





The ABO 2 is the flagship publication of the ASEAN Centre for Biodiversity (ACB).

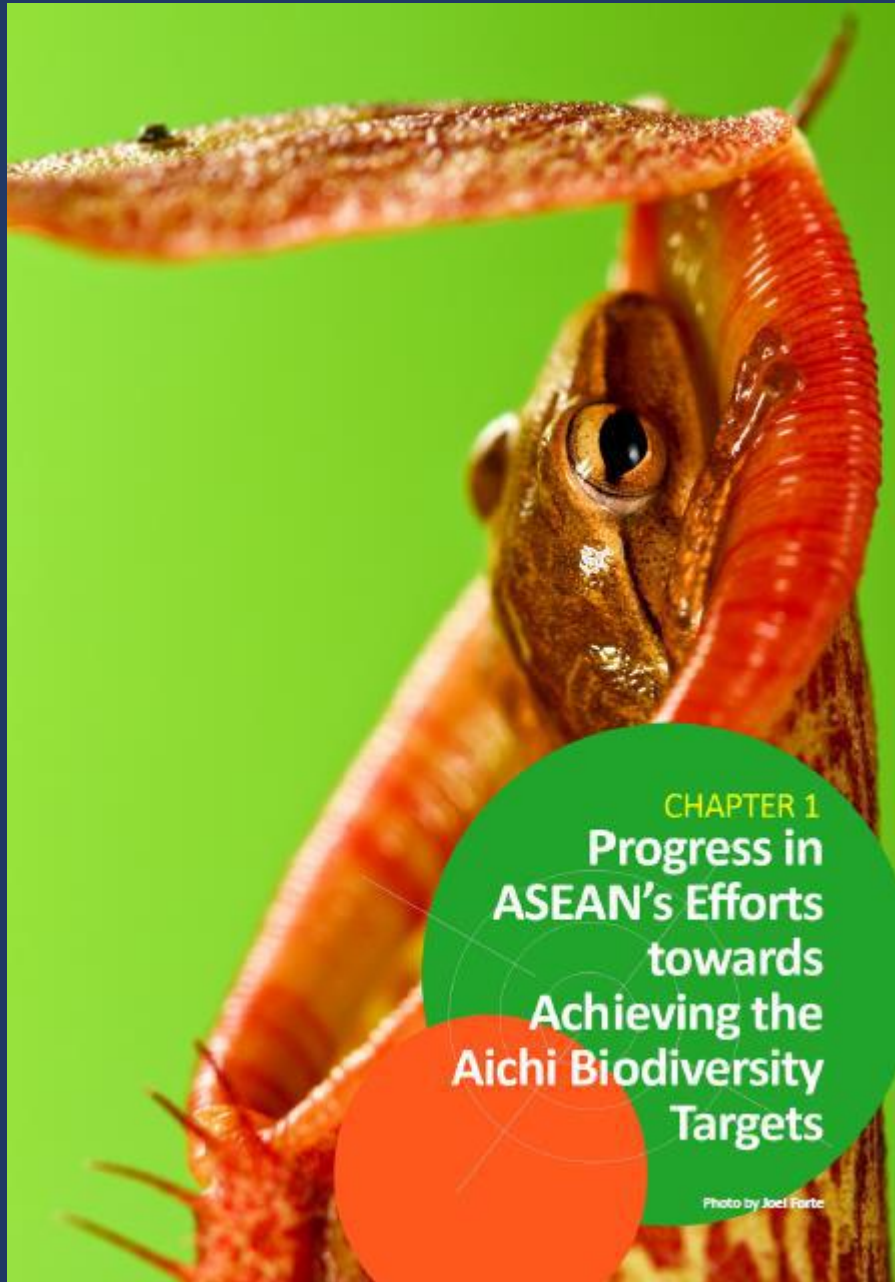
It showcases progress and lessons learned on biodiversity conservation in the ASEAN region for the period 2010-2015

Referred from 5th National Reports and other relevant information

The pressure-response-way forward framework was used to develop the ABO 2.

Reviewed by the
AWGNCB, ACB
Governing Board,
select members
of the Scientific
Advisory
Committee, AMS
selected experts
and the ABO 2
peer review
group





- **Infographics of 5th National Reports highlight the key achievements of AMS in efforts to achieve the Aichi Biodiversity Targets**
- **Summary of how AMS have mainstreamed biodiversity through communication, policy, sectoral development and master plans, national greening, conservation and rehabilitation programs, among others**
- **Aichi Targets Traffic Lights: Progress of the implementation of the Strategic Plan for Biodiversity 2011 – 2020 in the ASEAN Region**
- **Overcoming challenges to achieving the Aichi Biodiversity Targets**



Brunei Darussalam

There is active implementation of biodiversity awareness programmes at all levels of society with significant private sector participation.

Academic sector has begun to estimate the monetary values of environmental services, although this is not yet integrated into the national accounting system.

In the forestry sector, sawmill companies invest in more efficient wood processing techniques. Proper market-based incentives are being studied.

Timber harvesting has been stopped in all production forest reserves to increase forest conservation areas. Timber harvesting will be reallocated in areas intended for timber plantation development.

Forest reserves will be increased from 41% to 55% of the total land area.

Efficient fish culture farms and marine protected areas have been established.

The management of agriculture, fishery, and forestry are placed under the Ministry of Industry and Primary Resources to ensure that issues among these sectors are addressed.

Use of inorganic fertilizers is highly regulated and the use of organic fertilizers is encouraged.

Studies of invasive alien species have increased and government has strengthened its quarantine service.

Environmental Impact Assessment System is in place to mitigate adverse impacts on coastal and marine ecosystems.

Conserved areas are monitored and will be increased.

Threatened species are protected by law and conserved in collaboration with scientific and academic communities.

Livestock breeding centers and gene banks conserve genetic resources of farm animals and crops.

Laws protect vital ecosystems and recognise the rights and roles of local and indigenous communities.

Timber harvesting and related utilization of forest resources inside the country's peat swamp forests are not allowed.

A Biodiversity Law to consolidate biodiversity regulations and ensure effective implementation of the National Biodiversity Strategy and Action Plan is under development.

The Brunei Tropical Biodiversity Centre and Brunei Agro Technology Park undertake related research for biodiversity conservation and management. Field expeditions and collaborations help expand the knowledge base and increase capacity.

Local and traditional knowledge, innovations, and practices are widely recognized and integrated into resource management regulations.

Financing and implementation of biodiversity strategies are stipulated in Wawasan 2035.

Source: Brunei Darussalam Fifth National Report to the CBD

Efforts are ongoing to develop more communication, education, and public awareness materials to change and educate stakeholders.

Strategic plans are in place to reduce deforestation, restore degraded ecosystems, increase conservation areas, strengthen law enforcement, and monitor biodiversity conservation efforts.

There are increasing efforts in the sustainable management of the agriculture, aquaculture, and forestry sectors resulting in higher harvests and fish yields.

Solid waste management programs are decentralized to the sub-national level. Water quality monitoring and education on pollution issues are integrated into sub-national workplans.

National Biodiversity Status Report 2016 identifies status and trends in biodiversity. On the ground efforts are in place to conserve endangered species.

Payment for Ecosystem Services has been identified for pilot testing in some areas. Ecosystem resilience and the contribution of carbon stocks are promoted through the Reducing Emissions from Deforestation and Forest Degradation Programme.

The Cambodia National Clearing-House Mechanism (CHM) and Biosafety CHM have been developed.

Effective implementation of fishery legislation has reduced illegal fishing, increased and fostered effective management of fish sanctuaries, and increased annual aquaculture fish yield by 15%.

Priority invasive alien species, such as *Mimosa pigra*, are addressed through the National Strategy and Action Plan in Invasive Species and other tools.

Localities being for deprotection.

The Nagoya Protocol on Access and Benefit Sharing (ABS) has been mainstreamed into the draft Environmental Code and national ABS legislation is being developed.

Funds for biodiversity conservation have been mobilized from government and development partners.

Source: Indonesia Fifth National Report to the CBD

ONESIA

Indonesia

Awareness programs target all stakeholders, from students (e.g. Biodiversity Warrior Program) to government officials (Batsan Kenya Kalabaturu).

The National Long-Term Development Plan 2005–2025 enhances biodiversity conservation as a foundation for development.

Towards Green Indonesia Program provides incentives to districts that excel in conservation and environmental damage control. There are also incentive programs for greenhouse gas emission reduction and biodiversity conservation and community development.

Government supports organic agriculture. Organic certification institutions have been established and certified organic agriculture areas have reached 901.35 sq km.

Rehabilitation of conservation forests, city forests, mangroves and critical lands has reached 25,000 sq km.

Fisheries protection is implemented through the National Action Plan for Prevention and Anticipation of Illegal, Unreported, and Unregulated Fishing (IUU Fishing 2012–2016).

Law of the Republic of Indonesia number 41 year 2009 on the Protection of Sustainable Agriculture Land for Food was established. The law provides for programs to enhance sustainable use of biodiversity in cities and villages through models of sustainable housing and food production areas (gn kltu).

As of 2013, Indonesia has established 270,000 sq km of both terrestrial and marine conservation areas.

For 2014–2019, the government aims to boost the population of 25 endangered species, including buffalo, Javan rhino, Sumatran tiger, Sumatran elephant, Rousa pig, anoa, Javan gibbon, orangutan, proboscis monkey, Komodo dragon, Bali starling, maleo, Javan eagle, and small yellow crested cuckoo. 25 botanical gardens have been established to conserve plant species.

The National Development Program of Parent Seed Garden is the repository for genetic resources. 19 Provincial Commissions and 2 Municipalities/District Commissions for Genetic Resources have been established. The Division of Plant Variety Protection also collects and preserves genetic material.

The government promotes campaigns and regulations to protect and ensure the sustainable utilization of water source areas.

The Nagoya Protocol was ratified through the Law of the Republic of Indonesia number 11 year 2013 on Genetic Resources Management. The Ministry of Environment and Forestry has drafted the decree regarding access to and equitable sharing from the utilization of wildlife genetic resources.

The Indonesia Biodiversity Strategy and Action Plan 2015–2030 is being implemented.

Law and database on genetic resources, traditional knowledge, and folklore have been developed. Numerous books on useful and medicinal plants have been published.

Completion of the Indonesia Biodiversity Information Facility will make biodiversity information interoperable and facilitate information exchange across the country.

A strategic plan is being developed for resource mobilization under the Biodiversity Finance Initiative.

Source: Indonesia Fifth National Report to the CBD

1 Environmental awareness has been promoted through outreach activities, media training and environmental journalism, development of an environmental curriculum, and capacity building for government staff.

Legislation and agreements on environmental and forest conservation and timber harvesting are being revised. Initiatives are in place to promote the conservation and sustainable use of biodiversity. Payment for Ecosystem Services, Village Forest Management Agreements, support livelihood and community development, engage local people in biodiversity monitoring, and advance efforts in Reducing Emissions from Deforestation and Forest Degradation.

8 Integrated Water Management Plans have been developed for 10 priority river basins. The revised Water Law provides guidelines for preventing negative socio-economic and environmental impacts. Research priorities for water bodies, watersheds, and aquifer recharge areas have been identified and a centralized pollution database covering solid waste, hazardous material, soil pollution, air and noise emissions, and wastewater has been made for six targeted cities. Research projects that focus on risks and impacts of pesticide use in agriculture in northern Lao PDR are being developed.

13 The Biotechnology Safety Law has been approved and the National Policy on Rice Production for Food Security has been drafted. Research has been conducted on relevant taxa including wild mushrooms, medicinal plants and orchids, indigenous rice varieties, and fungi diversity. The Biotechnology and Ecology Institute has been established. Demonstration gardens and ethno-botanical plots serve as repositories for *ex situ* conservation. Various activities promote agrobiodiversity.

15 A range of awareness, information sharing, and capacity building activities have been undertaken to promote the Nagoya Protocol and the National Access and Benefit Sharing Framework.

