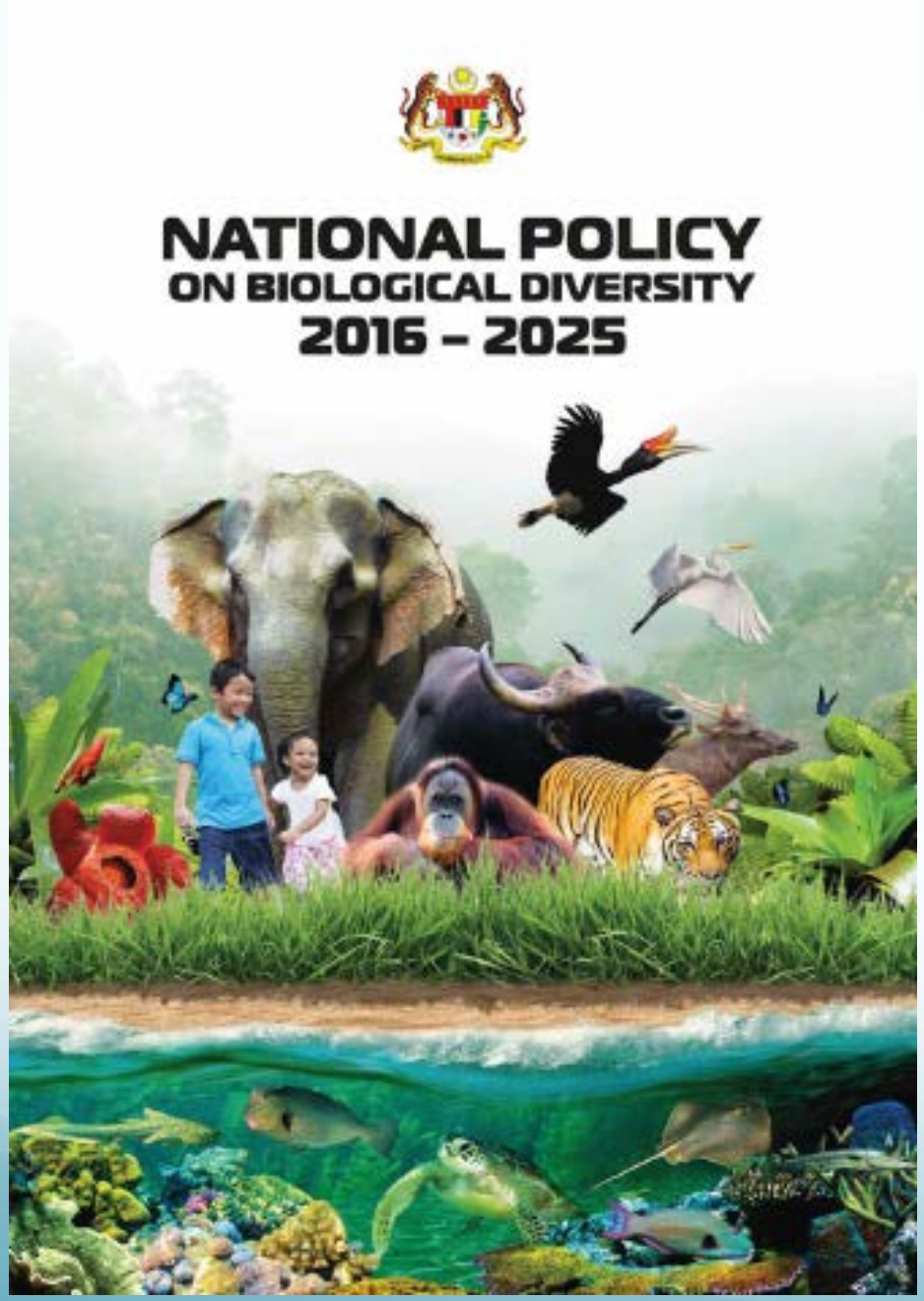
Lillian Swee-Lian Chua

INSTITUT PENYELIDIKAN PERHUTANAN MALAYSIA
Forest Research Institute Malaysia
ISO 9001 : 2008
www.frim.gov.my



Content

- Understanding and documenting plant diversity (3 Targets);
- Conserving plant diversity (6 targets);
- Using plant diversity sustainably (5 targets);
- Promoting education and awareness about plant diversity (1 target); and
- Building capacity for the conservation of plant diversity (2 targets).



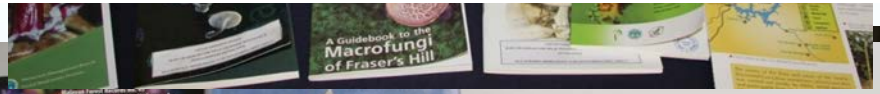
Goals

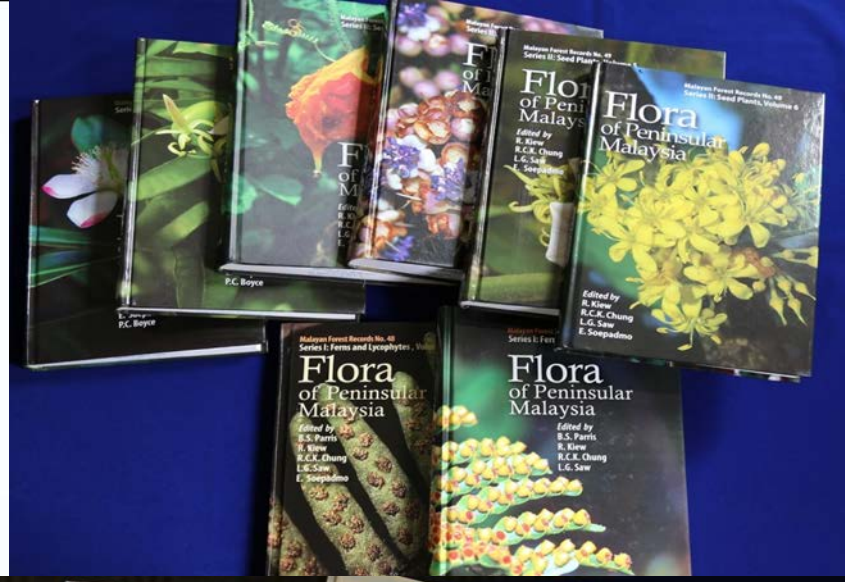
- We have empowered and harnessed the commitment of all stakeholders to conserve biodiversity;
- We have significantly reduced direct and indirect pressures on biodiversity;
- We have safeguarded all our key ecosystems, species and genetic diversity;
- We have ensured that benefits from utilisation of biodiversity are accrued equitably to all; and
- We have improved the capacity and knowledge of all stakeholders to conserve biodiversity.

