

NATIONAL POLICY ON BIOLOGICAL DIVERSITY 2022-2030

MINISTRY OF NATURAL RESOURCES,
ENVIRONMENT AND CLIMATE CHANGE



NATIONAL
POLICY ON

BIOLOGICAL DIVERSITY

2022-2030



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NATIONAL POLICY ON

BIOLOGICAL DIVERSITY

2022-2030



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EXECUTIVE SUMMARY

Malaysia is a megadiverse country. On land, Malaysia's natural ecosystems consist of an immense variety of wild plants and animals including dipterocarp forests and montane forests, while its coastal and marine areas house important ecosystems such as mangrove forests and coral reefs. These natural ecosystems contain a diverse array of flora and fauna communities. There are an estimated 15,000 species of vascular plants in Malaysia, with about 8,300 species in Peninsular Malaysia and about 12,000 in Sabah and Sarawak. Fauna diversity includes 306 species of mammals, 742 species of birds, 654 species of amphibians and 506 species of reptiles, as well as 2,068 species of freshwater and marine fish. Malaysia's rich biodiversity constitutes an extraordinary natural capital that maintains its natural environment and the life-support systems that give us food, water, and numerous economic benefits.

The first National Policy on Biological Diversity was formulated in 1998. Following the introduction of Aichi Biodiversity Targets 2010-2020, the policy has been reviewed and introduced as National Policy on Biological Diversity 2016-2025. It also forms part of Malaysia's response to the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011-2020.

Since then, Malaysia has experienced rigorous development in terms of numerous housing and industrial areas, townships, and infrastructure. The country's transition to becoming a developed, high-income nation has exerted various pressures on its biodiversity, leaving many species vulnerable, with some even facing threats of extinction. Nearly half of the nation's plant diversity is facing various levels of threat. Other pressures that threaten Malaysia's biodiversity include habitat fragmentation, invasive alien species, pollution, poaching, increasing competition for land, and climate change.

Until today, there has been a general lack of awareness of the importance of biodiversity throughout the country, as well as significant knowledge gaps. There are also weaknesses in management capacities and issues of funding, both of which are crucial to ensuring that Malaysia's biodiversity is effectively conserved for its future generations. There is a need to integrate the global biodiversity agenda with Malaysia's current policy on biological diversity with the adoption of the Kunming-Montreal Global Biodiversity Framework, which was agreed upon by the 15th Conference of Parties to the Convention on Biological Diversity (CBD COP15) in December 2022.

The National Policy on Biological Diversity 2022–2030, through its 5 goals, 17 targets, and 61 actions, provides the direction and framework for Malaysia to conserve its biodiversity, promote its sustainable use, and ensure fair and equitable sharing of its benefits in the face of increasingly complex challenges now and in the future.



Deramakot Forest Reserve, Sabah

INTRODUCTION

OUR SHARED RESPONSIBILITY

The responsibility of conserving our national and natural treasures should shift away from an all-governmental approach and instead steer towards an inclusive, all-of-society approach.

Our natural ecosystem provides a multitude on provisions, regulation, support and cultural services to ensure that we receive the essential needs to substantially live and function in society. To ensure a long-lasting and continuous future that is sustainable, inclusive and equitable, we must safeguard our natural treasures. It is hence our shared responsibility to conserve and protect.

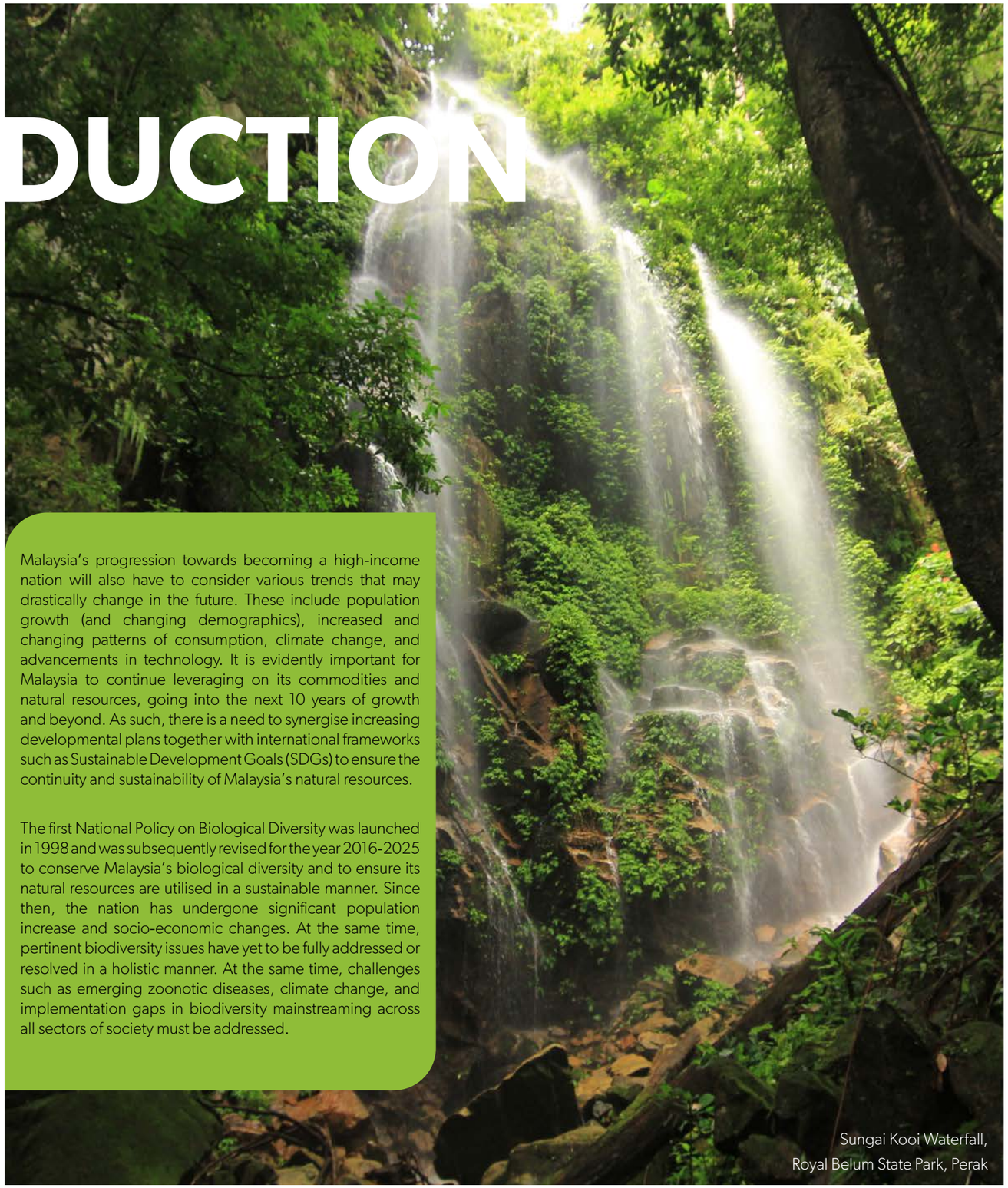
THE NEED FOR THIS POLICY

The Malaysian economy has come a long way since gaining independence. Heading into the 21st century, Malaysia has successfully diversified its economy from initially being agriculture and commodity-based, to one that hosts various robust sectors: manufacturing, service, and tourism among others.

The country is now focusing towards becoming a high-income nation backed by an advanced economy. The World Bank reported that Malaysia is expected to reach the high-income threshold sometime between 2020 and 2024. However, challenges remain for Malaysia to sustain this rapid growth and has stagnated in the middle-income status. Advancing towards a high-income nation will require extensive developments of various aspects such as (i) having well-developed institutions and state capability; (ii) a robust knowledge-based economy; (iii) high-quality human capital; and (iv) modern infrastructure.