Biodiversity values have been integrated into policies on urban and land use planning, disaster compensation and resettlement, natural resources and environmental management, human resources, and tourism. Biodiversity values have also been integrated in the revised National Strategy on Environmental and Climate Change Education and Awareness 2016–2030; Decree on Strategic Environment Assessment (SEA); environmental National Master Land Use Plan; and criteria for sustainable cities.

15 Village forest management and community forest programs are being implemented and promoted. There is ongoing re-delineation of forest areas. An improved Participatory Forest and Land Use Planning, Allocation and Planning Process is being implemented to stabilize upland land use, prevent habitat loss, and rejuvenate lost habitat. The Forest Law Enforcement Governance and Trade process has been established and Provincial Law Enforcement Action Plan has been officially endorsed. 15 of 24 national protected areas now have management plans and two Ramsar sites have been established.

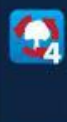
11 Improved forest management plans, community-based patrolling, agreements on co-management of protected areas, and management effective assessments have been implemented. Law enforcement, zoning, and SMART system training have been conducted. There are increasing efforts in capacity building and education of protected area staff. State forest lands are being re-delineated to improve management and representativeness of ecosystems.

14 Herbicide awareness and management programs, establishment of fish conservation zones, and incentives to link local livelihoods with ecosystem health have been implemented. The Forest and Land Use Planning, Allocation and Management (FALLPAM) program was established for sustainable ecosystem management.

17 The National Biodiversity Strategy and Action Plan (NBSAP) 2016–2025 is being finalized. Technical group monitor NBSAP activities and a National Steering Group for the Convention on Biological Diversity has been created. A Sub-Sector Working Group on Agrobiodiversity has been established.

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Lao PDR



4 Organic farmers' markets have Lao Certification Body and p certification have been establ Sheering Committee for forest been implemated. There ha in mining legislation and licen villager generated quotas for products (NTFPs) extraction; aquifer recharge.

4 The Aquatic Resources Law has been developed. Programs continue to improve fishery management practices, prevent fishery declines, and support breeding and distribution of indigenous fish species. Fish conservation zones and regulations and appropriate aquaculture systems have been established and improved.

6 Control measures have been developed for invasive plant and animal species. Improved regulations protect crops and livestock in priority areas. The Biotechnology Safety Law has created opportunities to train government staff, while addressing Biosafety issues.

1 Awareness and education are integrated in the implementation of multilateral environmental agreements.

3 The National Green Technology Policy was developed to accelerate an economy that promotes sustainable development.

4 The Sustainable Consumption and Policy (SCP) Support Malaysia Project 2012–2016 aims to provide inputs to the Malaysia Plan 2016–2020 and the SCP Blueprint.

7 The Heart of Borneo Initiative and National Strategies and Action Plans on Agricultural Biodiversity Conservation and Sustainable Utilization 2012 are among the strategies developed for the sustainable management of agriculture, aquaculture, and forestry areas.

10 The National Plan of Action for the Coral Triangle Initiative and other plans maintain the integrity of marine ecosystems.

13 Accession to the International Treaty on Plant Genetic Resources for Food and Agriculture helps ensure the protection of local plant varieties.

17 The National Policy on Biological Diversity 2015–2025 provides policy directions for biodiversity conservation.



Malaysia

5 The Central Forest Spine Master Plan ensures maintenance of ecosystem services. More areas continue to be set aside for conservation.

8 The Environmental Quality Act 1974 regulates soil and water pollution and other prohibitions.

9 The National Action Plan on the Prevention, Eradication, and Containment of Invasive Alien Species is the key framework for addressing IAS issues.

11 Malaysia works with the International Maritime Organization and other countries on the designation of Particularly Sensitive Sea Areas, which require special protection because of recognized ecological, socioeconomic, or scientific attributes and vulnerability to damage by international shipping activities.

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14 Master plans for the protection of various sites in the country contribute to restoration and protection of important ecosystems and services.

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1 Awareness and education campaigns on biodiversity conservation, protected areas, solid waste management, food security, biosafety, and other issues are being implemented and promoted.

3 Organic farming, ecotourism, and other livelihood options provide incentives to biodiversity conservation.

7 Implementation and monitoring of management plans, stronger law enforcement, improved buffer zone management, bans on illegal and unsustainable harvesting practices, biodiversity surveys and research aim to improve sustainable management of agriculture, aquaculture, and forestry resources.

10 Measures to protect coral reefs include a ban on destructive fishing practices; regular patrols and effective law enforcement; community-based fisheries management; establishment of coastal and marine research centers; and promotion of sustainable fisheries management.

14 Multi-stakeholder support; benefit-sharing mechanisms; buffer zone management; ecotourism; and livelihood options will benefit local communities and enhance environmental protection.

17 The National Biodiversity Strategy and Action Plan is being implemented with the participation of multiple stakeholders.

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Participatory approaches for community-based resource management and Environment Impact Assessments are implemented to strengthen understanding of biodiversity values.

4 Various laws and programs monitor timber, forest, fishery, and agriculture management to ensure sustainability.

8 Pollution will be addressed through environmental impact assessments; efficient sewage and wastewater treatment systems; monitoring of air, water, and soil quality; capacity building among relevant personnel; education and awareness campaigns on pollution issues; and collaboration with international organizations on the development of clean technologies.

12 Biodiversity surveys, studies of priority species, and support of local communities will increase protection of critical and vulnerable ecosystems.

15 Sustainable forest management; rehabilitation and protection of critical watersheds; land use planning; sustainable agriculture; and reclamation of mining areas will help increase carbon storage and strengthen ecosystem resilience.

18 Local and indigenous communities will benefit from participation in buffer zone management in protected areas; benefit sharing programs; and legislative support.

19 Myanmar is monitoring the progress of the implementation of the country's Clearing-House Mechanism.



6 Government aims to reduce environmental damage to coastal areas and ban destructive fishing practices.

5 The government aims to adopt an integrated land use plan, establish a Land Use Commission, conduct environmental impact assessments and rehabilitate mining and degraded forest areas to prevent further habitat loss.

9 Myanmar aims to collaborate with other countries to monitor impacts and management of invasive alien species.

13 Stronger *ex situ* programs; extension services on sustainable food production; promotion and certification of organic farming; capacity building; development of gene banks and greater conservation will aid the conservation of the genetic diversity of crops and livestock.

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Source: Lao PDR Fifth N

Source: Malaysia Fifth National Report to the CBD

Source: Myanmar Fifth National Report to the CBD



Philippines

4 Special attention has been paid to balancing conservation and the economic needs of local communities. Assessments of biodiversity-friendly livelihoods demonstration sites and trainings on the value of ecotourism were conducted under the Partnerships for Biodiversity Project. The United Nations Development Programme, Global Environment Facility, Foundation for the Environment, Philippine Tropical Forest Conservation Foundation and other partners provide support for sustainable livelihood initiatives.

8 68 Protected Area Community-based Management Agreements occupying a total area of 391.38 sq km has benefited 5,457 households and 15,568 individuals in 21 protected areas. Majority of these households engage in agricultural activities.

10 Legislation has been implemented to protect islands and island passages that are considered vulnerable and critical habitats for biodiversity including Mindoro, Palawan, Verde Island Passage Marine Corridor, and Sulu Subwage Marine Ecosystem. Under Executive Order 71 (2012), island ecosystems are among the "No-Go-Zones", which are considered closed to mineral contracts, concessions and agreements.

14 Various programs focus on ensuring the protection, conservation and sustainable use of watersheds, including the Department of Environment and Natural Resources River Basin Control Office-led preparation of river basin master plans of 18 major river basins. The National Convergence Initiative of various government departments aims to improve, conserve, protect and rehabilitate natural resources and target 100 watersheds, many of which are outside priority river basins.

18 The Indigenous People's Rights Act of 1997 (IPRA) recognizes the rights to cultural identity, full ownership and protection of their cultural and intellectual property, and restitution of any cultural, intellectual, religious, and spiritual property that have been taken without consent (Sec. 32). Free Prior Informed Consent is required for activities that may affect spiritual and religious traditions, customs, and ceremonies including the collection of research on Indigenous Knowledge Systems Practices.

Source: Philippines Fifth National Report to the CBD



Thailand

1 In Singapore, many different organizations and nature interest groups have been conducting outreach activities targeted at the community. These include guided walks, seminars, workshops, exhibitions and competitions to engage the public and increase appreciation of biodiversity among Singaporeans. Some examples include:

2 Community in Nature initiative – a National Parks Board, Singapore (NParks) initiated movement to engage different groups in the community to conserve Singapore's biodiversity by bringing together all of NParks' nature-related events, activities, and programs under a single umbrella.

5 One of Singapore's strategies in the National Parks Board (NParks) is to increase habitat connectivity. So recent addition of two new Nature A Pulau Ubin (Beting Biokok) and the de Park announced in July 2014, measures the Eco-Link@BKE, Nature Ways, Round and the Rail Corridor. Finally, refo habitat enhancement in parks such as Green, Sungei Pandan and Pu

7 Festival of Biodiversity – an annual signature community outreach event organized by the Biodiversity Roundtable (a group of stakeholders within the stakeholder community, including NParks) for the conservation of Singapore's Natural Heritage.

12 Under the Species Recovery programmatic thrust of NParks' Nature Conservation Master Plan, 13 threatened species are identified and prioritized based on endemism, conservation status and habitat range. This will help to guide actions towards increasing populations of the species identified. Various species conservation and recovery programs are in place, such as the giant clam restocking program and the freshwater crab conservation working group, for the conservation of the critically endangered Singapore freshwater crab (Aporosa sinuata).

15 Singapore's NBSP currently undergoes review and non-commercial research is well established, and the policy for commercial research is currently being reviewed. Singapore is not yet a Party to the Nagoya Protocol, but national consultations are currently ongoing to consider if Singapore should accede to the Protocol.

16 Access and Benefit Sharing processes for non-commercial research is well established, and the policy for commercial research is currently being reviewed. Singapore is not yet a Party to the Nagoya Protocol, but national consultations are currently ongoing to consider if Singapore should accede to the Protocol.

Source: Thailand Fifth National Report to the CBD



Viet Nam

3 The Royal Forest Department established the Model Community Award, which recognizes the application of local wisdom of community forests. The Green recognizes outstanding environmental conservation projects.

5 Biodiversity value assessment has been conducted through the Payment for Ecosystem Services project.

7 With forest cover at 31.57% of the total land area in 2013, the Master Plan on National Forest Resources Protection aims to allocate 40% of the total land areas to forests by 2024.

9 The national list of invasive alien species has been updated with measures for their control. Invasive alien species used for commercial purposes is a major concern.

12 About 12 species of fauna in Thailand have become extinct and many more are on the brink of extinction. An ongoing campaign protects the rosewood, which is threatened due to its high market value. Other measures to protect species include collaborations with international organizations on wildlife trafficking; a Memorandum of Agreement with the Convention on Migratory Species to protect the dugong; protection of the Irrawaddy dolphin under the patronage of Queen Sirikit; and the "Bokun Wildlife to Heal the Forest" project, which raises 31 species of wild animals in breeding stations in 29 conserved forests.

15 Various strategies promote reforestation and forest rehabilitation such as the Master Plan on Water Resources Management 2013-2017 and ASEAN Forest Project and Mangrove Forest Strategic Plan 2014 – 2018. Other programs that promote climate resiliency are the Low Carbon Municipality, Green City and pollution-free and sustainable city projects.

15 The government recognizes traditional knowledge, innovation, and practices of local communities; has developed a database on traditional knowledge; and encourages community participation in natural resource management.

Source: Thailand Fifth National Report to the CBD



1 The government aims to strengthen inter-sectoral coordination between the environmental police, market management, customs, rangers, and fisheries authorities; community participation; and media particularly in wildlife law enforcement.

3 Positive incentives for biodiversity conservation are being developed particularly to expand the protected area system.

5 Regulations to control commercial logging have been issued to reduce the loss of natural habitats.

6 There are increasing efforts to strengthen sustainable fisheries management to counter pressures to coastal and marine resources.

10 Sustainable management measures have to be developed and implemented to address alarming declines in the health and coverage of coral reef, seagrass, and mangrove ecosystems.