Target 1: An online flora of all known plants

More than 126 new species described since 2011.
Conservation assessment completed for:

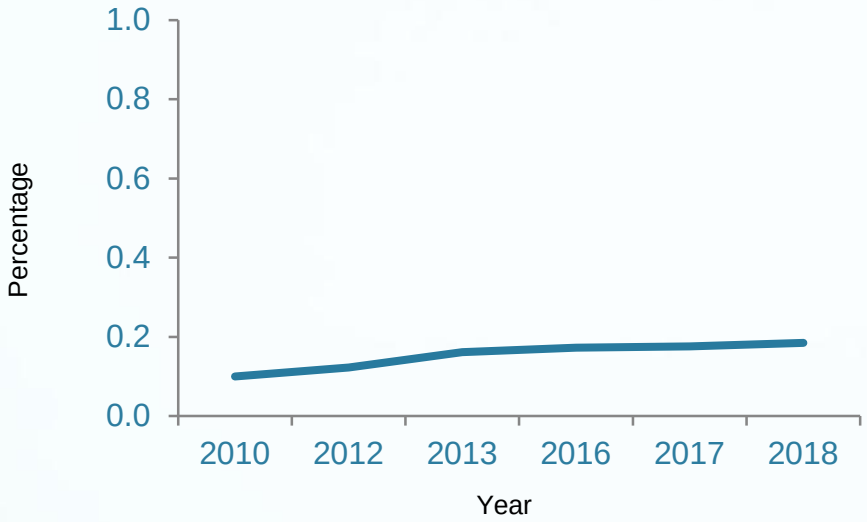
- 18% of West Malaysia's c. 8300 species;
- 55% for East Malaysia's c. 4000 tree species.