Malaysia's progression towards becoming a high-income nation will also have to consider various trends that may drastically change in the future. These include population growth (and changing demographics), increased and changing patterns of consumption, climate change, and advancements in technology. It is evidently important for Malaysia to continue leveraging on its commodities and natural resources, going into the next 10 years of growth and beyond. As such, there is a need to synergise increasing developmental plans together with international frameworks such as Sustainable Development Goals (SDGs) to ensure the continuity and sustainability of Malaysia's natural resources.

The first National Policy on Biological Diversity was launched in 1998 and was subsequently revised for the year 2016-2025 to conserve Malaysia's biological diversity and to ensure its natural resources are utilised in a sustainable manner. Since then, the nation has undergone significant population increase and socio-economic changes. At the same time, pertinent biodiversity issues have yet to be fully addressed or resolved in a holistic manner. At the same time, challenges such as emerging zoonotic diseases, climate change, and implementation gaps in biodiversity mainstreaming across all sectors of society must be addressed.



Sungai Kooi Waterfall, Royal Belum State Park, Perak

Moving forward, the Policy will address present and emerging challenges with a revised framework and actions to sustainably and inclusively conserve Malaysia's biodiversity. The Policy will also form part of Malaysia's response to the Kunming-Montreal Global Biodiversity Framework. This framework replaces the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets.

The Framework is guided by a shared vision of "Living in Harmony with Nature by 2050". More specifically, the CBD has identified four long-term goals of the Kunming-Montreal Global Biodiversity Framework:

GOAL	ASPECTS
A	• Maintaining, enhancing, or restoring integrity, connectivity, and resilience of all ecosystems • Halting human-induced extinction of threatened species, reducing extinction rates, and restoring population of native wild species to healthy and resilient levels • Safeguarding genetic diversity of wild and domestic species
B	• Ensuring sustainable usage and management of biodiversity • Valuing, maintaining, enhancing, and restoring ecosystem services and functions
C	• Fair and equitable sharing of monetary and non-monetary benefits from utilisation of genetic resources, digital sequence information, and traditional knowledge with local and indigenous communities • Protection of traditional knowledge associated with genetic resources
D	• Ensuring adequate means to implement the Global Biodiversity Framework including financial resources, capacity building, technical and scientific cooperation, and access to and transfer of technology

BIODIVERSITY TREASURES OF MALAYSIA

Malaysia is recognised as one of the world's megadiverse countries. Malaysia is listed among the top 12 biodiversity rich countries in terms of species richness and endemism. This biological diversity spans through ecosystems, species, and genetic diversity.

TERRESTRIAL HABITATS

Approximately 54.58% of Malaysia's total land area remains forested which includes national parks, Stateland Forest (SLF), Permanent Reserved Forest (PRF), and wildlife sanctuaries. These forested habitats are home to a diverse species of plants, wild animals, and micro-organisms resulting in a complex structure of a co-existence. One of the many main genera found in this forest type are Dryobalanops, Hopea, and Shorea, which can sometimes tower over 80m. The world record for dipterocarps belongs to *Shorea faguetiana*; the latest record in 2019 was at 100.7 m and was found in the Danum Valley Conservation Area in Sabah. Previous records ranged between 88m to 97m and were all documented in important conservation areas in Sabah i.e. Maliau Basin and Tawau Hills National Park.



Merbau
Intsia palembanica

The hill dipterocarp, upper dipterocarp, and montane forest also comprise of diverse species where high levels of endemism are found. The montane forest ecosystem in particular have a higher level of endemism in invertebrate fauna and herbaceous plants (e.g., orchids, begonias, mosses, etc.) Fraser's Hill for example is rich and diverse and is known as one of the three localities worldwide to harbour an ancient and rare trig oak (*Trigonobalanops verticillata*). It is locally known as the mempening babi and is a living fossil of ecological and taxonomic importance. To date, there are an estimated 15,000 species of vascular plants in Malaysia, with about 8,300 species in Peninsular Malaysia, and about 12,000 in Sabah and Sarawak. In Sabah, the iconic Mount Kinabalu on the other hand has recorded plant species richness to be over 5,000 species, with 40% of species being endemic.

Distinctive from the climax forests, the edaphic forests also have their own unique characteristics. They are found where there are unique factors such as water content, acidity, aeration, and availability of nutrients that determines the type of edaphic forest. These types of forests are typically found in limestone hills, heath, peat swamp, mangrove, beach vegetation, brackish-water, and fresh-water swamp. Despite the differences from dipterocarp forests, edaphic forests are also high in biodiversity, and often contain unique and high level of endemism due to its isolative habitats and evolutionary pressures.

Limestone karsts also harbour unique biodiversity where 60% of the 73 flora species recorded in Mulu karsts in Sarawak could not be found in any other forest types. Invertebrates on the other hand make up the majority of limestone fauna where a study in karst caves in Peninsular Malaysia have noted 6% of 53 invertebrate's species to be newly discovered. Additionally, bats are another prominent limestone fauna as they prefer limestone as roosting habitats. Mulu karsts have one of the region's richest bat faunas, comprising of 28 species.

To date, there are an estimated 15,000 species of vascular plants in Malaysia, with about 8,300 species in Peninsular Malaysia, and about 12,000 in Sabah and Sarawak

Freshwater swamps and peatlands are crucial habitats for a variety of plants and animals. Malaysia has some of the most extensive tropical peatlands in the world, covering approximately 2.4 million ha, mainly consisting of peat swamp forest. Peatlands are a vulnerable category of wetland characterised by deep layers of peat soil and waters so acidic that many of the plants and animals found in them do not occur in the other tropical forests. Our peatlands play a critical role in preserving water supply, regulating and reducing flood damage, providing fish, timber, and other resources for local communities, and storing large amounts of carbon within peat. Freshwater swamps such as the Tasik Bera in Pahang (Malaysia's first Ramsar site), Loagan Bunut in Sarawak, Ulu Sedili in Johor and Setiu in Terengganu host a plethora of unique flora and fauna.

MARINE & COASTAL HABITATS

Malaysia has one of the largest continental shelf areas in the tropics. In comparison with other continental areas, this region is rich in biodiversity, and considered to contain the greatest species diversity of marine life in the world.

Malaysia has a coastline of approximately 4,800 km². Marine and coastal biodiversity habitats comprise of coral reefs, seagrass beds, mud flats, as well as coastal hill forests and mangrove forests. It is estimated that the coral reefs in Malaysia ranges about 4,006 km² with an average coral cover of 41.3%. With the extensive blanketing of coral reefs, the habitat then provides habitat support for at least 700 species of fishes. In Malaysia, Marine Protected Areas (MPA) are coastal and sea zones that have been legislated and regulated to manage and protect marine natural resources and biodiversity where a total of 53 MPAs have been gazetted.



Source: Sabah Tourism
Tun Sakaran Marine Park in Sipadan, Malaysia gazetted as a Marine Protected Area

It is estimated that the coral reefs in Malaysia ranges about 4,006 km² with an average coral cover of 41.3%

Malaysia has approximately 641,886 ha of mangrove forest where Peninsular Malaysia accounts for 106,554 ha for both the east and west coast, while Sabah and Sarawak amounts to an estimate of 553,312 ha of mangrove areas. In Sabah, mangrove forests cover approximately 73% of its 1,800 km coastline, covering more than other states in Malaysia. Malaysia has about 14 species of seagrasses from a total recorded of 20 species in the Southeast Asia. There are about 7 dominant genera and considered as the most highly diverse seagrass flora in the world. Seagrass forms dense beds which cover large areas of coastal waters and perform a wide spectrum of biological and physical functions, serving as habitat and nursery areas for fish, invertebrates, turtles, and dugongs.