13 If not addressed, over-exploitation, natural disasters, outdated agricultural practices, population growth and urbanization, climate change, and other pressures will undermine the genetic diversity of crop varieties and livestock breeds.

18 Alternative livelihoods for indigenous communities are under study to reduce pressures on natural resources.

Source: Viet Nam Fifth National Report to the CBD

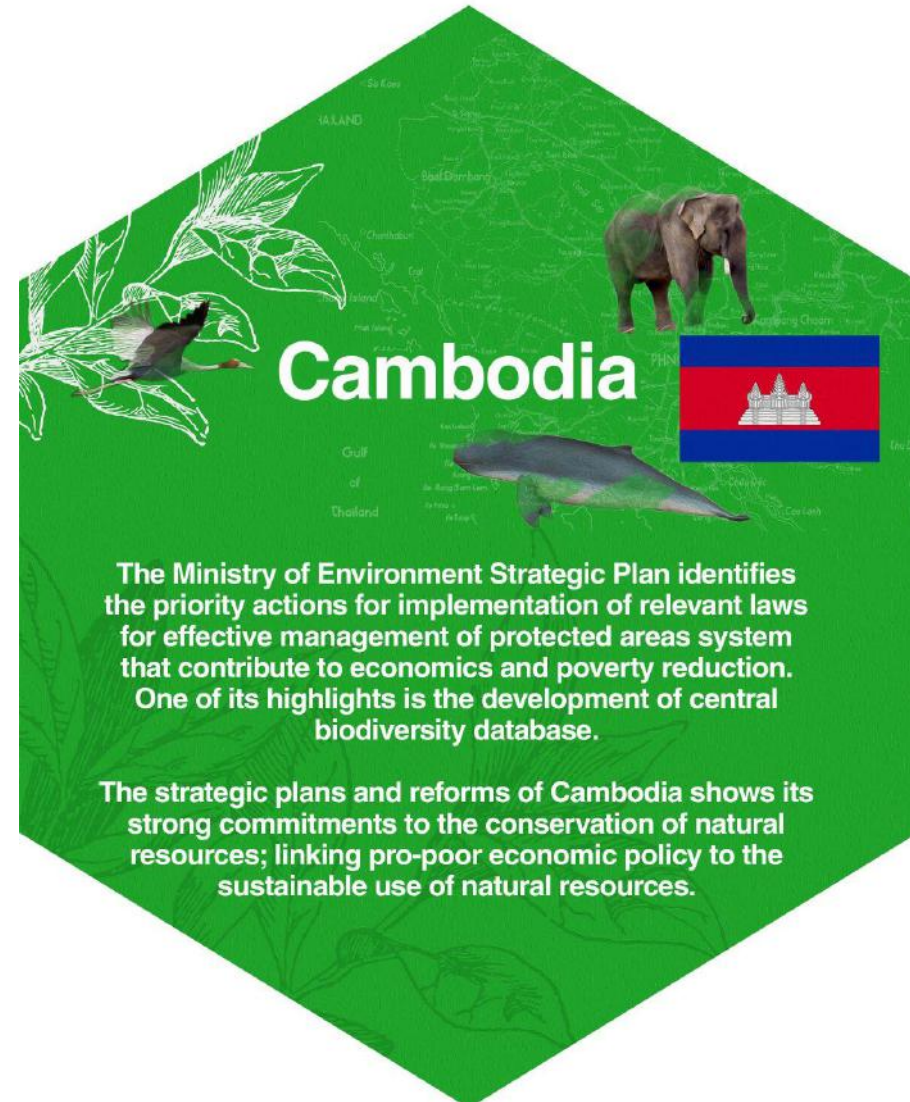
Mainstreaming



Brunei Darussalam

Wawasan 2035, Brunei Darussalam's long-term development plan, aspires to achieve accomplished people, dynamic and sustainable economy, and a satisfactory quality of life.

Brunei's environment strategy mainstreams biodiversity conservation in the government system and calls for the proper protection and conservation of the natural environment, and habitats important to the country's culture.



Cambodia

The Ministry of Environment Strategic Plan identifies the priority actions for implementation of relevant laws for effective management of protected areas system that contribute to economics and poverty reduction. One of its highlights is the development of central biodiversity database.

The strategic plans and reforms of Cambodia shows its strong commitments to the conservation of natural resources; linking pro-poor economic policy to the sustainable use of natural resources.

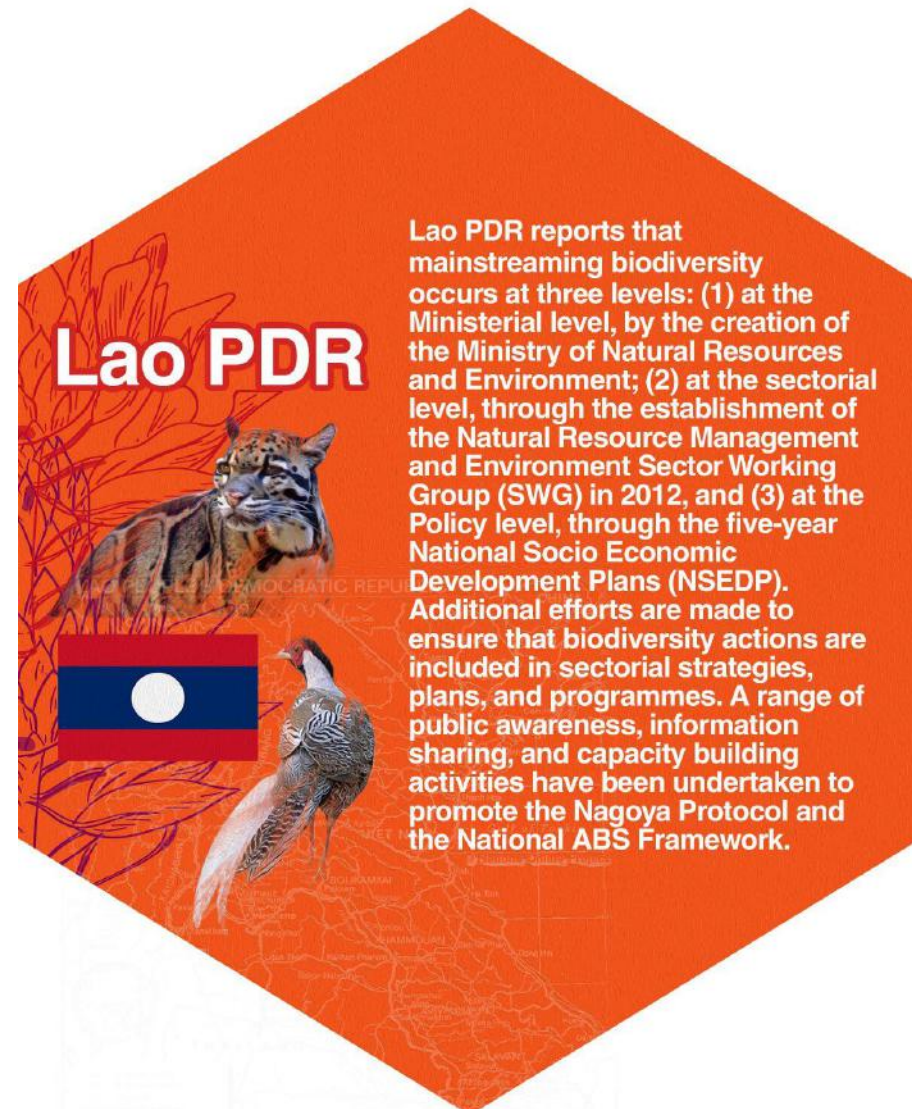
Mainstreaming

A blue hexagonal graphic with a map of Indonesia in the background. It features illustrations of a fern, a bird, a flower, and a water buffalo. The Indonesian flag is shown at the bottom right.

Indonesia's strategy is to integrate biodiversity into activities of national development, by involving various stakeholders. Government policies on the management of biodiversity are embodied in laws and regulations.

As an example, the Biodiversity Action Plan for Indonesia (BAPI 1993) has been updated to become the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020. Also, Biodiversity Conservation as a foundation for development has been integrated into the National Long-Term Development Plan (2005–2025).

Indonesia

An orange hexagonal graphic with a map of Laos in the background. It features illustrations of a tiger, a bird, and the Lao flag. The text 'Lao PDR' is prominently displayed.

Lao PDR

Lao PDR reports that mainstreaming biodiversity occurs at three levels: (1) at the Ministerial level, by the creation of the Ministry of Natural Resources and Environment; (2) at the sectorial level, through the establishment of the Natural Resource Management and Environment Sector Working Group (SWG) in 2012, and (3) at the Policy level, through the five-year National Socio Economic Development Plans (NSEDP). Additional efforts are made to ensure that biodiversity actions are included in sectorial strategies, plans, and programmes. A range of public awareness, information sharing, and capacity building activities have been undertaken to promote the Nagoya Protocol and the National ABS Framework.

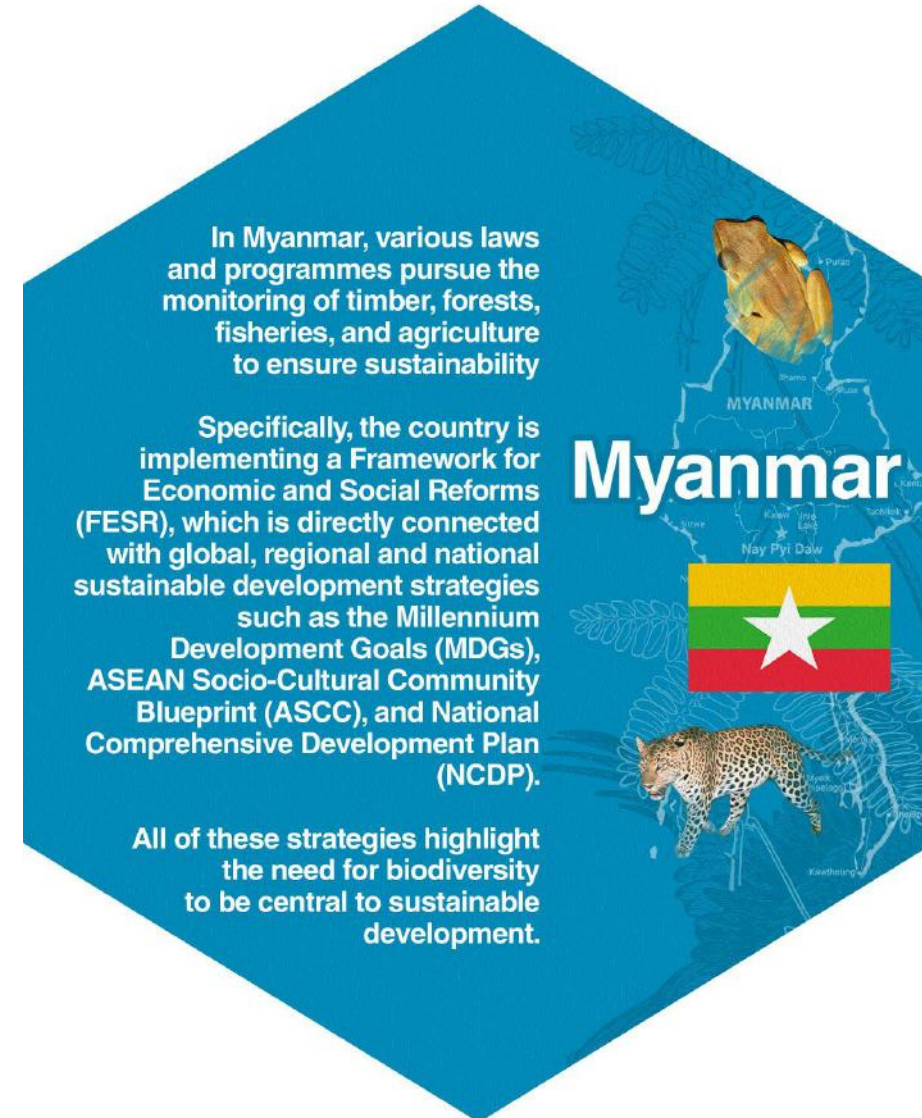
Mainstreaming



Malaysia

Malaysia's National Policy on Biological Diversity 2016 – 2025 demonstrates its commitment to conserve biological diversity, promote its sustainable use, and ensure fair and equitable sharing of the benefits arising out of its utilization.