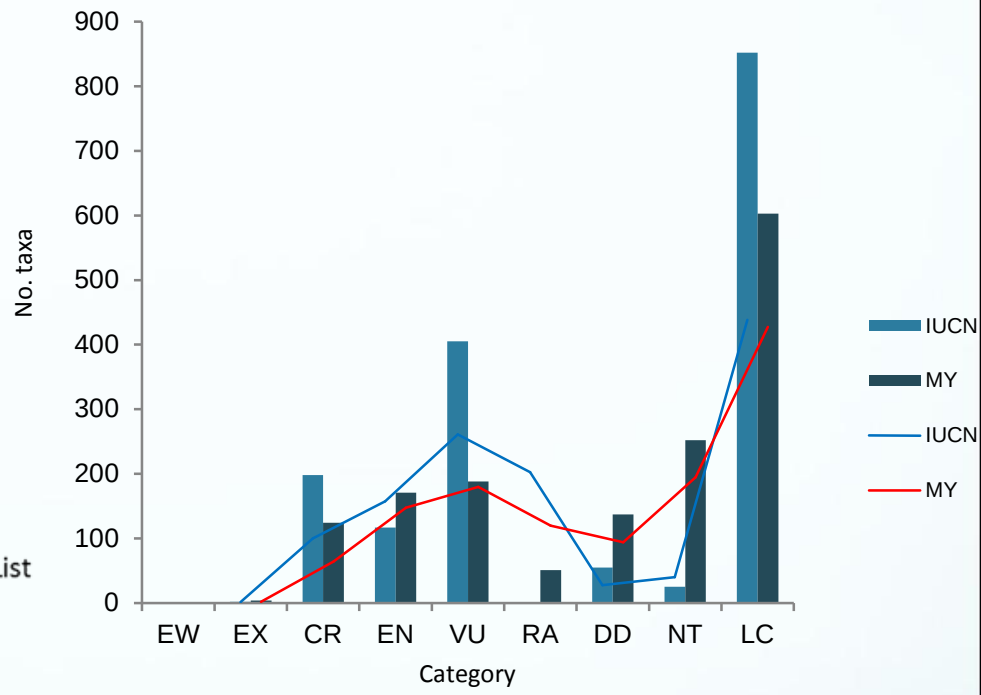


Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

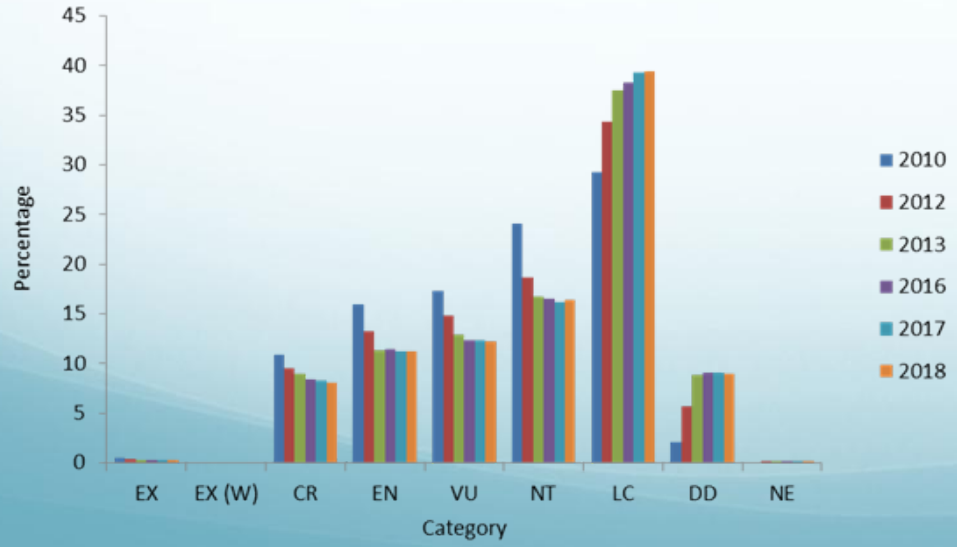
Progress towards achieving Target 2



Trend seen in IUCN and MY assessments for indigenous species



Change in the percentage of species under the IUCN Red List Categories over time



Sources: (1) Oldfield *et al* (1998) The World List of Threatened Tress. World Conservation Press; (2) http://www.iucnredlist.org/ downloaded 1 July 2018; (3) Flora of Peninsular Malaysia Series I (Ferns and Lycophytes, Volumes 1−2) and Series II (Seed Plant, Volumes 1−6 (2010−present).

Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Climatic forest types in West Malaysia

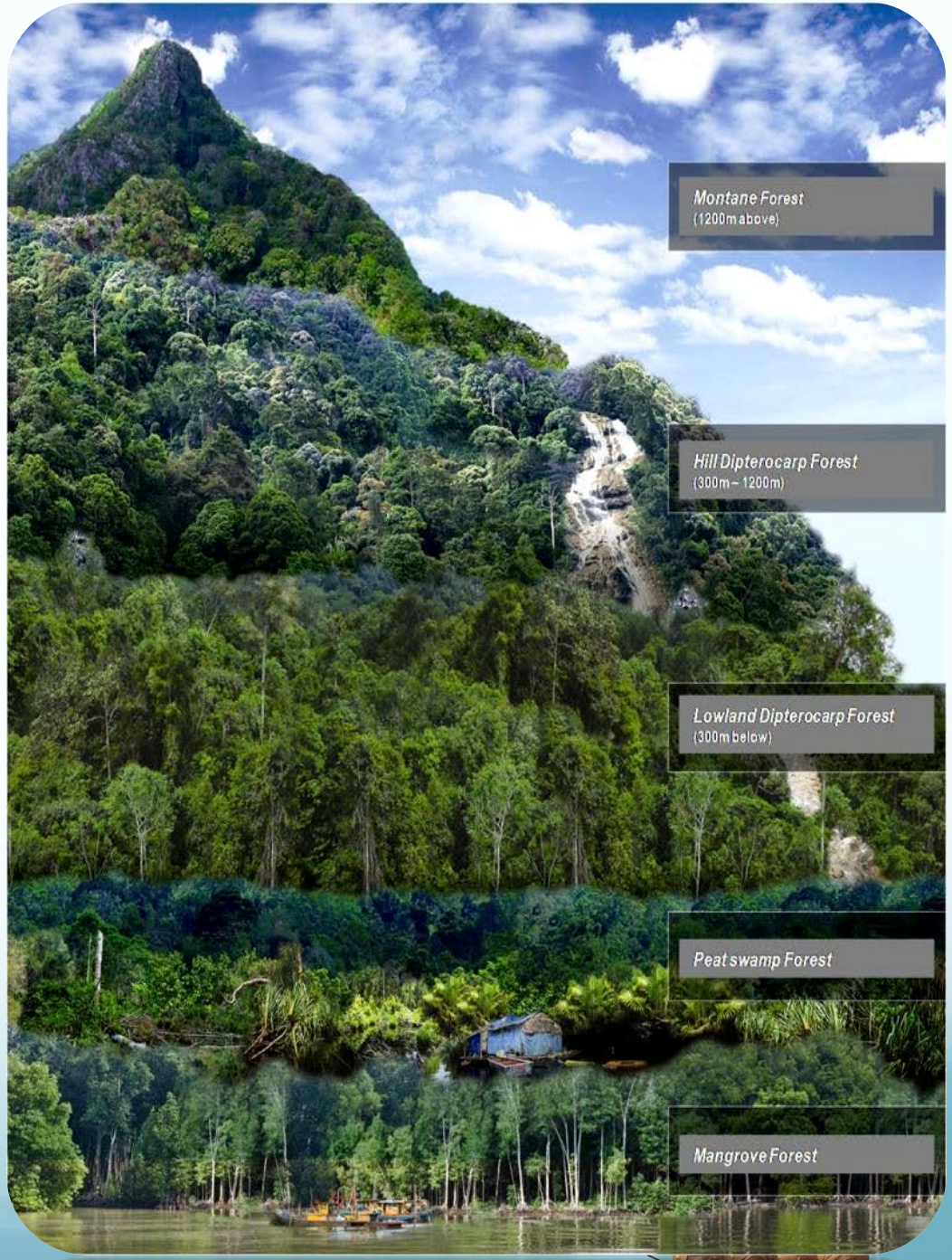
- Lowland dipterocarp
- Hill dipterocarp
- Upper hill dipterocarp
- Montane oak
- Montane ericaceous

Edaphic forest types

- Mangrove
- Beach
- Swamp
- Heath
- Limestone

Forest types in East Malaysia

- Mangroves
- Peat swamps
- Mixed dipterocarp forest
- Heath/kerangas
- Limestone
- Ultramafic



Master List for Protected Areas (PA) for Malaysia

- developing a national list for all categories of terrestrial and marine protected areas;
- provides information on size, location, management objectives, date established, management authority, habitat types that are represented in the PA; and
- Informs ecological regions that are less represented and therefore requires priority.

Restoration programmes

2804 ha of mangrove areas rehabilitated since 2005

Photo courtesy Raja B., Tariq M.

Pantai Kuala Pahang, 2.4 ha, *Gymnostomma, Terminalia, Calophyllum inophyllum*

Inland water habitats at Tasik Chini

Photo courtesy Firdaus Z.

Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

Towards conservation strategy for limestone hills in Peninsular Malaysia:

- Immediate objectives: (1) assessment of the status of limestone flora for outcrops in the states of Kelantan and Perlis; (2) identification of hotspots and critically endangered species;
- Medium-term objectives: (1) Identification of critical outcrops that need to be conserved and, where appropriate, managed; (2) preparation of a conservation strategy for limestone hills.

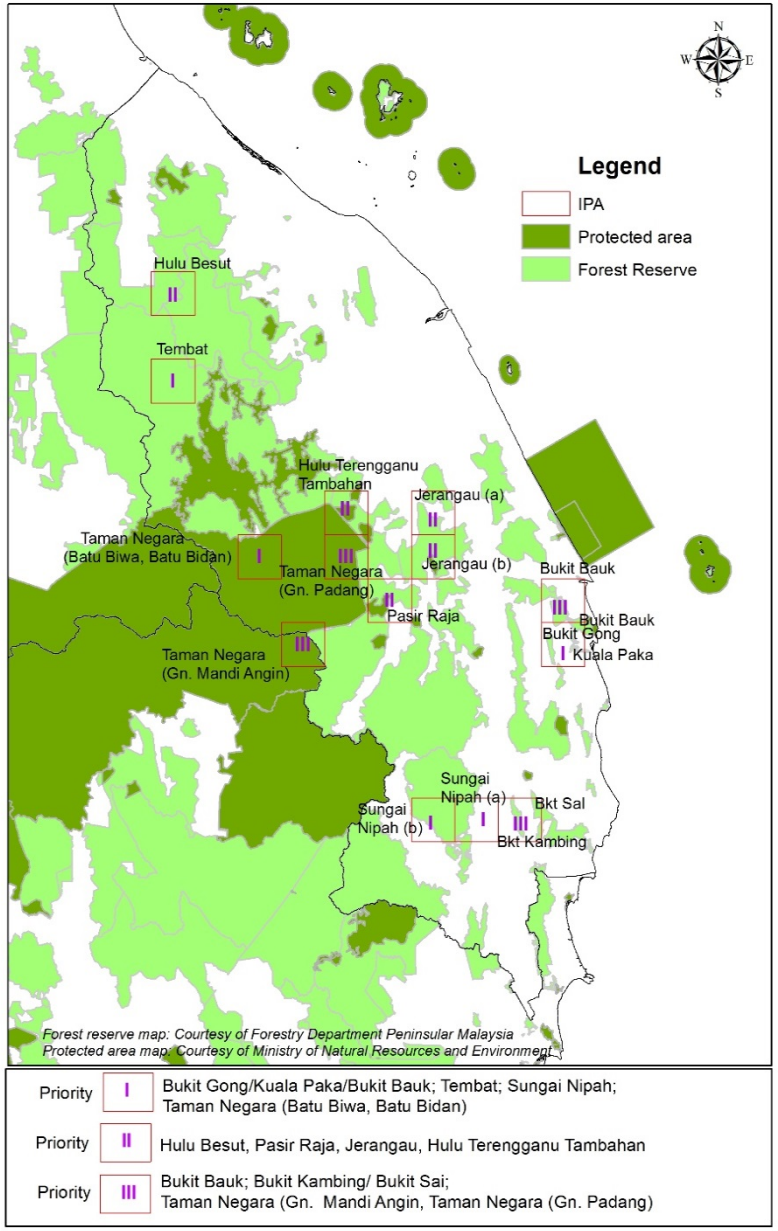
Preliminary IPA for Terengganu, Malaysia

The preliminary weighted values, criteria and analysis for identification of IPA successfully developed and tested for the state of Terengganu;

c. 9000 records from the KEP were geo-referenced;

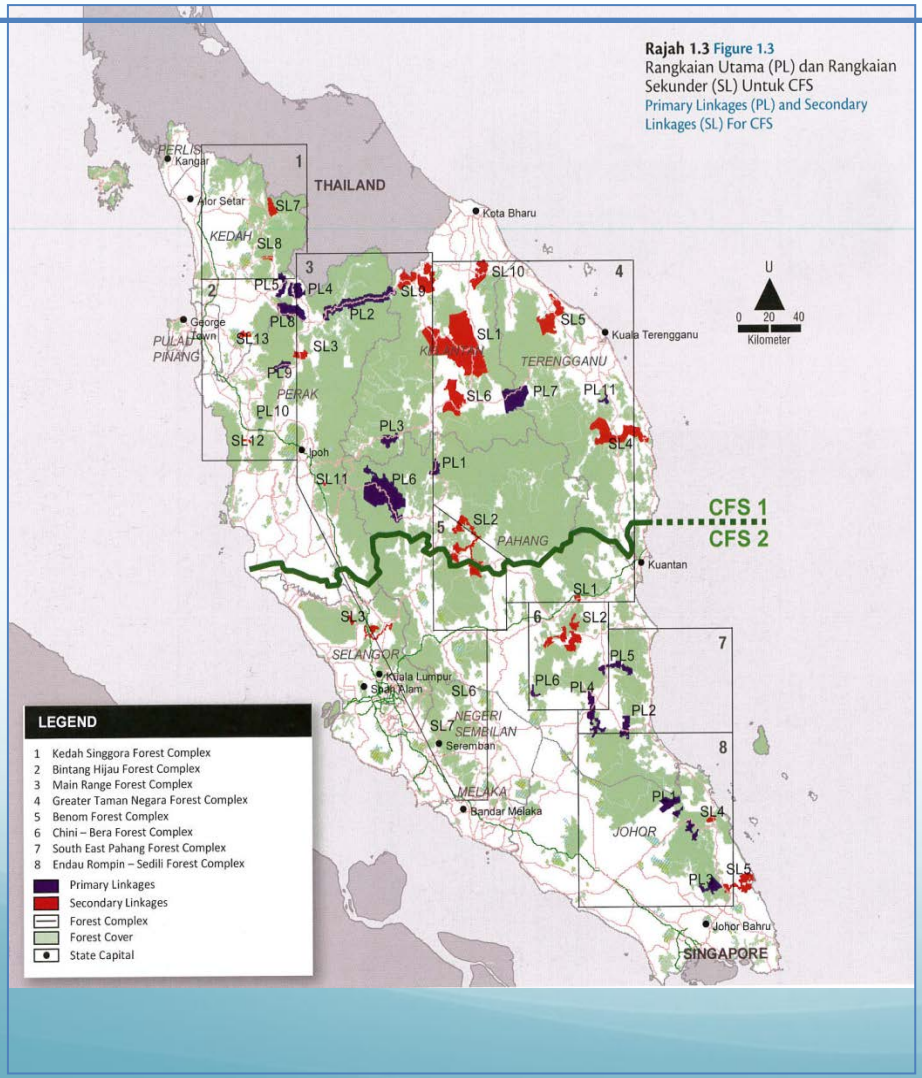
Two IPA criteria used to develop the weighted values: presence of threatened and endemic species and botanical richness areas;