BIODIVERSITY TREASURES OF MALAYSIA

The nation hosts an array of species diversity where approximately 361 species of mammals are known

FLORA AND FAUNA DIVERSITY

The flora and fauna communities in Malaysia are greatly diverse due to the numerous types of terrestrial and marine habitats. The nation hosts an array of species diversity where approximately 361 species of mammals are known. Peninsular Malaysia boasts three big cats: the Malayan tiger, the Indochinese leopard, and the clouded leopard. Other mammals such as the orangutan harbour approximately 11,300 in population found in East Malaysia.







Source: Department of Wildlife and National Parks Peninsular Malaysia & Pertubuhan Pelindung Alam Malaysia
The Malayan tiger, melanistic Indochinese leopard and clouded leopard are all found in Malaysia; however population is on a downward trend due to habitat loss and poaching.



As for bird diversity, 843 species of birds have been recorded in the whole of Malaysia. The Malayan whistling-thrush is one of the many bird species endemic to the mountains in Peninsular Malaysia, while Bornean forests boast a high level of endemism with 38 species found nowhere else. Examples of endemic bird species found within Bornean rainforests are the white-crowned shamas and the black-browled babblers. Ten species of hornbills can be found in Malaysia, with the great hornbill being the largest.

While herpetofauna records have shown 250 species of amphibians and 567 species of reptiles unequally distributed across Peninsular Malaysia, Sabah, and Sarawak, with new discoveries being consistently added to the growing list of species.

Source: Paul Jones
Great Hornbill perched in a tree in Tasik Kenyir, Terengganu

BIODIVERSITY TREASURES OF MALAYSIA

Out of the documented 150 species of snakes in Malaysia, 16 of the land snakes are venomous. Notable venomous snakes are the Malayan pit viper and king cobras.

A total of 2,068 species of freshwater and marine fishes belonging to 704 genera and 186 families have been recorded. Of these, 470 species are found in freshwater habitats, 81 in brackish water, and 1,400 in marine habitats. Coral reefs are the richest habitat with 925 species of fish recorded therein. 27 species of marine mammals including the Indo-Pacific finless porpoise, Indo-Pacific humpback dolphin, Irrawaddy dolphin, Bryde's whale, and the dugong are also known to occur in the Malaysian waters. Furthermore, three species of marine turtles are known to nest in Malaysia: the Green, Hawksbill, and Olive ridley turtles.

As for Malaysia's floral community, Malaysia's rainforests are believed to be at least 130 million years old harbouring approximately 8,500 species of vascular plants in Peninsular and 12,000 in the East of Malaysia. These rainforests host one of the largest flowers in the world, the genus Rafflesia.



Largest in Malaysia, the Rafflesia keithii is found endemic to Sabah.

THE CALL FOR BIODIVERSITY CONSERVATION

Malaysia's biodiversity provides substantial ecological services that allow us to experience and marvel at natural environments, as well as having direct access to clean air and water. Plants, animals, and microorganisms all provide food, medicine, and other beneficial products that are essential to our livelihood. These services all demonstrate that biodiversity is important to help sustain our economy one way or the other.



REGULATING SERVICES

Biodiversity and our ecosystem of landscapes, plants, and animals provide important ecological services by acting as regulators. This includes regulating the quality of air that we breathe through the sequestration of carbon. Landscapes such as rainforests, mangroves, and the ocean regulate global climate by storing and sequestering greenhouse gasses as well as removing pollutants from the atmosphere.

Landscape ecosystems also regulate extreme weather events and natural disasters through buffer systems seen in mangroves, coastal peat swamps, seagrass beds, and coral reefs that prevents further coastline damages. Rainforests moderate flooding through acting as a water catchment where water is retained during heavy rainfall. This act also helps prevent further soil erosion and damages to residential areas, public amenities and such in nearby villages or cities upon the event of flooding.



SUPPORTING SERVICES

Ecological landscapes are significant in supporting the diversity of animals and plants. The variety of biological organisms in ecosystems helps to stabilise the environment, providing human societies with a wide range of essential and basic amenities such as habitable environments, building materials, water supply, flood mitigation and productive soils as well as recreational opportunities.

Ecosystems also provide and support living habitats for animals and plants to thrive as well as the maintenance of diversity. This creates biodiversity hotspots that are significant and rich in species. These hotspots are found across varying landscapes globally and support nearly 60% of the world's plant, bird, mammal, reptile, and amphibian species.

The Danum Valley Conservation Area in Sabah for example, is a world-renowned biodiversity hotspot and a supporting landscape to the Bornean orangutans, pygmy elephants, sun bears, hornbills, and myriad of other iconic endemic species whom all work together to perform its natural ecological function.

The Millennium Ecosystem Assessment defined four categories of ecosystem services that provides these essential needs, each underpinned by biodiversity. Hence, signifying the importance of conserving and protecting our biodiversity.



PROVISIONING SERVICES

Biodiversity is an important component of agriculture. Besides providing us with main sources of food such as plants, animals and fish, biodiversity also provides raw materials for goods such as cotton and wool; timber for construction materials and economic trade; traditional herbs for medicinal purposes; and materials deriving from plants and animal biomass for biofuel.

Fauna biodiversity is essential for the development of fruits, vegetables, and seeds as seen through pollination by wild animals. Many species of mammals, insects, birds, and bats are pollinators and dispersal agents of fruits and other crops. Frugivorous bats like flying foxes for example are important pollinators in ensuring the successful production of durians which is an essential economic drive for Malaysia. Livestock species and breeds are also important in the provisioning services. The roles livestock play in provisioning services are its unique ability to convert non-human feed into products suited for human consumption and other products such as organic waste that is needed for composting for crops. Livestock ability to respond to fluctuation in resource availability and climate also plays an essential role in ensuring the nation's food security and eradication of poverty. Products such as rice is an example where livestock (i.e., cattle) is utilised for its supporting role in the production of manure for organic fertilisers.

Malaysia's fisheries industry on the other hand has grown significantly over the last two decades. Marine catches have been steadily rising from about 800,000 tonnes in 1980 to over 1.48 million tonnes in 2013. Mangrove forests and seagrass beds serve as feeding and nursery grounds for fisheries, as well as being the habitats of several of our important commercial fishes and shrimps.



CULTURAL SERVICES

Biodiversity provides a sense of cultural identity to the people living in and residing nearby ecological landscapes. These cultural identities are significantly linked to the natural heritage, traditional knowledge, traditional customs, and spirituality of the indigenous communities. The Penan in Sarawak have a profound affinity with the forest as the forest plays a central role in their lives by providing their staple diet comprising of lekak (edible palm-leaf bud), uvud (young sago plants), and bearded pigs (Sus barbatus). The Batek semi-nomads in Kelantan have a cosmological sense and social principles towards the forest they live in. Known as bateq hep among themselves, meaning 'forest people', they highly regard forests as their true home and living within them is a natural order.

Ecological landscapes not only provide a sense of cultural identity to indigenous communities but to urban dwellers too. Urban forests such as the Shah Alam Community Forest ecologically connects to Bukit Cerakah Forest Reserve provide local communities to partake in nature recreational activities for physical, mental, and spiritual benefits. The Shah Alam Community Forest Society often highlight the forests' ecological benefits through organising programmes for its communities.

Biodiversity plays an important role in tourism. Tourism is the second highest foreign currency earner for the nation and around 26.10 million tourists visited Malaysia in 2019, which amounted to RM86.1 billion in receipts. Malaysia, with its outstanding biodiversity and scenic natural environment has been successfully promoted as an ecotourism and nature-oriented tourism destination in recent years. For example, recreational diving is a high value form of tourism that attracts tourists from all over the world. This type of tourism depends on the diversity of coral reefs and quality of the environment. Sipadan, Layang-Layang, and the oceanic islands in the South China Sea are considered to be among the world's best diving sites. Mulu National Park and Kinabalu National Park are UNESCO World Heritage sites with biodiversity of global significance. These sites and many others help to drive Malaysia's tourism industry.