The NPBD 2016-2025 specifies 17 national biodiversity targets to be implemented by all of its stakeholders and has put in place legislative and regulatory frameworks.



In Myanmar, various laws and programmes pursue the monitoring of timber, forests, fisheries, and agriculture to ensure sustainability

Specifically, the country is implementing a Framework for Economic and Social Reforms (FESR), which is directly connected with global, regional and national sustainable development strategies such as the Millennium Development Goals (MDGs), ASEAN Socio-Cultural Community Blueprint (ASCC), and National Comprehensive Development Plan (NCDP).

All of these strategies highlight the need for biodiversity to be central to sustainable development.

Mainstreaming

Philippines

Intersecting entry points for mainstreaming biodiversity include national and subnational policies and plans, economic and fiscal incentives, sector plans and policies and governance.

The Philippines has developed and implemented initiatives at each of these entry points. The International Council for Local Environmental Initiatives (ICLEI)-Local Governments for Sustainability produced an introductory Training Manual on Mainstreaming Urban Biodiversity into local governance as part of its Preparatory Research Project for Local Action for Biodiversity Asia Initiatives.

The Philippines is hosting the ASEAN Centre for Biodiversity (ACB), an international organization that continues to implement programmes and projects to mainstream biodiversity conservation in the ASEAN region.

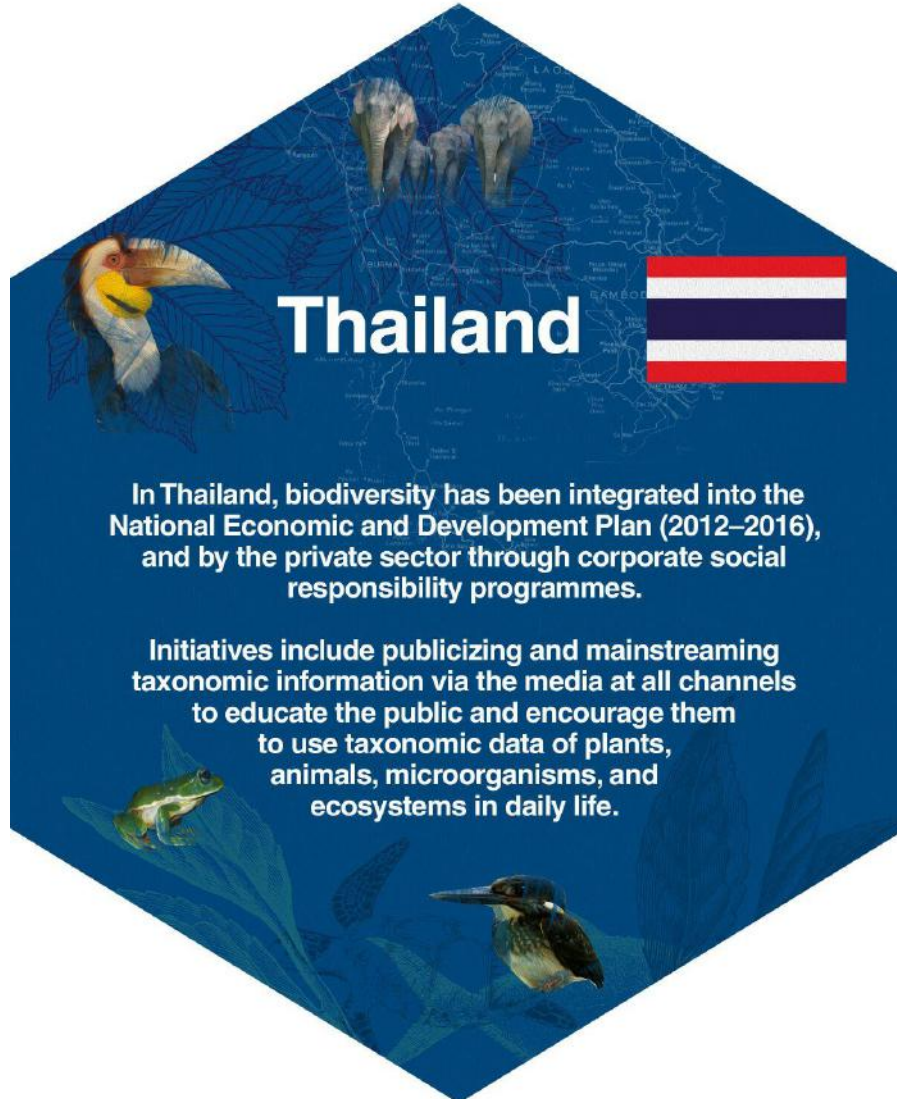


The Sustainable Singapore Blueprint 2015 outlines its national vision and plans for a more livable and sustainable Singapore, and incorporates targets in various sectors that track efforts in environmental protection such as green and blue spaces.

Singapore



Mainstreaming



The infographic for Thailand features a blue background with a faint map of the country. At the top, there are illustrations of two elephants and a toucan. The Thai flag is positioned to the right of the country name. Below the text, there are illustrations of a green frog and a kingfisher.

Thailand

In Thailand, biodiversity has been integrated into the National Economic and Development Plan (2012–2016), and by the private sector through corporate social responsibility programmes.

Initiatives include publicizing and mainstreaming taxonomic information via the media at all channels to educate the public and encourage them to use taxonomic data of plants, animals, microorganisms, and ecosystems in daily life.



The infographic for Viet Nam features a green background with a faint map of the country. At the top, there are illustrations of a bird and a gibbon. The Viet Nam flag is positioned to the right of the country name.

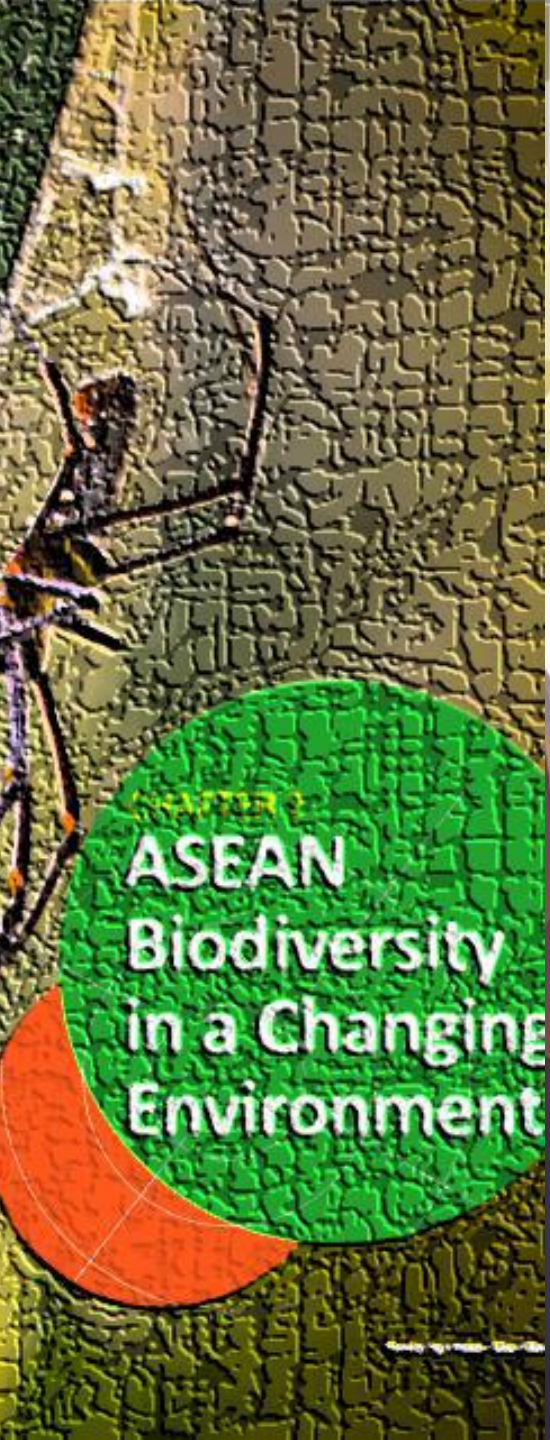
Incentives for biodiversity conservation are being developed particularly to expand the protected area system in Viet Nam. Public awareness and capacity building on ABS have been implemented. Wastewater treatment systems and solid waste management programmes are being monitored to reduce pollution from unsustainable agriculture, aquaculture, and other industrial practices.

Viet Nam

2A State of Ecosystems

- Presents a picture of the state of the region's forests, agrobiodiversity resources, inland waters, and coastal and marine resources
- Presents various programs and activities that are underway that aim to halt the degradation and loss of vital habitats and ecosystems





Forest: Still an overdrawn natural resource

One ASEAN
community
progressing
in harmony
with nature



Healthy
Environment

Forest Vitality

Ways Forward



ASEAN
Forestry Master
Plan



Protection of old
growth forests



Landscape
restoration and
ecological and spatial
principles in
reforestation and
rehabilitation
programs



Reduced forest
encroachment



Green
economy

Effective
protected area
programs



Forest certification
and labelling



Reducing Emissions from
Deforestation and
Forest Degradation,
The Bonn Challenge,
and pledges on
restoration

Ecological
and green
corridors



Status and Trends



Increasing demand
for wood, fuel,
and paper products

Forest
defragmentation
and habitat loss



By 2100,
13%–42% loss
of ASEAN species

Infrastructure
development
and forest
encroachment



Agricultural
expansion and
plantation
establishment



0.7% decrease in
ASEAN's forest
cover per year
from 2000–2015

By 2100,
70%–90% loss
in habitat area



PRESSURES

Genetic erosion 

Conversion of agricultural lands 

Decline in pollination services 

Invasive Alien Species 


STATE



Increased production through high-yielding varieties and breeds 

Agricultural area	Forest area
1990: 1.07M sq km	1990: 2.41M sq km
2013: 1.31M sq km	2013: 2.11M sq km

Urban population	% Arable area
1961: 42M	1990: 64
2013: 283M	2013: 53

Increased use of pesticides 

2006: 42,773 tonnes
2013: 64,311 tonnes

Agricultural Biodiversity:

Providing genetic diversity to enhance and sustain agricultural productivity



Ways Forward

Strengthen *ex situ* and *in situ* conservation

- Increased accessions of crop and livestock genetic resources in gene banks 

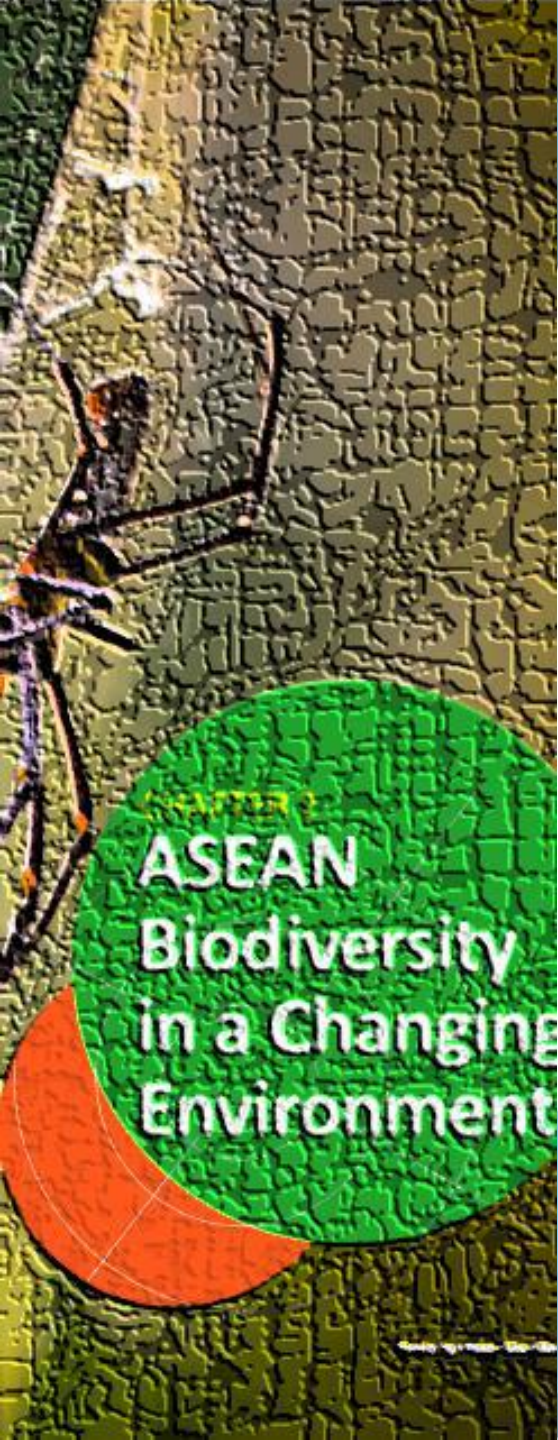
Make crucial information available 

- *Ex situ* accessions
- *In situ* best practices
- Status and trends of pollinators