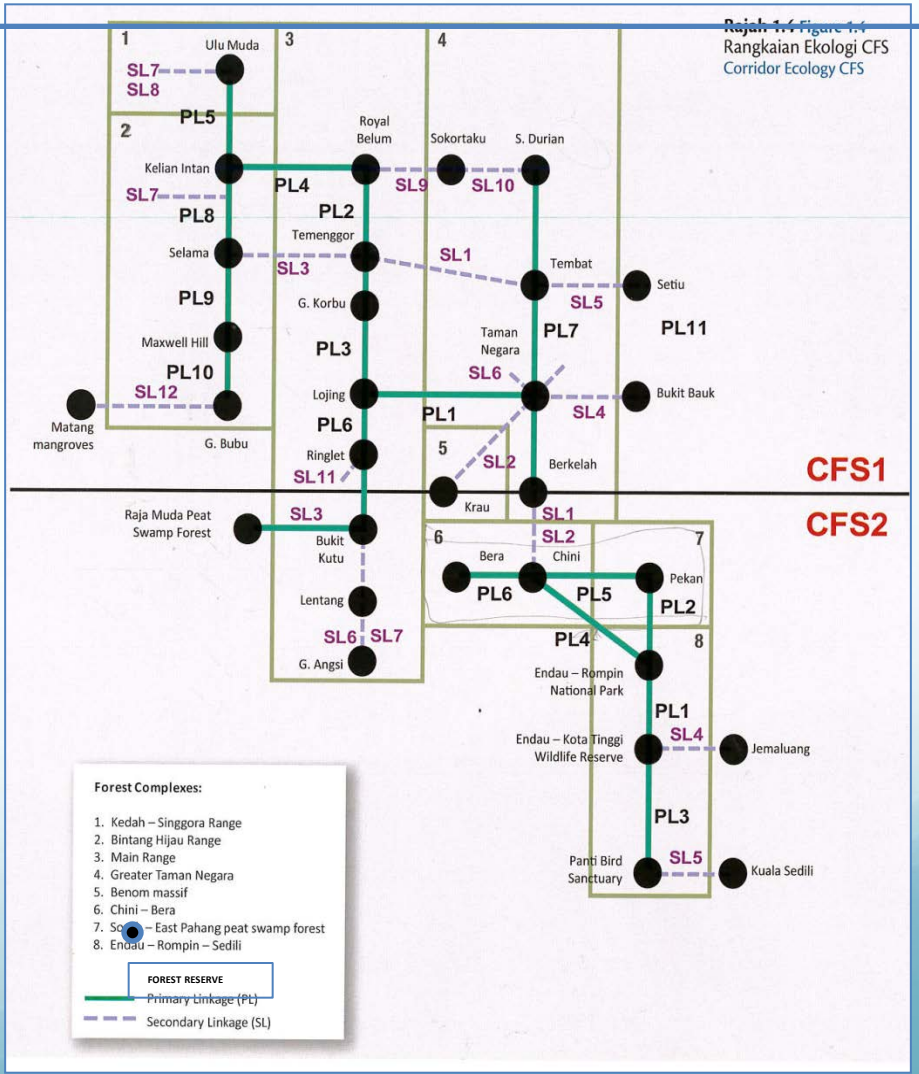
10x10 km grids developed and overlaid across the state. Hotspot analysis by ArcGIS identified areas of low, medium and high conservation priority.



Central Forest Spine Master Plan for Ecological Linkages (2009)