THE CHALLENGE BEFORE US

Economic trends have shifted the way Malaysia utilises its natural resources. The country's ongoing transition to become a high-income and developed nation with the need to uplift the quality of life have exerted various pressures onto our biodiversity.

Additionally, pressures from climate change has also been increasingly observed. These threats to biodiversity leave many species vulnerable and some to the brink of extinction. While the impact to biodiversity may be apparent particularly in species reduction and loss of habitat, the cascading repercussions from such will be felt by all of society in areas where biodiversity plays an indirect and direct role.



DEMOGRAPHIC CHANGES

POPULATION GROWTH

Population growth remains the leading driver of biodiversity loss globally. Malaysia's population has increased by approximately 4 million since 2010, and is expected to reach 38 million by 2030 and 41.5 million by 2040. This growth is expected to exert pressures on biodiversity particularly on habitat and species loss due to land-use change pressures. An additional six million people in the country will require substantial developments to be made:

- Residential infrastructure will have to be significantly increased.
- Increasing urbanisation rates means that more sub-urban zones will eventually transform into fully urbanised areas and leading to the formation of new towns and cities. These will increase land use pressures, especially for the east coast states in Peninsular Malaysia (e.g., Pahang, Terengganu, Kelantan, East Johor), as well as the other districts in Sabah and Sarawak besides major cities like Kota Kinabalu and Kuching.
- Linear infrastructure will also increase with population growth. More roads and highways will be required to improve connectivity between rural and urban areas. In certain circumstances, new roads and highways may cut through forested areas, which increases habitat fragmentation pressures. If not planned responsibly, new roads and highways will increase wildlife mortality rates and result in increased human-wildlife conflicts.

FOOD CONSUMPTION DEMAND

Food consumption in Malaysia is also expected increase in line with population growth. Rice will remain the staple source of carbohydrate intake, with projections that consumption will surpass 3 million metric tons (MT) by 2030. Gaps in demands will be satisfied through rice imports since there will be no more expansion of paddy areas throughout the country. This generally benefits conservation efforts; however, there are concerns that more water resources and reservoirs will be required to enhance production levels.

Malaysia's poultry consumption is projected to increase in the next ten years, albeit at slower rates, with projections estimating that consumption will surpass 2 million MT by 2030. Fortunately, the poultry industry has been consistently self-sufficient in the past decades to meet domestic demands. However, there are concerns of the impacts of the poultry industry towards greenhouse gas emissions as well as being a pollution source of rivers.

Malaysia's beef consumption is also projected to increase in the coming decade and may surpass 300,000 MT by 2030. However, the country's production and self-sufficiency levels remain below par due to high investment costs, inadequate land for grazing and sustaining populations, and low supply of nutritious feeds locally. As such, there will be growing needs to enhance beef production to meet domestic demands to reduce import costs, notably through increasing grazing grounds. This will increase land use pressures as the country does not have sufficient pastures for cattle grazing. This will conflict conservation efforts, especially if proposed areas encompass intact forests. Furthermore, the beef industry is also a leading emitter of greenhouse gases. Enhancing the industry may potentially increase greenhouse gas emissions and exacerbate climate change impacts in the country.



Maliau Basin Conservation Area, Sabah

With the increasing need for production and consumption of beef, poultry, and agricultural crops, ultimately this will lead to increasing land-use change pressures, which may then lead to further habitat fragmentation, habitat loss and in turn, species loss.

WATER CONSUMPTION

Population growth will undoubtedly drive higher water consumption levels in the coming decade. As such, the need to ensure water security will be placed as a high priority, especially as urban centres and residential communities continue to grow. As water extraction and storage activities continues to increase, the impacts of such activities on biodiversity, especially freshwater biodiversity, must be carefully monitored and managed.

Intensive river and groundwater extraction will eventually alter flow regimes over time. This will subsequently affect water quality and biodiversity if left unchecked. Unprecedented alterations to flow regimes will alter the concentration of nutrients and pollutants in rivers, whereby reduced peak flows may affect in-stream habitats and sediment transport. In turn, this may affect the composition, abundance, and diversity of freshwater biological communities.

There may also be a possibility of more dam reservoirs being established in the future to enhance water security. While undoubtedly important, establishing new reservoirs will further complicate terrestrial conservation. Most of the major lakes and dams in Peninsular Malaysia have already impounded substantial forested landscapes in the past. Recent dam projects such as the Bakun dam have been controversial as it would result the impoundment of large areas of forests, some of which are also indigenous community lands.

ENERGY USAGE

Energy consumption is expected to continually increase in the coming decade to cater for an additional six million people. Ensuring sufficient energy supply to new and expanding city centres, as well as increased households, will undoubtedly require more power plants to be established. Conventional coal-fired power plants will increase the demand for coal extraction, thus increasing pressures from mining activities on sensitive habitats and landscapes. Furthermore, additional power plants will also result in increased greenhouse gas emissions, which will exacerbate climate change impacts towards Malaysia's biodiversity.

More solar plants / farms may be established to meet the country's commitments to lower greenhouse gas emissions. However, solar farms require sufficient land in order to generate the required energy levels for distribution. This may impose more land use pressures on forested landscapes. At the same time, the need for more energy reserves may lead to more hydropower dams to be proposed. This will lead to increased land use pressures in order to prepare adequate catchment space to generate hydropower. Although such projects are in the nation's best interest, these large-scale projects have significant impacts towards biodiversity conservation as large areas of forest will be loss during the impoundment of the dam, which only increases the loss of rare, endangered, and threatened species.

CLIMATE CHANGE

Climate change is a growing global threat not only to biodiversity and ecosystems but ultimately to all of society in every region of the world. These threats pose severe impacts to livelihoods through increasing natural disasters, drought, increasing temperatures, increasing sea level rise, erosion of shore lines, reduced crop yields, coral reef bleaching, decreased water availability, increasing incidences of diseases, and many more. There is a need to recognise the potential environmental impacts caused by land-based climate mitigation approaches.

The Intergovernmental Panel on Climate Change (IPCC) has released a sixth report confirming that human activities as one of the major causes of climate change. Burning of fossil fuels such as coal, oil, wood, and natural gas during the pre-industrialised years have been responsible for the rise in temperature in which has been increased by 1.1 °C since the 19th century, and will continue to increase if emissions are not controlled. Global sea level has also increased by an estimated of 20 cm rise, unfortunately probing further crumbling and melting of ice sheets in Antarctica.

In Malaysia, the effects of climate change are also expected to intensify. Climate change projections in Malaysia show an increasing rise in temperature and increasing rainfall towards the end of the 21st century. Projected rise in temperature may impact rice production in Malaysia, estimating a yearly economic loss of RM162.53 million with a 2°C increase in temperature. Climate change is also expected to aggravate high flow in watershed rainforests specifically in Kelantan, Terengganu and Pahang during the Northeast monsoon. Shortage of water flow into Klang Valley from watershed rainforests during the Southwest monsoon between 2025 and 2050 are also to be expected. With the increased water flow, affected States are expected to face flooding, structural damages, landslides and public health issues. Subsequently, with reduced water flow, water resources become scarce which leads to public health issues, and industrial and manufacturing halts that depends on water.

Climate change is foreseen to affect all aspects of our lives and Malaysia is no exception. Acknowledgement of climate change needs to be mainstreamed across all sectors, while mitigation and adaptation measures needs to be seriously considered and implemented to alleviate these disastrous impacts.