Develop/establish ASEAN Regionally Important Agro-Ecological Heritage Systems (ARIAHS) 

Improve the ASEAN policy framework for agricultural biodiversity 

ASEAN Biodiversity in a Changing Environment



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Inland Waters: ASEAN's most threatened habitats

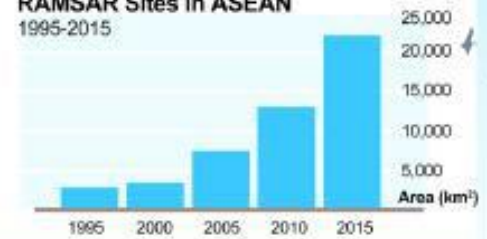


Threats to ASEAN's lakes, rivers, and peatlands

Dams and water management/ use	Industrial and household sewage	Garbage and solid wastes	Infrastructure development
Vegetation clearance/ land conversion	Invasive Alien Species	Agriculture and aquaculture	Destructive fishing and harvesting of resources

Source: AMS' Fifth National Reports to the CBD

RAMSAR Sites in ASEAN 1995-2015



Ways Forward

- Establish a regional agenda that aligns social and political interests with responsible governance of inland waters.
- Increase interest at all levels of governance in massive reforestation to reduce erosion and impacts from flooding and landslides.
- Assess the importance and total economic value of inland waters and their benefits to the economy and the communities directly dependent on these areas for their livelihood.
- Strengthen policies and laws on the management and sustainable use of inland waters and their resources.
- Implement information dissemination program for policy makers and the general public on the values of inland waters in coordination with ASEAN Member States.
- Employ an ecosystem-based approach to management.

ASEAN's Response

AMS with policies on wetland conservation

- Indonesia
- Malaysia
- Philippines
- Thailand
- Viet Nam

25% of the remaining tropical peat swamp forests in ASEAN are in designated protected areas.

Source: Biodiversity and Conservation of Tropical Peat Swamp Forests

8 out of 10 AMS are parties to the Ramsar Convention on Wetlands designating a total area of **18,007 sq km** of inland wetlands.

Source: Ramsar Convention on Wetlands



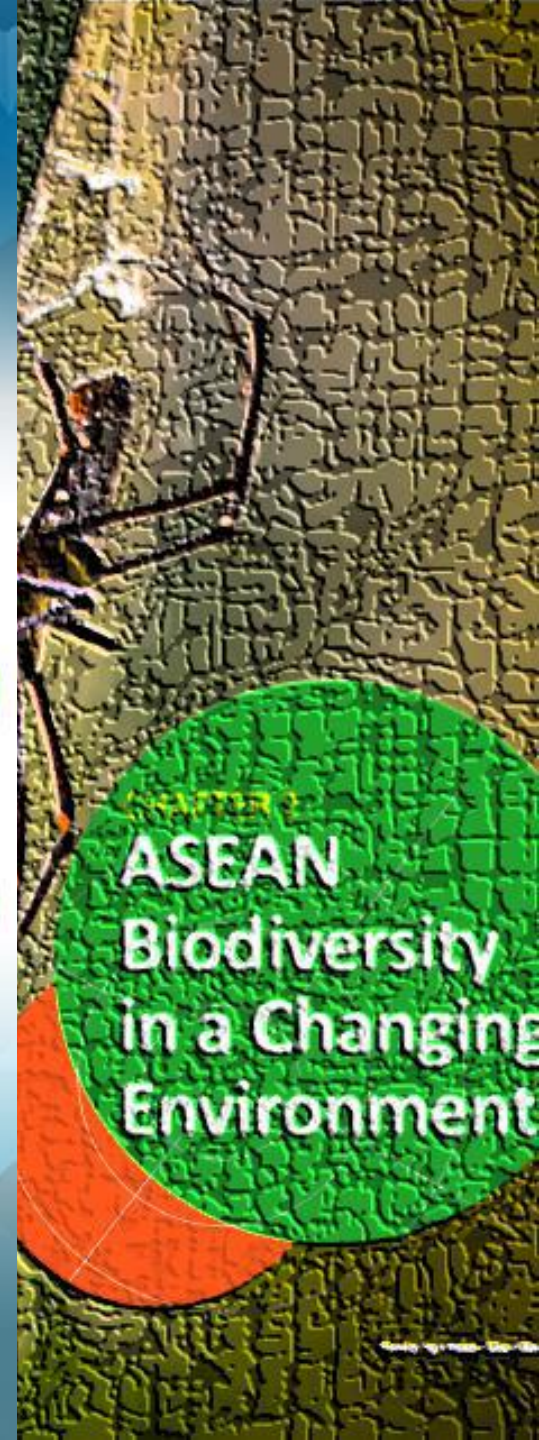
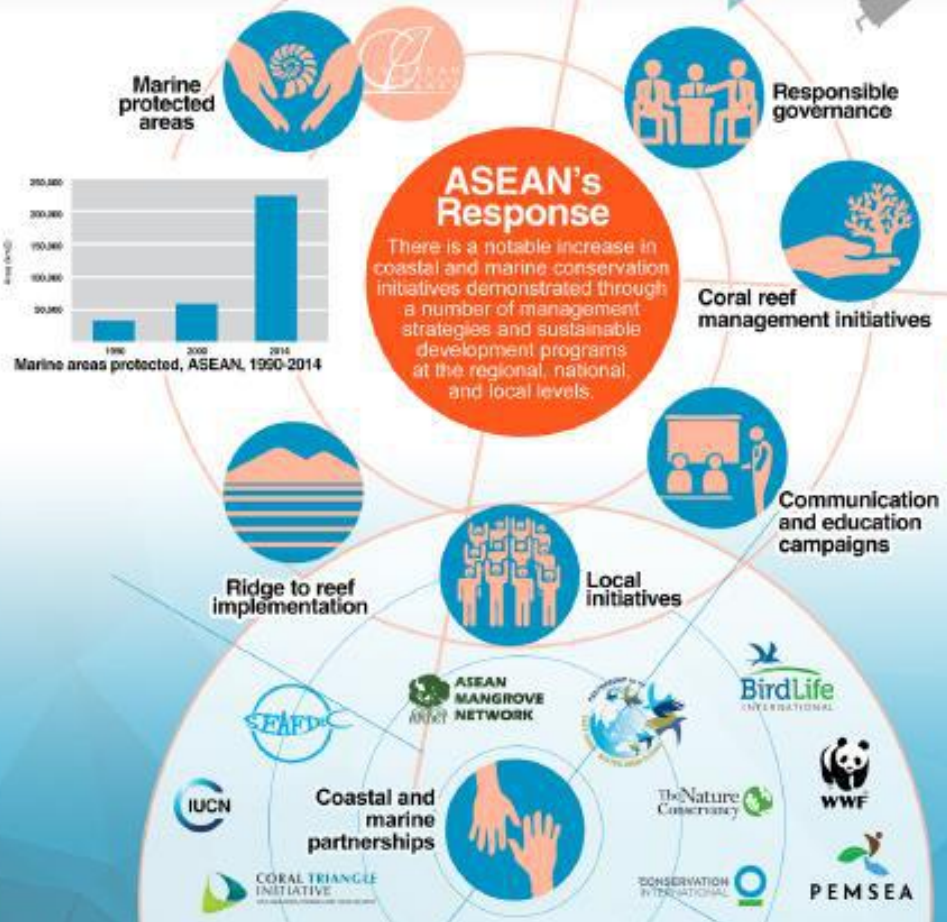
Fishing Down the Food Web

Source: Pauly et al, Science, 1998



Coastal and Marine Biodiversity

Healthy coasts, healthy ASEAN





2B Cross-cutting Concerns

- Demonstrate challenges in the areas of taxonomy, access and benefit-sharing, wildlife conservation, invasive alien species, climate change, expansion of cities, and economics and business
- Presents opportunities for cooperation within the region and with partners in the international community and ecosystems

Taxonomy

You cannot conserve what you do not know

A region known for its biodiversity richness, ASEAN is also the most vulnerable with most member states facing tremendous threats to their natural wealth. Identifying species before they go extinct is thus crucial to determining priorities in biodiversity conservation.

The extent of undiscovered species is high for all other taxa

1,361
identified
reptiles

3,258
identified
birds

585
identified
amphibians

56,120
identified
plants

1,037
identified
mammals

Efforts to
Strengthen
Taxonomy
in ASEAN

AP-BON
Asia Pacific Biodiversity Observation Network



Partnerships



Trainings



Knowledge
Management

Ways Forward



Assess the Global Taxonomy Initiative Regional Action Plan 2010–2015

Chart the future of taxonomy in a Regional Action Plan for Taxonomy 2017–2020



Survey taxonomy studies and research in ASEAN

Develop a communication, education, and public awareness plan for taxonomy in ASEAN



Make taxonomic information interoperable among databases in ASEAN Member States


Improve *ex situ* programs in the region



Access and Benefit-Sharing

Ensuring the fair and equitable sharing of benefits from the utilization of genetic resources

ABS refers to the agreement between user and provider in the access of genetic resources and how benefits are shared between them.

 **Prior and Informed Consent (PIC)** seeks permission from appropriate representatives and shares information on the purpose for accessing genetic resources and traditional knowledge.

 **Mutually Agreed Terms (MAT)** states monetary and non-monetary benefits in exchange for access as agreed between user and provider.

 **Traditional Knowledge** refers to knowledge of indigenous peoples and local communities that are rich sources of information for bio-product development.

 **Compliance** is observance of obligations to ensure sharing of benefits when genetic resources leave a provider.

Opportunities



Research and Development:
Advances in biotechnology



USD 323B
worth of
global market
products

**Potential Income
Generation:**
Creation of products
worth billions



**Development of
ABS Frameworks:**
More ASEAN Member
States are acceding to
the Nagoya Protocol and/or
developing national ABS policies.