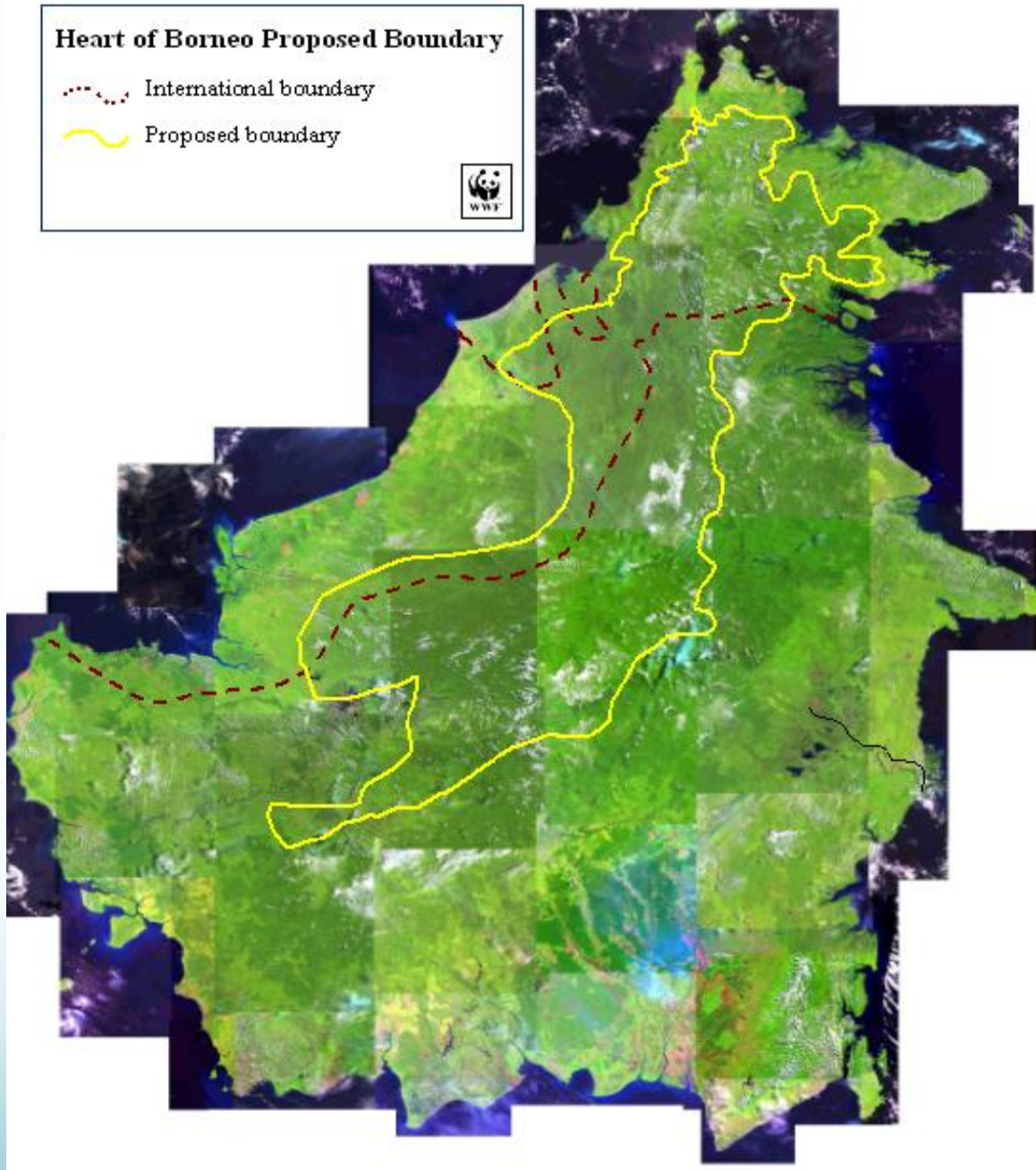
- Implement National Physical Plan-2 Policy 23: A Central Forest Spine shall be established to form the backbone of the Environmentally Sensitive Area network;
- 37 ecological linkages in 4 forest complexes, 5.3 million ha;
- Focus: (1) develop action plans for priority linkages; (2) formulate land-use and management control guidelines; (3) identify funding and implementation mechanism; and (4) develop communication and awareness plan.





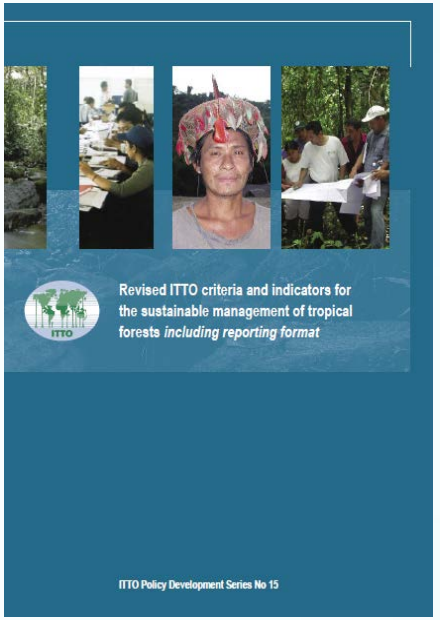
Heart of Borneo Initiative

- Comprises Malaysia, Indonesia and Brunei Darussalam; Established in 2007;
- 220,000sq km tract of forest landscapes;
- Focus:
  - creation of a network of PAs that is ecologically connected;
  - sustainable management of natural resources;
  - transboundary management initiatives;
  - eco-tourism; and
  - capacity building.



Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity;

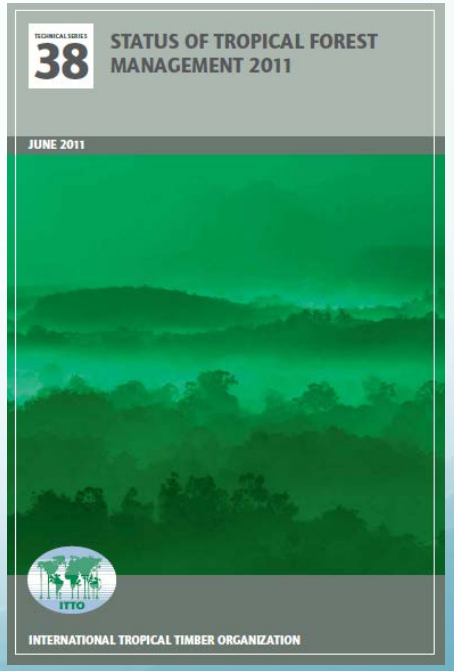
Target 12: All wild harvested plant-based products sourced sustainably



In 2010, c. 58% of the total forested area in Malaysia is managed using:

- International Tropical Timber Organisation (ITTO)'s Sustainable Management of Tropical Forests (SFM) Criteria and Indicators;