THE CHALLENGE BEFORE US



EMERGING ISSUE

MINERAL EXTRACTION

Mineral extraction will foreseeably increase in the next decade to supplement the construction and industrial sectors. Furthermore, the mineral industry is also expected to undergo extensive developments under the new Mineral Industry Transformation Programme. The phase (2021-2023) will see major revisions to existing legislations and governing institutions on mineral resources, as well as intensive mapping of key mineral resources areas. The second phase (2024-2026) entails strengthening value chain development and strategic partnerships with investors from both foreign and domestic relations. The final phase (2027-2030) intends to complete the development the entire mineral industry supply and value chain.

Exploration and exploitation of mineral reserves will have to be responsibly planned to ensure existing protected areas and sensitive habitats are not encroached and subsequently degraded. Future mining and extraction of mineral resources from the Mineral Industry Transformation Programme will impose pressures towards the Malaysia's environment and biodiversity resources if it is not managed responsibly.

For example, while limestone is a necessary resource for cement, various outcrops have been studied to harbour rare and endemic flora and fauna. Additionally, many gold and precious deposits are found within key forest habitats including Permanent Reserved Forest (PRF) and protected areas in the Central Forest Spine. Silica sand, as well as sand mining will also increase to supplement the construction industry. These activities will have significant impacts towards river morphology, as well as sensitive freshwater and wetland ecosystems.

ZOONOTIC DISEASES

Zoonotic diseases are infectious diseases contracted by humans which are caused by pathogens transmitted between humans and animals. The transmission of harmful pathogens from animals have resulted humans in health issues ranging from smallpox, tuberculosis, Ebola, severe acute respiratory syndrome (SARS), and very recently, the COVID-19 pandemic. Human impacts such as land-use changes from deforestation, agricultural conversion and the increasing illegal wildlife trade were noted to result in the emergence of zoonotic viruses where land-use change increases contact between humans and a pool of diverse pathogens. Livestock and the wildlife trade also have shown possibility of pathogen transmission as well. The COVID-19 pandemic has certainly brought better awareness on the need for better land-use planning and conserving our natural habitats to minimise the potential emergence of more zoonotic diseases.

INVASIVE ALIEN SPECIES

Invasive alien species (IAS) are animals, plants, pathogens, and various other organisms that are not native to region's ecosystem. Having IAS exposed in its non-native environment can cause economic and environmental harm, which may then affect human health as well. IAS prey upon, or compete with native species, thus modifying the natural ecosystem. This leads to eventual extinction of native species. For example, the Kariba weed (Salvinia molesta), is a floating aquatic fern, native to south-eastern Brazil is now found in many of our aquatic habitats such as lakes, rivers and paddy fields can greatly alter aquatic ecosystems.

As the mature plant entwines and grow themselves into a thick, floating mat on top of the water surface, oxygen and light are blocked from the water preventing native plants from thriving. This leads to over-competition with native plants which reduces species diversity of natives as the population decreases. The rapid spread of this pest threatens cultivated aquatic crops, and it can clog irrigation as well as drinking water lines.

POLLUTION

Pollution is a harmful and negative event that takes place from the introduction of harmful contaminants into the natural environment. Pollution can impact the quality of the air, water, soil, and in many other environments. This can ultimately result in negative impacts such as reduced productivity of agricultural crops due to increased plant susceptibility to diseases that is caused by toxic and hazardous wastes from the industrialisation sector. These toxic substances may also affect the aquatic environment, damaging natural ecosystem as well as reduction in aquatic species upon intentional or non-intentional spilling of substances. The industrialisation and agro-commodity sector also contribute towards the air pollution issue in Malaysia due to fossil fuel combustion and transboundary haze respectively.

Plastic waste pollution is also another issue in Malaysia where mismanagement of waste threatens terrestrial and marine ecosystem, as well as human health. The plastic manufacturing industry in Malaysia has one of the highest growth rates of all industries since 2000, and is globally one of the largest plastic productions whereby the nation has seen producing more than 0.94 million tonnes of mismanaged plastic per year since 2018. Due to the increasing number of plastic productions in Malaysia, the waste management systems are presently inadequate, thus leaning towards solutions such as domestic burning and disposals at landfills.

With a rapidly increasing population and increasing usage of plastics, current landfills sites are close to their maximum capacity which prompts for more land-use changes in establishing more landfill areas. Land scarcity in Malaysia is unfortunately discernible which may lead industry players to take unsustainable routes such as plastic waste dumping in ecosystem habitats.

DECLINING FISH STOCKS

Malaysia's fish stock is presently facing pressures of excessive fishing, pollution, and climate change. This is concerning as the fisheries sector in Malaysia plays an important supplier of food source, economic export, and job employment.

Plausible reasons indicating the excessive exploitation of fisheries in Malaysia is due to the overinvestment in fishing capacity (i.e., incentives or subsidies for new fishing vessels, fuel, etc. to reduce fishing cost), and increasing non-selective commercial fishing gears such as trawlers. While incentives are beneficial, these may also create perverse incentives for continued fishing despite the declining rate of fish stocks. This then leads to overfishing, vessel overcapitalisation, and a reduced economic efficiency as more resources are being pooled into incentives rather than acquiring more fish stocks for economic growth. Encroachment of more foreign fishing vessels into Malaysian Exclusive Economic Zone (EEZ) waters may also explain the state of excessive exploitation as well.

Additionally, developmental pressures from land-based activities including agriculture and industries release pollutants such as sewage and sediment that harm reefs and alter marine water quality. Climate change also pushes the decline in fish stocks through the alteration of rising sea temperatures (i.e., coral bleaching), sea level rise (i.e., coastal fisheries to be impacted through coastal erosion), and many more.

THE CHALLENGE BEFORE US

IMPLEMENTATION CHALLENGES

MAINSTREAMING

Mainstreaming biodiversity refers to having biodiversity recognised and included in all aspects of planning, decision-making, and execution of developmental projects, policies, and systems within the nation. This includes from all parties involved from the government, business from private sectors, international organisations, and such. By having biodiversity mainstreamed into all aspects of society, this may help to minimise the negative impacts the manufacturing and productive sectors that exert on biodiversity.

Efforts to mainstream biodiversity in Malaysia has been notable through state conservation strategies by state economic planning units and published guidebook, "The Common Vision on Biodiversity" in 2010 by the former Ministry of Natural Resources and Environment. However, the document still remains as a federal government document and is not widely used by stakeholders in other sectors. Documents such as the National Physical Plan, the Environmentally Sensitive Area (ESA) framework, the upcoming National Coastal Physical Plan, as well as revised State Structure Plans and Local Area Plans are set to incorporate more efforts in biodiversity mainstreaming. However, full implementation will require cooperation from multiple sub-regional government stakeholders including the state governments and district councils.

AWARENESS

Poor understanding of what biodiversity is, why it is important and how we should manage it has been a constant obstacle for effective biodiversity conservation in Malaysia. The low level of awareness is compounded by the fact that public budget allocation for biodiversity is very low, although biodiversity and ecosystem services generate significant values for the Malaysian economy. These significant values are ill-understood and poorly appreciated by most people.

The Baseline Study on Biodiversity Conservation indicated that 64% of surveyed respondents from the general public category (e.g., household members, students at primary, secondary and tertiary levels) have heard of what biodiversity is. However, only 9% were noted to have basic or advanced understanding of what biodiversity is. As such, there is a need for more concerted efforts to enhance biodiversity mainstreaming to improve awareness of the general public, as well as shedding light on the National Policy on Biological Diversity (NPBD).