Ways Forward



Raise public awareness
and increase stakeholders'
participation



Promote regional cooperation
and capacity building



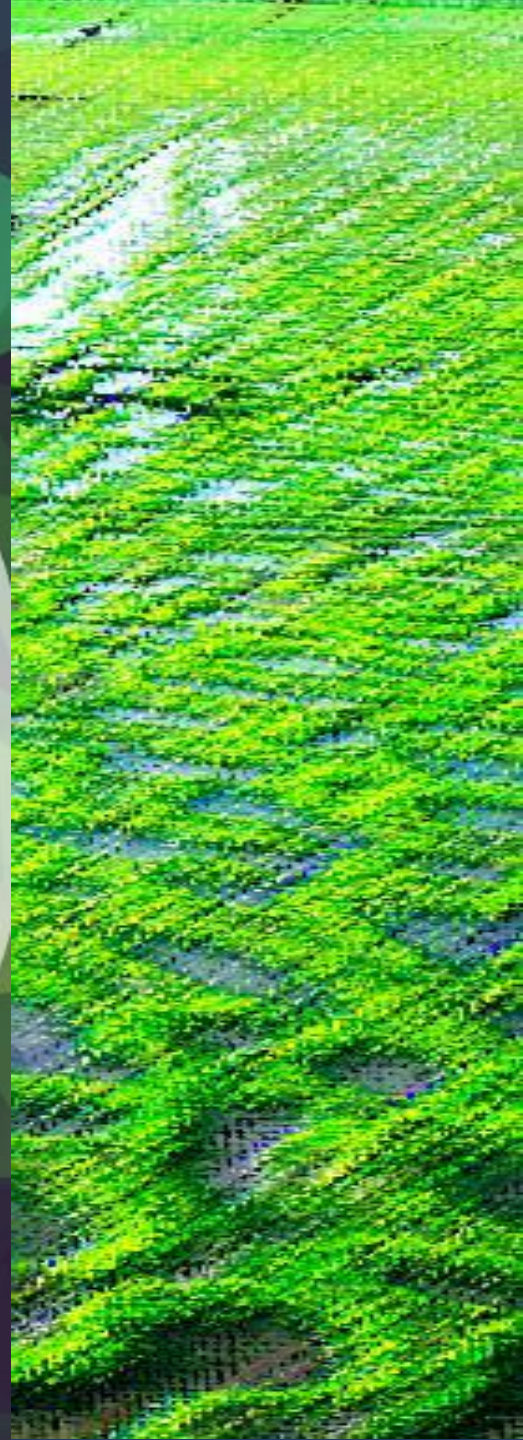
Implement legislation and
administrative or policy
measures on ABS



Protect genetic resources
from misappropriation
and misuse



Formulate national
regulatory and institutional
frameworks on ABS



Wildlife Conservation

Protecting ASEAN's natural heritage



ASEAN's Response

- Develop and implement wildlife conservation laws**
- Increase area and number and improve effective management of protected areas**
- Strengthen cooperation on law enforcement and illegal wildlife trade**
- Prepare endangered species action plans**
- Increase transboundary conservation measures**
- Increase research on species at risk**
- Improve communication, education, and public awareness campaigns**
- Develop breeding and captive propagation programs**

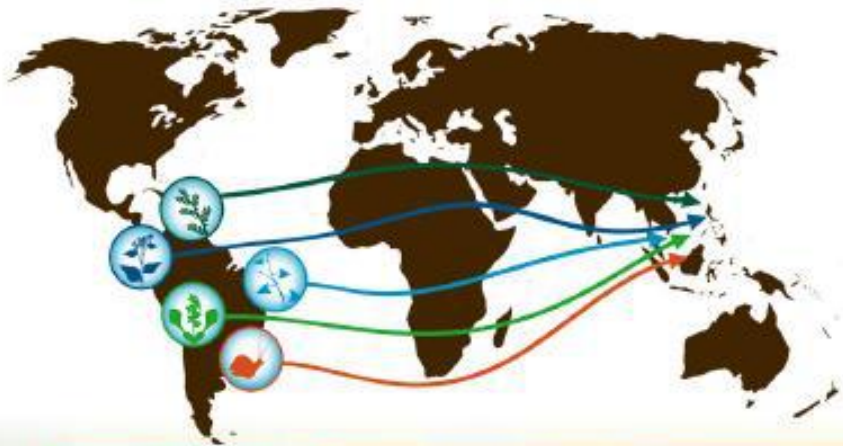
Allies in Wildlife Conservation



Invasive Alien Species: Keeping intruders out

 Water hyacinth (<i>Eichhornia crassipes</i>)	 Siam weed (<i>Chromolaena odorata</i>)	 Catclaw mimosa (<i>Mimosa pigra</i>)	 Mile-a-minute (<i>Miconia micrantha</i>)	 Golden apple snail (<i>Pomacea canaliculata</i>)
				

Top 5 Invasive Alien Species in the ASEAN Region



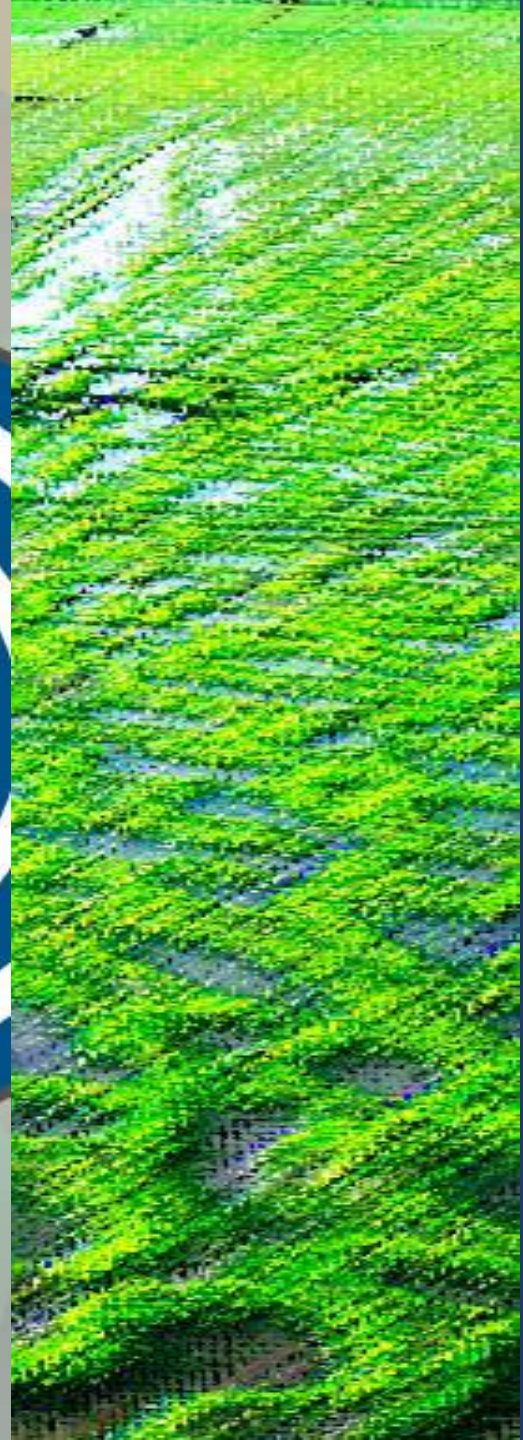
Common Pathways of IAS

- Flooding and other natural disasters
- Biological control
- Breeding and propagation
- Trade
- Escape from confinement
- Pathways
- Garden waste disposal
- Hitchhiker
- Horiculture
- Intentional release
- Landscape improvement
- Medical use
- Ornamental purposes
- People smuggling
- People sharing resources
- Research
- Smuggling

Impacts of IAS

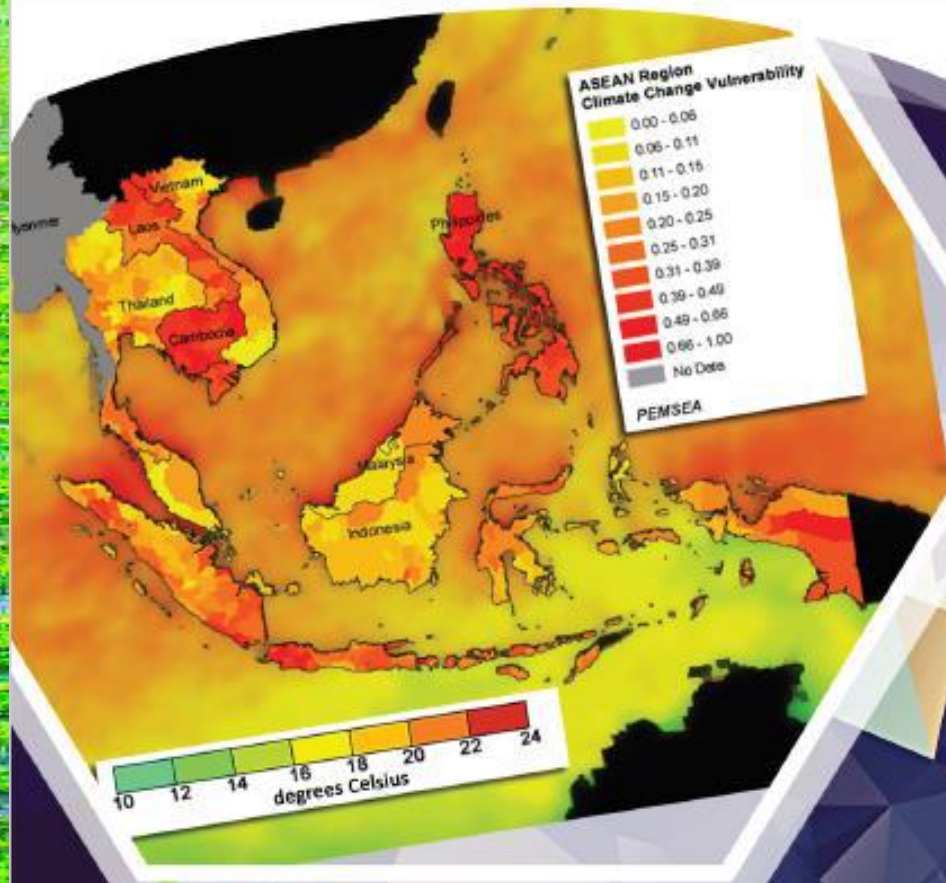
- Limit the availability of sunlight
- Compete for nutrients
- Invasive fishing activities and water transport
- Clog waterways
- Lower dissolved oxygen levels
- Heighten habitat loss
- Magnify costs of clean-up activities
- Provide cover for crocodiles
- Intensify species reduction
- Provide refuge for snakes
- Block river traffic
- Cause bushfires
- Cause fatalities due to leaf toxicity
- Displace indigenous forage/grass species
- Increase cost of fire management
- Harbor agricultural pests
- Cause forest fires
- Affect agricultural lands and fisheries
- Hinder growth of native plants
- Disturb aquatic life
- Require more funds for prevention, control, and elimination
- Magnify ecosystem pollution due to use of chemical pesticides
- Cause massive losses in rice production
- Pose danger and health hazards to humans

Ways Forward



Climate Change and Biodiversity

Seeking solutions to ensure resiliency



Ways Forward



Innovate to mitigate the negative impacts of climate change



Promote new knowledge, practices, and technologies to adapt to climate change



Provide local and national action plans complementing the ASEAN Socio-Cultural Community blueprint



Enhance projects and policies on Reducing Emissions from Deforestation and Forest Degradation and biodiversity conservation



Implement disaster risk reduction plan consistent with National Biodiversity Strategy and Action Plans



Global temperature increase of 0.4° to 2.6°C by 2055 and 0.3° to 4.8°C by 2090



100% of marine AHPs will be affected



100% of terrestrial AHPs are vulnerable to climate change



Industry and transportation increase carbon pollution levels



Altitudinal migration of forests, extinction of many species, and reduction in diversity of ecosystems



Distribution of plant and animal species shifts to higher altitude



Adverse impacts on terrestrial and coastal marine ecosystems, food production, human health, and livelihood, among others

Status and Trends

Cities and Biodiversity: Nature in tight spaces

Challenges

Many cities in the ASEAN region were established near biodiversity – rich habitats. Unregulated use of natural resources have depleted these habitats, and, thus, are now categorized as critical biodiversity habitats.