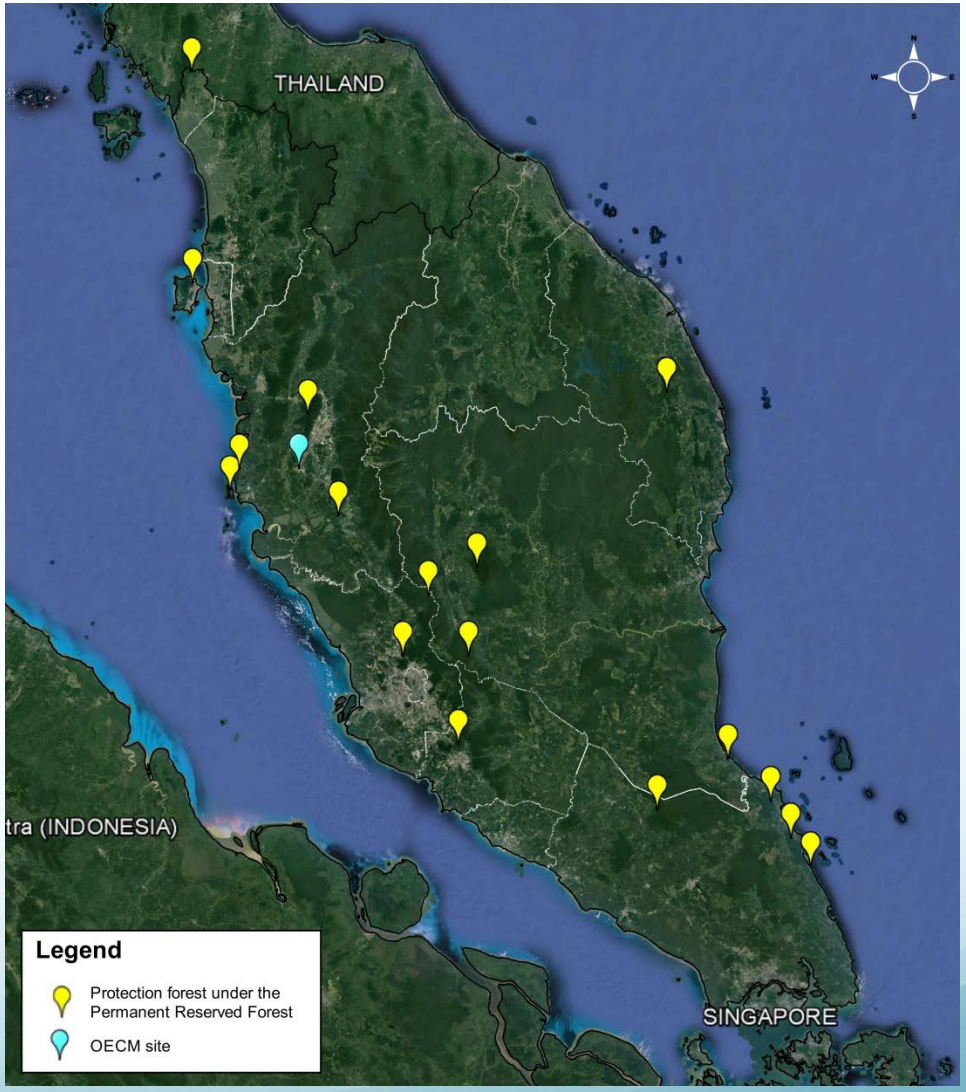
- compliance to forest certifications (Malaysian Timber Certification Scheme (MTCS), Programme for the Endorsement of Forest Certification (PEFC) and Forest Stewardship Council (FSC); as of 31 July 2018, 4.45 million ha of PEFC Certified Forests in 13 FMUs and 7 FPMUs and 365 PEFC Certificate for Chain of Custody Holders)



Target 7: At least 75 per cent of known threatened plant species conserved *in situ*

85.9% of MY's threatened species carries Criterion B indicating that current PAs are insufficient to conserve threatened species.

On Dipterocarpaceae, at least 21% of the CR and EN species is conserved in protection forests under PRFs and other effective area-based conservation (OECM) sites.



Target 8: At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery & restoration programmes

More than 200 taxa in the network of national botanic gardens comprising:

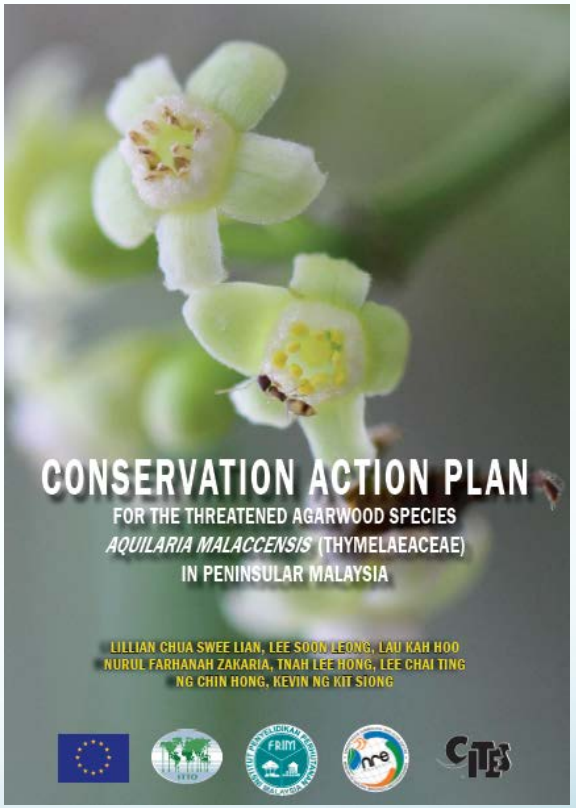
- *Nepenthes* spp. (Nepenthaceae),
- *Dendrobium* spp., *Paphiopedilum* spp. and *Phalaneopsis* spp. (Orchidaceae),
- *Rafflesia* spp. (Rafflesiaceae),
- Palmae; and
- Dipterocarpaceae;

Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

- Established initiatives through:
  - PA network that includes Virgin Jungle Reserves;
  - 26 *ex situ* conservation areas for oil palm, rubber, agricultural crops, wild fruit trees, medicinal and ethnobotanical plants, tropical forest tree species (including timber), orchids, ferns, non-timber forest species;
- Newer initiatives such as:
  - Genetic Resources Areas in the states of Johor and Sarawak;
  - Cryogenics and *in vitro* techniques for Dipterocarpaceae, Arecaceae, Leguminosae and Palmae.