FUNDING CAPACITY

Funding biodiversity conservation is a long-term challenge for Malaysia as a whole and is considered low as compared to the significant values that biodiversity and ecosystem services generate for the Malaysian economy and population. The government sector was identified as the primary source of biodiversity-related expenditure, followed by the Non-Governmental Organisation (NGO) and private sectors respectively. Public budget allocations on the other hand are relatively low. Although, the financing capacity has been diversified over the last decade where various trust funds (e.g., National Conservation Trust Fund for Natural Resources, Marine Parks Trust Fund, Taman Negara Trust Fund) have been set up to act as a long-term sustainable financing mechanism. Multilateral organisations such as UNDP, GEF and the International Tropical Timber Organisation (ITTO) as well as bilateral agencies such as Danish International Development Agency (DANIDA) and Japan International Cooperation Agency (JICA) have been notable in providing funds to conserve biodiversity in the past and present. However, Malaysia is moving out of the developing country status and will find it challenging to tap into multilateral and bilateral aid funds in the future. There is thus an urgent need to tap on other financial sources to better conserve and protect biodiversity in Malaysia.



SECTION 2 :
KEY ELEMENTS OF THE POLICY

Jeram Berungut, Kenaboi State Park,
Jelebu, Negeri Sembilan

POLICY STATEMENT

The policy statement of the National Policy on Biological Diversity 2022-2030 will ensure that:

"Malaysia is committed to conserve its biological diversity, promote its sustainable use, and ensure the fair and equitable sharing of benefits arising from the utilisation of biological resources."

The National Policy on Biological Diversity (NPBD) 2022-2030 will continue provide guidance in conserving Malaysia's biological diversity and to ensure that it is utilised in a sustainable manner for the continued progress of the nation. In keeping with Malaysia's international commitments, the Policy still embodies the spirit of the Sustainable Development Goals and will be aligned with all the key elements of the CBD's Kunming-Montreal Global Biodiversity Framework.

PRINCIPLES

The Policy will still be guided by the previous five principles to ensure that the goals, targets and actions support Malaysia's vision for sustainable development:

PRINCIPLE 1:
HERITAGE
Biological diversity is a national heritage and it must be sustainably managed and wisely utilized today and conserved for future generations.

PRINCIPLE 2:
RECAUTIONARY
The lack of full scientific certainty should not be used as a reason to postpone measures to minimise threats of significant loss of biodiversity.

PRINCIPLE 3:
SHARED ESPONSIBILITY
The conservation and sustainable utilisation of biodiversity are the shared responsibility of all sectors of society. Planning & management of biodiversity must be carried out in a participatory manner.

PRINCIPLE 4:
PARTICIPATORY
The role of indigenous peoples and local communities in the conservation, management and utilisation of biodiversity shall be recognised and their rightful share of benefits shall be ensured.

PRINCIPLE 5:
GOOD GOVERNANCE
Good governance, including accountability and transparency in decision-making, is crucial to biodiversity conservation.

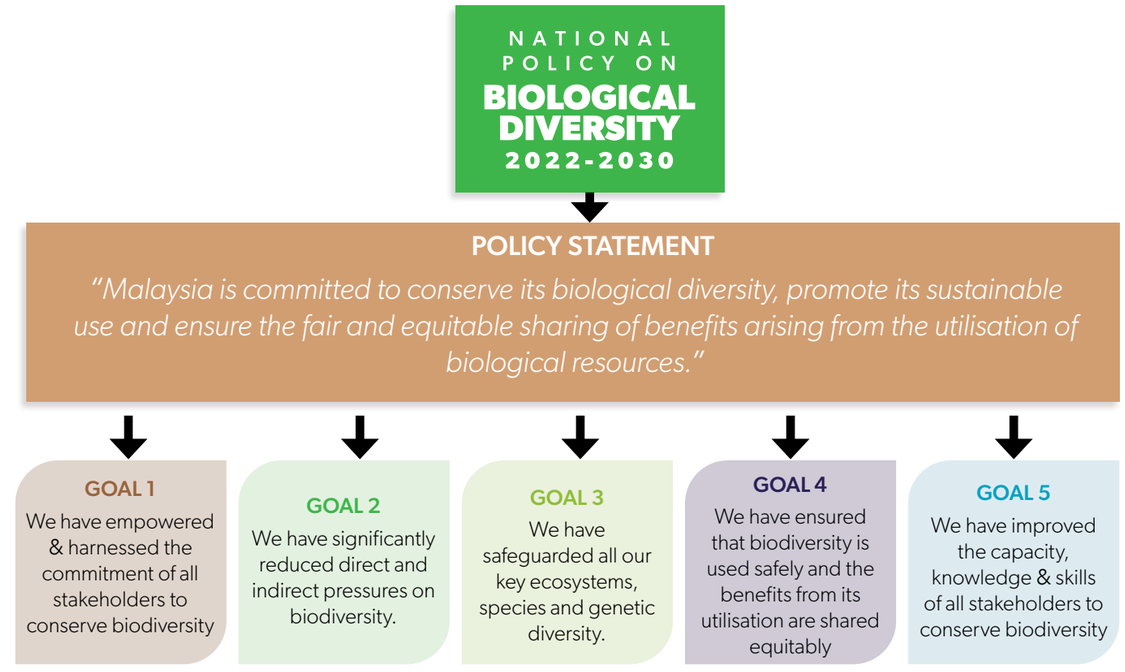




GOALS, TARGETS AND ACTIONS

The NPBD 2022-2030 will retain the goal-target-action framework to guide our efforts to conserve our biodiversity, promote its sustainable use and ensure fair and equitable sharing of benefits from the use of biological resources.

The Policy contains five overarching goals which closely mirror the goals of the CBD's Kunming Montreal Global Biodiversity Framework.



Each goal is accompanied by targets to provide focus on specific areas. The Policy still contains 17 targets to be achieved by 2030. These targets are mostly aligned to the Kunming-Montreal Global Biodiversity Framework Targets, and based on national circumstances. The timeline of the Policy has also been revised to 2030, as this will coincide with the mid-term reporting of countries to the CBD on the implementation of country biodiversity strategies and action plans, as well as meeting other national priorities and targets.

The targets are accompanied by a set of actions that spell out the steps that need to be taken to meet the targets and ultimately, the goals. There are a total of 61 actions in this Policy. These actions have been revised based on a review of the progress of the previous NPBD as well as taking into account new and emerging challenges and issues that need to be addressed in Malaysia. The Policy is also in line and will support the 12th Malaysia Plan with regards to Sustainable Development (Thematic Area 3). More specifically, the Policy will support various strategies such as Shared Responsibility in Reducing Pollution, Improving Resilience towards Climate Change and Natural Disasters, Conservation of Natural Ecosystems, Protection and Conservation of Species and Genetic Resource, Sustainable Usage and Benefit Sharing, Strengthening Environmental Management, and Increasing Green Financing and Investments.



Safeguarding Malaysia's biodiversity will require every citizen to contribute towards conservation. Empowering every segment of our society and harnessing their commitment remains a fundamental principle to the conservation of our biodiversity.

The Federal and State governments will continue to play leading roles in terms of direction, coordination, and implementation of high-level conservation initiatives. While biodiversity- and environment-related agencies and the academia will remain as focal agencies in managing the country's biodiversity, other sectoral agencies overseeing land use planning, infrastructure, transportation, agriculture, fisheries, mining, tourism, as well as economic and human development need to be empowered more to actively support biodiversity conservation initiatives.

Civil society will continue to be active partners in biodiversity conservation. Partnerships and opportunities between civil society and the government are anticipated to significantly increase in implementing key conservation activities. The involvement of indigenous peoples and local communities in biodiversity conservation has also significantly increased due to strong partnerships and empowerment through continuous dialogue, awareness raising, and capacity building. These efforts need to continue on in order to secure them as key partners in biodiversity conservation.