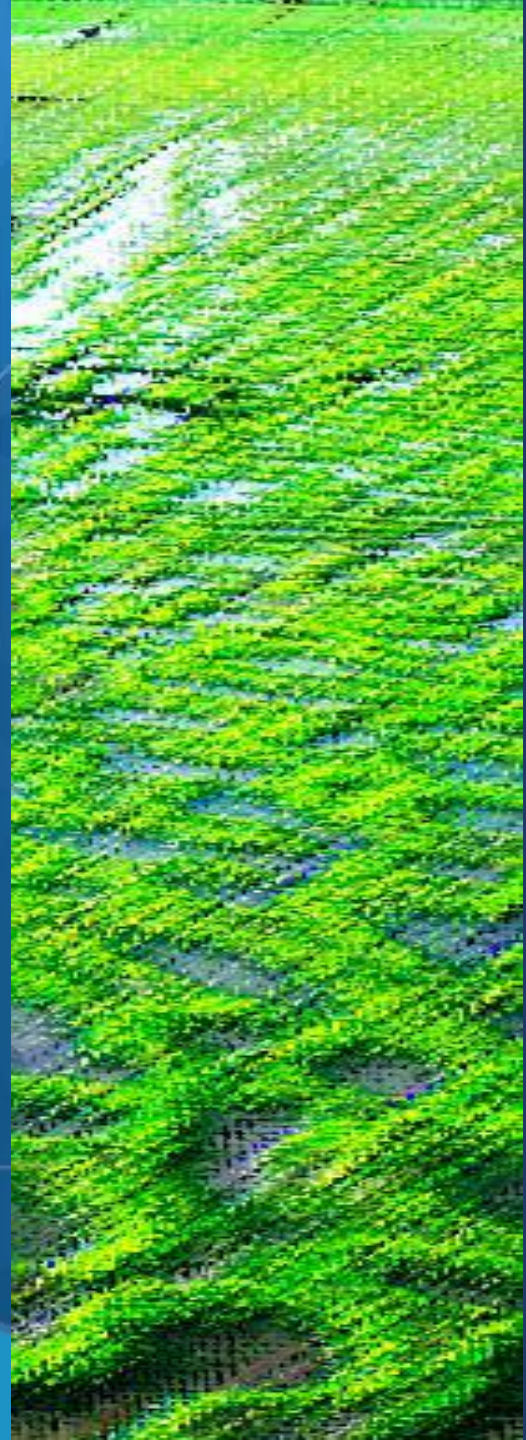
Rapid urban growth could lead to more land conversion.

Poor understanding of the benefits of having rich biodiversity in the city.

Environmental considerations, including biodiversity, are accorded a low priority compared to economic and industrial progress.



- ✓ Conserving small areas of forests, floodplains, estuaries, and coastlines protects species and strengthens ecosystems services.
- ✓ Maintaining biodiversity keeps cities cool.
- ✓ Nature areas provide habitats for species.
- ✓ Greening idle areas with urban farming helps supply food and employment, and promote appreciation of biodiversity.
- ✓ Green areas, such as parks, clean the air and calms the body and mind.



Valuing Biodiversity:

Mainstreaming biodiversity in economy and business

Biodiversity valuation tools

- ✓ The Economics of Ecosystems and Biodiversity (TEEB)
- ✓ National Capital Accounting (NCA)
- ✓ Payment for Ecosystem Services (PES)

Ways Forward

Lack of information of the economic value of biodiversity



Challenges

Insufficient awareness of the ecological and economic values of biodiversity in the business community



Lack of ASEAN-wide network of businesses with common biodiversity goals

Inadequate prioritization of business and biodiversity in national communication, education, and public awareness programs



Limited involvement of the business sector in biodiversity conservation



Educate consumers on the value of biodiversity.

Emphasize that biodiversity is everybody's business.

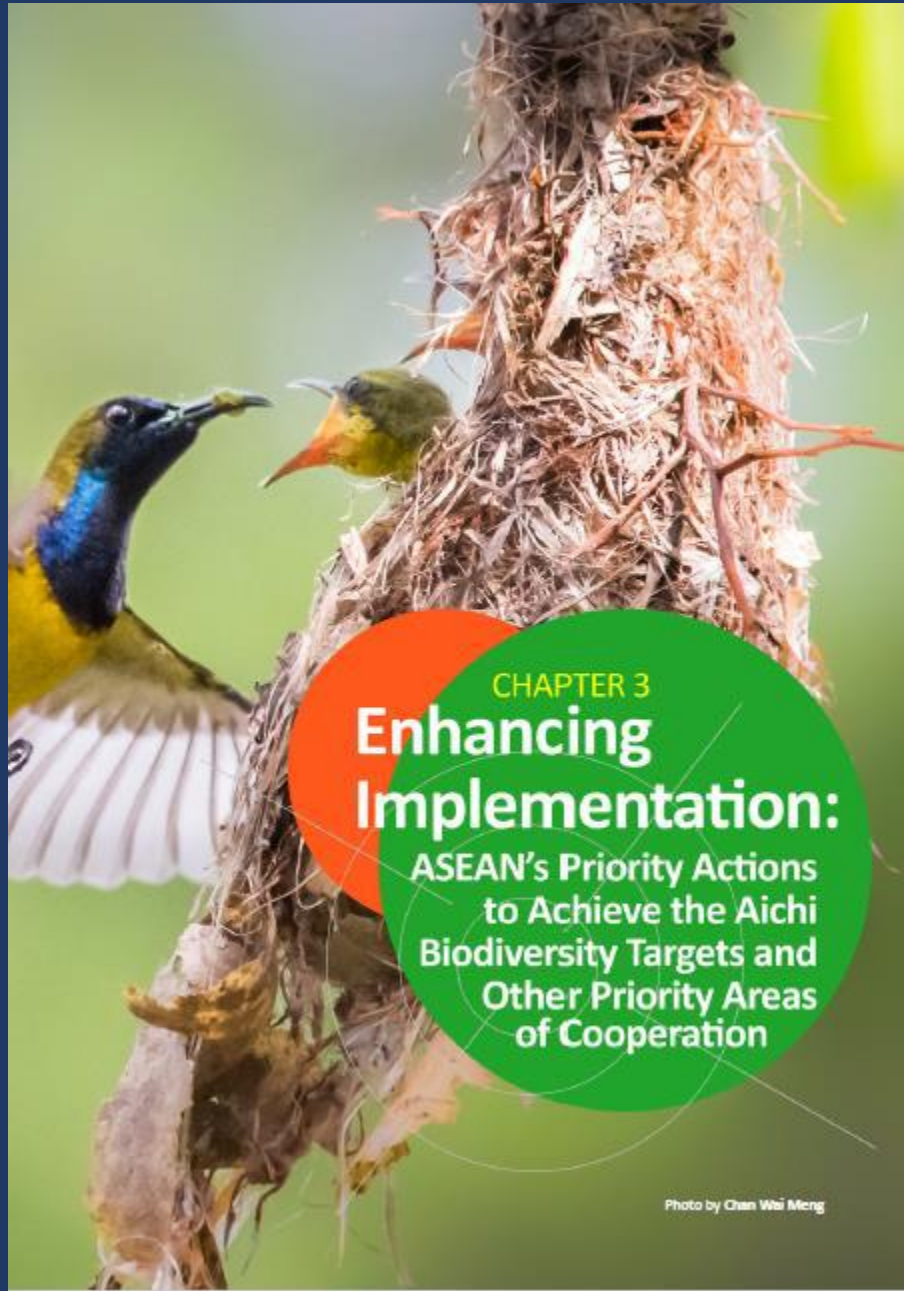


Mainstream biodiversity and sustainable development at all levels of governance.

Ensure that decision makers have access to scientifically credible information that accounts for the total value of ecosystem benefits.



Facilitate dialogues among relevant stakeholders on the benefits from biodiversity.



Programs and projects supported by various partners and donors with a total regional portfolio of around USD 50 million

- **ASEAN Heritage Parks and Protected Areas**
- **Biodiversity Information Management**
- **CEPA: Bridging the communication gap in biodiversity conservation**

ASEAN Heritage Parks and Protected Areas: Enhancing effective management



- THREATS**
- Encroachment
 - Illegal logging
 - Invasive Alien Species
 - Poaching
 - Mining



Ways Forward

Raise public awareness



Mobilize additional financial resources



Implement alternative livelihood opportunities



Seek active participation from indigenous peoples and local communities



Enhancing Implementation:

ASEAN's Priority Actions to Achieve the Aichi Biodiversity Targets and Other Priority Areas of Cooperation



Enhancing Implementation:

ASEAN's Priority Actions to Achieve the Aichi Biodiversity Targets and Other Priority Areas of Cooperation

Biodiversity Information Management: Cultivating a culture of information sharing



Clearing-House Mechanism (CHM)