Target 11: No species of wild flora endangered by international trade

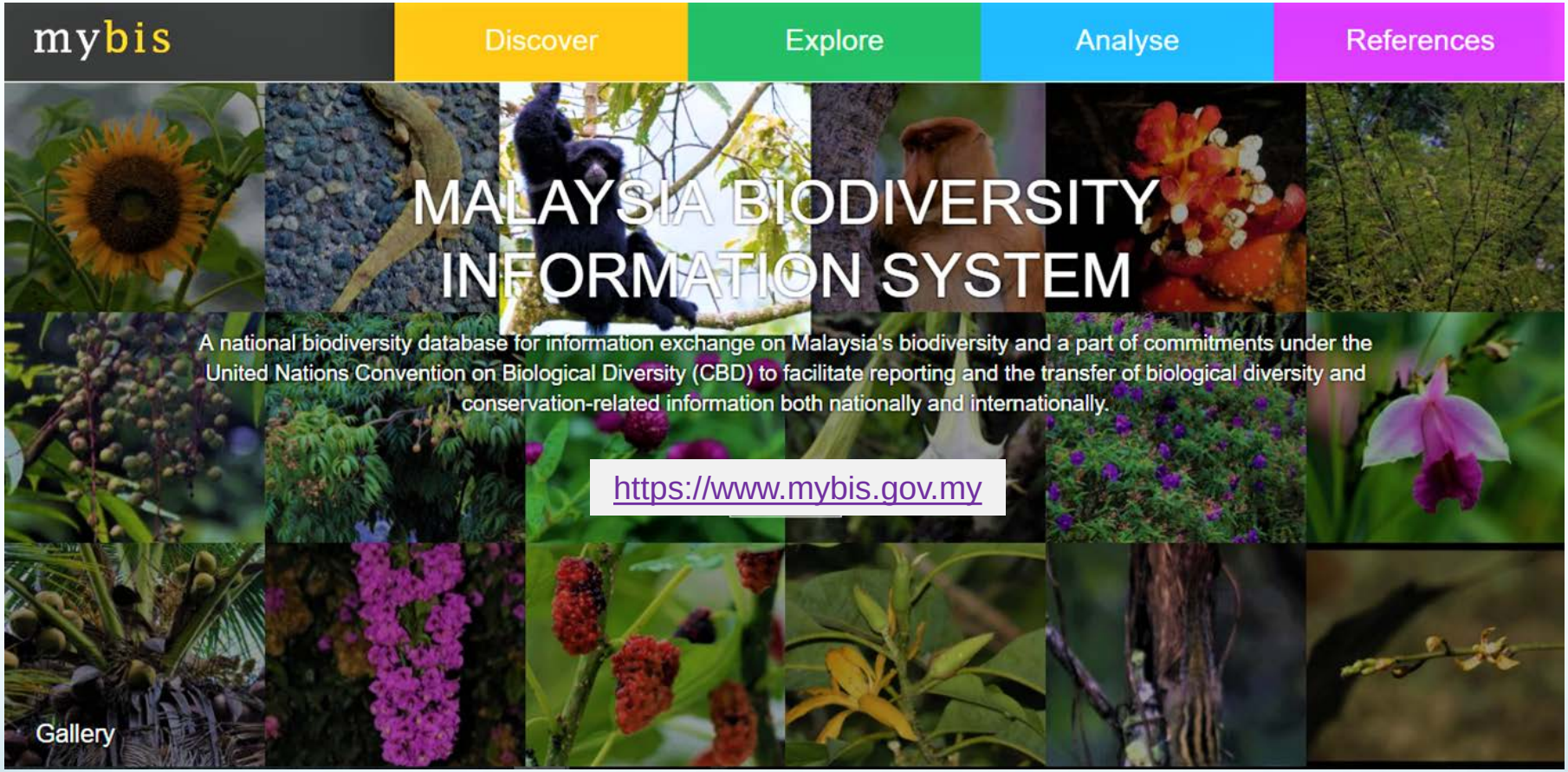
- Malaysia ratified CITES in 1978;
- International Trade in Endangered Species Act 2008 (Act 686);
- Non Detriment Findings for selected Appendix II species;
- Active in agarwood producing taxa initiatives that arise from the listing of *Aquilaria* and *Gyrinops* (Thymelaeaceae) in Appendix II in 2004;
- Conservation Action Plan (2016) for agarwood producing taxa *Aquilaria malaccensis* has 6 objectives and 37 actions.



Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, to support customary use, sustainable livelihoods, local food security & health care

- From 2007 to present, knowledge on medicinal and aromatic plants completed for Indigenous People (IP) in Peninsular Malaysia;
- Awareness on conservation of medicinal plants among ethnic groups of IP is enhanced;
- Activities related to database enhancement, inventory, bio-prospecting and issues on access to benefit sharing.

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness (CEPA) programmes



Others:

- Enhancing environmental and biodiversity education in the school curriculum;
- Assessing the effectiveness of CEPA activities at all levels of society;
- Preparation of a National CEPA Action Plan.

Table of Progress

Objective	Progress of Target
I: Knowledge	1
	2
	3
II: Conservation	4
	5
	6
	7
	8
	9
	10
III: Sustainable and equitable use	11
	12
	13
IV: Education and awareness	14
V: Capacity and public engagement	15
	16

Note: Red indicates <30% progress, yellow 30-65% and green >65%. No colour indicates not available.

The Main Challenges

- **Understanding the value of biodiversity** − (1) Financial mechanisms and markets ignore/distort the importance of biodiversity and natural processes that generate ecosystem services; and (2) Conventional indicators of economic growth do not take into account the loss of capital & human assets arising from depletion and degradation of ecosystem services;
- **Lack of science-based information** − Poorly known functional groups such as fungi and mosses;
- **Lack of funding** − (1) Documentation on biodiversity resources; (2) Capacity building to improve the implementation of conservation measures; and (3) Lack of sustainable financing for biodiversity and natural resource management; and
- **Lack of coordination** − (1) Holistic management of the environment and biodiversity is hampered by sector-based legislation and management setup; (2) Lack of transparency in certain aspects of decision making.

Thank you