We envisage more direct participation from the private sector towards biodiversity conservation in the coming future. Environmental, Social, and Governance (ESG) principles, as well as the SDG are slowly being incorporated as guiding principles for the private sector, which has created more awareness and interest towards contributing more to conserving Malaysia's biodiversity. The private sector thus need to be engaged directly through relevant agencies that empower and enable them through coordinated efforts with Federal and State Governments to become active partners in conservation.

Goal 1 has 2 targets:

- **TARGET 1:**
  By 2030, more Malaysians are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably
- **TARGET 2:**
  By 2030, the roles of indigenous peoples and local communities, civil society, the private sector, and academia in biodiversity conservation have been strengthened significantly

Source: Forest Department Sarawak

GOALS, TARGETS AND ACTIONS

GOAL 1

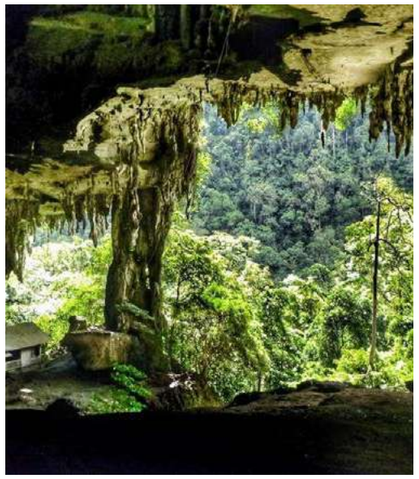
WE HAVE EMPOWERED & HARNESSED THE COMMITMENT OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 1:

BY 2030, MORE MALAYSIANS ARE AWARE OF THE VALUES OF BIODIVERSITY AND THE STEPS THEY CAN TAKE TO CONSERVE AND USE IT SUSTAINABLY

WHY IS THIS TARGET IMPORTANT?

Conservation is more effective when the full importance of biodiversity is recognised and acknowledged. The level of awareness and understanding of biodiversity amongst Malaysians remains poor. More efforts are needed to improve biodiversity consciousness across society before empowerment can take place. Awareness raising, as well as continuous dialogues amongst different segments of society is important to advocate behavioural change in individuals, organisations, sectors, and governments to support and contribute to biodiversity conservation.



MEETING THE TARGET

Improving the awareness levels of Malaysians will require varying approaches for different segments of society. Opportunities for public participation can help to increase the general knowledge and awareness of civilians towards the values of biodiversity and what they can do to protect and conserve it.

Target 1 has 2 Actions:

- **ACTION 1.1:** Enhance biodiversity consciousness across all segments of society
- **ACTION 1.2:** Ingrain biodiversity consciousness within children and youth

ACTION 1.1:

ENHANCE BIODIVERSITY CONSCIOUSNESS ACROSS ALL SEGMENTS OF SOCIETY

We need to continuously create and enhance awareness across all segments of our society. Effective communication will require dissemination of accurate and comprehensible information to all segments of society. This ranges from decision-makers like the MPs, ADUNs, politicians, councillors, business directors, resources managers, down to the general public and local communities.

We need to:

a. Develop collaborative CEPA programmes to reach all segments of society.
b. Increase opportunities for public participation in biodiversity research and conservation such as through citizen science.
c. Leverage on global biodiversity events as platforms for building targeted awareness and participation.
d. Enhance the use of digital tools including social media platforms and mobile applications to communicate biodiversity.
e. Increase publication that exemplify Malaysia's biodiversity to all segments of society (e.g., coffee-table books, magazines, novels)

Key Indicator:

By 2030, the public awareness levels on the importance of biodiversity has increased compared to 2024 levels

GOAL 1

WE HAVE EMPOWERED & HARNESSED THE COMMITMENT OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 1:

BY 2030, MORE MALAYSIANS ARE AWARE OF THE VALUES OF BIODIVERSITY AND THE STEPS THEY CAN TAKE TO CONSERVE AND USE IT SUSTAINABLY

ACTION 1.2:

INGRAIN BIODIVERSITY CONSCIOUSNESS WITHIN THE CHILDREN AND YOUTH

It is crucial for the future generation of Malaysia to be well-educated and nurtured on various aspects of biodiversity. At the same time, there is also a need to strengthen the capacities and skills of educators who will be nurturing and developing interests in biodiversity conservation.

We need to:

a. Strengthen biodiversity elements within the curriculum and co-curriculum of schools (including pre-schools) and other educational institutions .
b. Develop biodiversity-related training for educators across all levels of education.
c. Expand and strengthen nature education centres in protected areas and areas of high biodiversity value.
d. Expand programmes that enable youths to be exposed and involved in biodiversity conservation.

Key Indicator:

By 2030, the number of children and youths participating in biodiversity conservation activities has increased by 50% compared to 2024 levels



Asian elephant
Elephas maximus

GOALS, TARGETS AND ACTIONS

TARGET 2:

BY 2030, THE ROLES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, CIVIL SOCIETY, THE PRIVATE SECTOR, AND ACADEMIA IN BIODIVERSITY CONSERVATION HAVE BEEN STRENGTHENED SIGNIFICANTLY



WHY IS THIS TARGET IMPORTANT?

The participation of indigenous peoples, local communities, civil society, the private sector, and academia in biodiversity conservation have been steadily increasing. This is due to continued effort from conservationists to empower and harness the commitments from these major stakeholder groups. As Malaysia continues to develop in this rapidly modernising age, we must increase efforts to empower and harness the full commitments of key players to fulfil our shared responsibility and ensure that Malaysia's biodiversity is not neglected.

MEETING THE TARGET

This target will require effective and lasting partnerships to be established between the important stakeholder groups. Civil society organisations need to be empowered through effective working platforms to ensure that their efforts are recognised and are in line with this Policy, while also identifying avenues for more initiatives to be developed. The private sector needs more recognition for their role as crucial partners in conservation. Avenues need to be in place for them to contribute, be it through resource mobilisation, capacity building, awareness raising, and reporting achievements. Communication and engagements with the indigenous peoples and local communities also need to be continued and sustained to nurture local champions for biodiversity conservation on the ground.

Target 2 has 5 actions:

- **ACTION 2.1:** Empower and support indigenous peoples and local communities
- **ACTION 2.2:** Develop long-term partnerships with civil society
- **ACTION 2.3:** Harness the strength of the private sector
- **ACTION 2.4:** Enhance stakeholder participation in the decision-making process
- **ACTION 2.5:** Strengthen collaborations with the academic community

TARGET 2:

BY 2030, THE ROLES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, CIVIL SOCIETY, THE PRIVATE SECTOR, AND ACADEMIA IN BIODIVERSITY CONSERVATION HAVE BEEN STRENGTHENED SIGNIFICANTLY

ACTION 2.1:

EMPOWER AND SUPPORT INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

The indigenous people and local communities are regarded as stewards of nature. Being close to nature means that they have an intricate relationship with their environment, as well as a wealth of knowledge on biodiversity. It is thus crucial for them to be empowered as stewards to help conserve biodiversity in their localities.

We need to:

a. Review relevant legislations, procedures, and policies to empower indigenous peoples and local communities across all genders to contribute towards the management and conservation of biodiversity.

b. Develop smart partnership arrangements and programmes that facilitate the involvement of indigenous peoples and local communities in biodiversity conservation, including women and children.

c. Enhance capacity building and support to enable indigenous peoples and local communities (including women and children) to play more effective roles in biodiversity conservation, especially with regards to recognition of basic human and land tenure rights.

d. Continue to identify, nurture, and recognise local champions for biodiversity conservation through relevant platforms.