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

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



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



Encourage AMS to support the ASEAN CHM

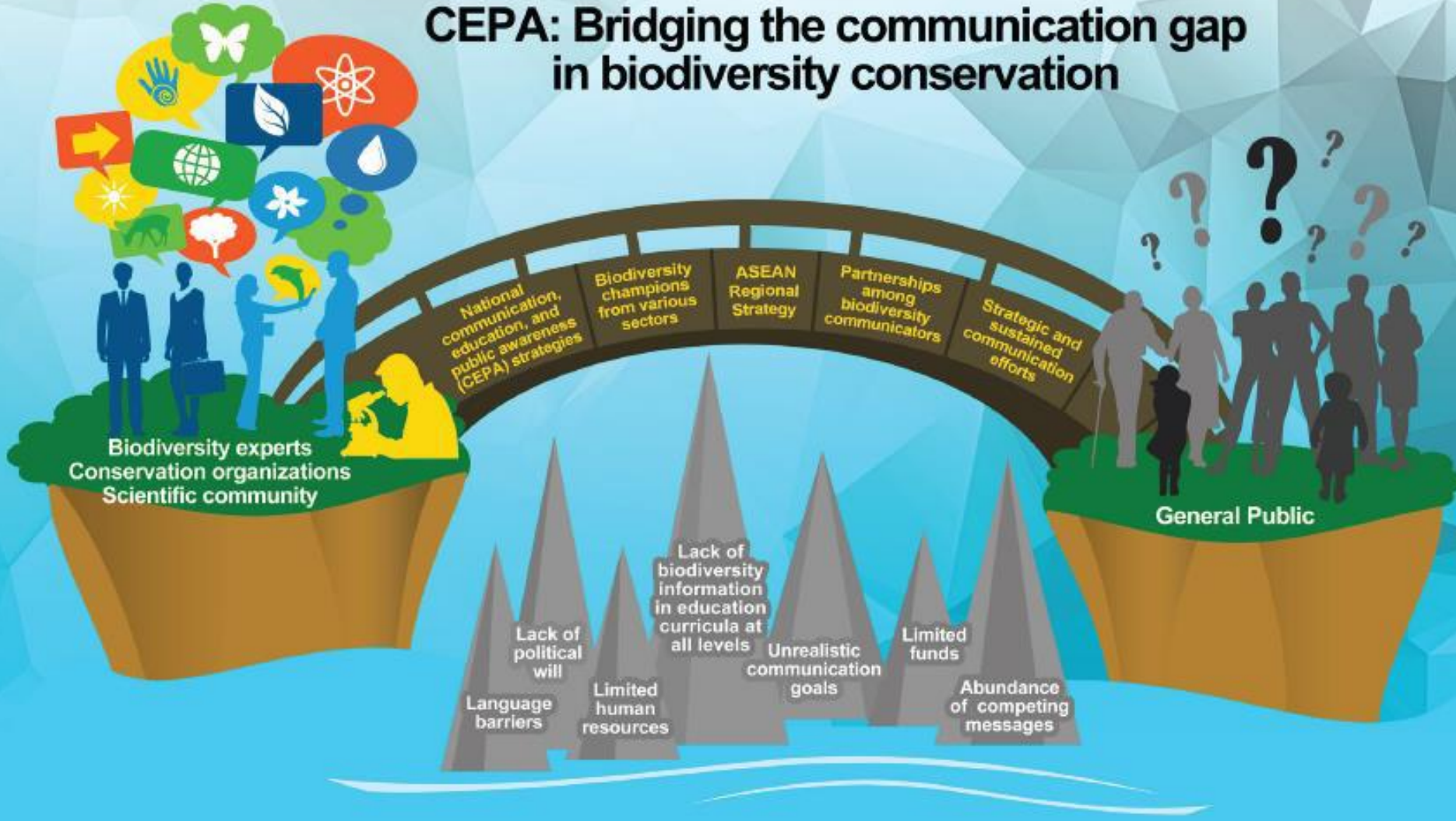


Contribute data and policies in global scientific discussions

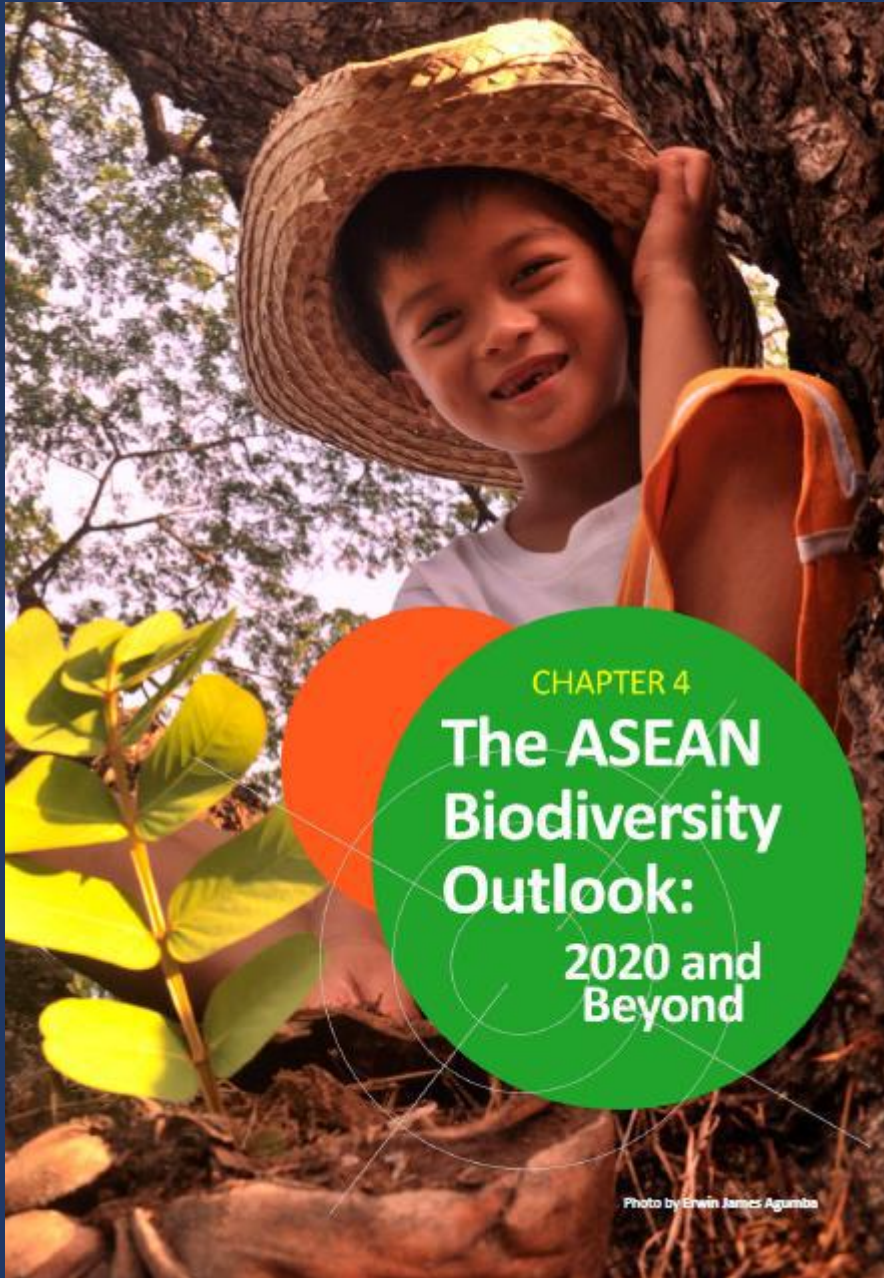


Pursue CHM content enhancement activities

CEPA: Bridging the communication gap in biodiversity conservation



Enhancing Implementation:
ASEAN's Priority Actions
To Achieve the Aichi
Biodiversity Targets and
Other Priority Areas
of Cooperation



- highlights ASEAN's priority actions and strategies beyond 2015.
- Alignments with the ASEAN Socio-Cultural Community Blueprint 2025 , the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets and the ASPEN
- summary of key actions and recommendations to accelerate efforts in the ASEAN region to achieve biodiversity targets by 2020 and beyond.

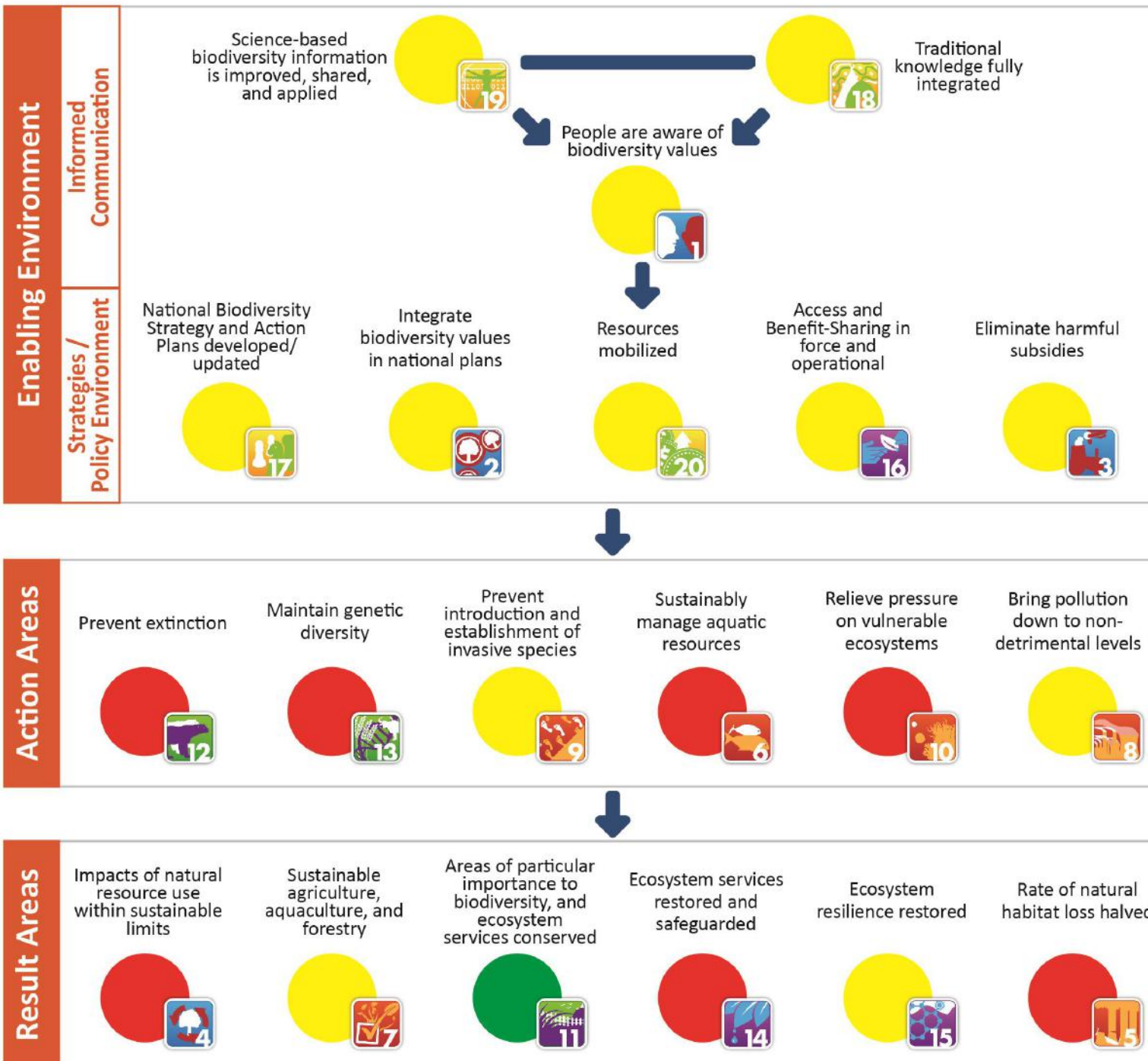
Aichi Targets Implementation Framework

Recommends a revised sequence by which the Aichi Biodiversity Targets may be implemented in the ASEAN region, achieving the five goals through a logical and prudent use of resources:

Establishing the enabling environment where informed communication contributes to strategy development and the policy environment

That facilitates the implementation of conservation actions as appropriate

Having these in place will facilitate the delivery of result areas



Key actions needed in ASEAN to achieve the Aichi Biodiversity Targets

GOAL A



Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

- Heighten awareness of biodiversity and institutionalize communication, education, and public awareness strategies through multi-sectoral approaches; engage more stakeholders and build their capacity, including mobilizing champions on biodiversity; and streamline CEPA activities among various sectoral agencies.
- Expedite the development of national and local policies and strategies that integrate biodiversity and poverty reduction.
- Review subsidies and policies harmful to biodiversity (such as in industrial forests, mining, and agriculture).

GOAL B



Reduce direct pressures on biodiversity and promote its sustainable use

- Significantly improve enforcement capacities and establish monitoring and reporting systems.
- Develop an ASEAN Forestry Master Plan, foster Green Economy, and establish ecological corridors.
- Develop an ASEAN-wide strategy on sustainable fishing practices and enhance national fisheries policies on gear and seasonal catch controls, conservation partnerships, and integrated land and sea use plans.
- Secure sustainability of small-scale fisheries to alleviate poverty and food security.
- Promote agro-ecological farming practices to increase food production and conserve agrobiodiversity.
- Accelerate CEPA campaigns for key stakeholders and the public to develop and adopt waste management practices (reduce, reuse, and recycle).
- Identify pathways of introduction, prevention, and eradication of invasive alien species.
- Develop appropriate policies, incentives, and penalty systems to decrease pressures on coral reefs, mangroves, and inland waters.

Key actions needed in ASEAN to achieve the Aichi Biodiversity Targets

GOAL C



To improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity

- Expand protected area networks, in particular on coastal and marine areas, and ensure effective protected area management.
- Enhance protected area management planning by updating and effectively implementing management plans, enhancing collaborative management, and incorporating climate actions.
- Accelerate updating of management plans towards the effective management of all AHP sites.
- Enhance protection of ecologically-representative and well-connected systems of protected areas, including transboundary management of protected areas.
- Implement a comprehensive and collaborative species conservation program that addresses wildlife trafficking at national, regional, and global scales.

GOAL D

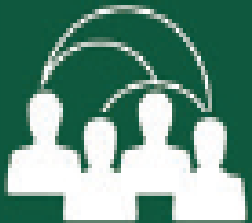


Enhance benefits from biodiversity and ecosystems services for all

- Undertake ecosystems restoration activities, including assessments and mappings, of areas with greater carbon sequestration value, especially mangroves.
- Enhance protection and restoration of ecosystems services.
- Enhance capacity building activities to assist AMS to enhance or develop and implement national legislative, policy, or administrative measures and institutional structures on access and benefit sharing.
- Foster regional dialogues to enhance the interface among biodiversity, health, and human well-being.

Key actions needed in ASEAN to achieve the Aichi Biodiversity Targets

GOAL E



Enhance implementation through participatory planning, knowledge management, and capacity building

- Strengthen partnerships at the regional level to support the implementation of Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets.
- Continue to recognize and document traditional knowledge and practices of indigenous and local communities for the conservation and sustainable use of biodiversity.
- Forge partnerships that promote biodiversity information management, provide training to increase capacity, and optimize the use of national Clearing-House Mechanisms as knowledge platforms.
- Strengthen resource mobilization efforts, and explore and implement innovative financing schemes to sustainably finance biodiversity initiatives.

A common understanding of biodiversity and the consequences of its loss

AMS with large geographic jurisdictions are key to achieving area-based Aichi Biodiversity Targets.

There is a need to ensure effective management of protected areas as well as establish functional protected area networks.

The regional conservation community has to expand beyond the usual conservation support groups

Promote a shared responsibility of the region's biodiversity

Ways forward

- **Provide decision makers with the scientific information necessary to make informed decisions about the management of critical natural resources.**
- **Create opportunities for dialogue between the scientific community, governments, private sector, and local resource users on the benefits from biodiversity and ecosystem services.**
- **Emphasize that biodiversity is everybody's business and everybody has a stake and role in biodiversity conservation.**
- **Educate consumers on the value of biodiversity as consumer demands play a major role in business operations and practices. Change consumer demand and behavior to create an impact on business operations.**

THANK YOU!