Key Indicator:
By 2030, policies to empower indigenous peoples and local communities have been developed and implemented

ACTION 2.2:

DEVELOP LONG-TERM PARTNERSHIPS WITH CIVIL SOCIETY

Civil society organisations are key partners in conservation. Their unrelenting and continued involvement in long-term programmes and projects have helped increase awareness, support, and action towards biodiversity conservation. As such, there is a need to increase avenues for civil society to partner with other stakeholders in conservation, as well as protecting their rights as environmental defenders.

We need to:

a. Encourage the active participation of NGOs and CSOs to utilise national financial instruments and voluntarily report their conservation projects, including outputs and outcomes.

b. Acknowledge and legally support NGOs and CSOs in implementing programmes that are in line with the Policy.

c. Develop smart partnership arrangements with NGOs and CSOs to enable implementation of conservation initiatives.

Key Indicator:
By 2030, the number, size, and duration of collaborative projects with civil society have increased by 50% compared to 2024 levels

GOALS, TARGETS AND ACTIONS

GOAL 1

WE HAVE EMPOWERED & HARNESSED THE COMMITMENT OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 2:

BY 2030, THE ROLES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, CIVIL SOCIETY, THE PRIVATE SECTOR, AND ACADEMIA IN BIODIVERSITY CONSERVATION HAVE BEEN STRENGTHENED SIGNIFICANTLY

ACTION 2.3:

HARNESS THE STRENGTH OF THE PRIVATE SECTOR

Malaysia's thriving private sector has begun to be more actively involved in biodiversity conservation as part of increasing requirements towards sustainable development and Environmental, Social, Governance (ESG) principles. We need to leverage on recent efforts and foster effective partnerships to empower them to be allies towards achieving the country's goals in biodiversity conservation.

We need to:

a. Embed biodiversity conservation into Environmental, Social and Governance (ESG) commitments and strategies of all public-listed companies to ensure transparent disclosure.
b. Scale up Corporate Social Responsibility (CSR) and ESG commitments and strategies of Small-Medium Enterprises (SMEs) that relate to biodiversity conservation.
c. Strengthen the role of the Malaysia Platform for Business and Biodiversity (MPBB) in harnessing private sector participation in biodiversity conservation.
d. Develop and implement a Business and Biodiversity Action Plan in line with the Business and Biodiversity Strategic roadmap to ensure the private sector participation towards biodiversity conservation.
e. Develop smart partnership arrangements in implementing programmes that are in line with the Policy, especially in leveraging on the technical expertise and human resources of the private sector.
f. Encourage active participation of the private sector to report their initiatives on biodiversity conservation, as well as disclosures based on international standards and initiatives through national platforms.
g. Encourage direct impact funding channels towards conservation activities.
h. Empower and enable private sector engagement through active collaboration with federal agencies in establishing transparent long term commitments.

Key Indicator:
By 2030, all public-listed companies are reporting on biodiversity conservation initiatives

ACTION 2.4:

ENHANCE STAKEHOLDER PARTICIPATION IN DECISION-MAKING PROCESSES

All Malaysians have a stake in ensuring that our nation's biological resources and ecosystem services are conserved and well-managed. We need to ensure that all Malaysians have the opportunity to participate and contribute in decision making processes so that all plans, actions and outcomes are democratic and reflects our common vision for biodiversity.

We must:

a. Strengthen the public consultation process in the formulation of legislation, policies, plans and projects that are related to, or have an impact on biodiversity.
b. Strengthen the public consultation process in the gazettement, management, and excision of areas that are important for biodiversity.
c. Strengthen the public consultation process in planning approvals and impact assessments of development projects that affect biodiversity.
d. Strengthen the Free, Prior, and Informed Consent (FPIC) process in projects that affect indigenous peoples and local communities.
e. Increase public access to key documents related to biodiversity such as Federal and State government gazettes, management plans, and Environmental Impact Assessments (EIAs).

Key Indicator:
By 2030, stakeholder participation in public consultation processes has led to positive outcomes towards biodiversity conservation

GOAL 1

WE HAVE EMPOWERED & HARNESSED THE COMMITMENT OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 2:

BY 2030, THE ROLES OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES, CIVIL SOCIETY, THE PRIVATE SECTOR, AND ACADEMIA IN BIODIVERSITY CONSERVATION HAVE BEEN STRENGTHENED SIGNIFICANTLY

ACTION 2.5:

STRENGTHEN COLLABORATIONS WITH THE ACADEMIC COMMUNITY

The academic community have an important role to play in biodiversity conservation. Continuous research is essential in biodiversity conservation in order to fill knowledge gaps through the science-policy interface. However, research findings will only benefit everyone if they are communicated to other key stakeholders. We must endeavour to include the academic community in all forms of biodiversity conservation, including policy planning.

We need to:

a. Strengthen research efforts to address knowledge gaps in critical areas to facilitate policy planning.
b. Communicate scientific findings regularly and in a synthesised and easily understood manner to key stakeholders.
c. Establish partnerships between the private sector, local communities, and academia to support this Policy through various research opportunities and projects.
d. Strengthen the national Clearing House Mechanism (CHM) as a platform for sharing information between researchers, resource managers and other stakeholders.
e. Establish a network of depositories of specimens and records through collaborations between the Natural History Museum and Malaysia Biodiversity Centre to safeguard Malaysia's immense biodiversity collections .
f. Support a local journalism network in disseminating academic research into public-friendly information.

Key Indicator:
By 2030, at least 30% of research is effectively translated and implemented into policy papers



Mount Wullersdorf, Tawau, Sabah

Madai - Baturong Forest Reserve, Sabah

GOALS, TARGETS AND ACTIONS



As Malaysia continues to develop and grow, the direct and indirect pressures towards biodiversity will continue to persist. Timber harvesting, agriculture and commodity expansion, fisheries extraction, and infrastructure development have long been the common causes of biodiversity loss and ecosystem degradation. Renewed interest in mining, as well as expanding tourism, will add on more pressures towards our biodiversity and natural habitats.

Mainstreaming among all economic sectors remains an utmost priority. We want to ensure that these sectors are planned and managed sustainably and takes the necessary measures to minimise pressure on our biological resources. While we recognise that each sector has its own mandate and aspirations, we need to work together to harmonize biodiversity conservation and sector-specific development, thus working towards actual sustainable development. We realise that changes towards the management of our resources and planning need to occur for effective mainstreaming to happen.

Goal 2 has 5 targets:

- **TARGET 3:** By 2030, terrestrial and marine spatial planning fully incorporate elements of biodiversity conservation
- **TARGET 4:** By 2030, biodiversity conservation has been effectively mainstreamed into development frameworks
- **TARGET 5:** By 2030, our forest governance and management has been strengthened for biodiversity conservation
- **TARGET 6:** By 2030, our agrofood, agricommodity, and fisheries production are managed and harvested sustainably
- **TARGET 7:** By 2030, the synergies between tourism and conservation are fully realised

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 3:
BY 2030, TERRESTRIAL AND MARINE SPATIAL PLANNING FULLY INCORPORATE ELEMENTS OF BIODIVERSITY CONSERVATION

WHY IS THIS TARGET IMPORTANT?



Traditionally, biodiversity conservation focused on very specific areas and habitats that have rich and diverse flora and fauna communities. However, long-term research and studies have shown that there is a need for conservation to be done at a landscape level. This is because biodiversity also depends on the various interconnected ecosystem services which help to sustain life. As such, there is a need to change our spatial planning and management processes. Being the guiding documents for our nation's development, our spatial plans need to start incorporating principles for biodiversity and habitat conservation, which will also boost ecosystem resilience to climate change.

MEETING THE TARGET

This target specifically focuses on mainstreaming biodiversity conservation into our planning documents. In particular, it calls for better spatial planning across important landscapes and seascapes, specifically when it comes to the management of our land, and coastal area for future development. We also need to strengthen conservation in our urban areas. New townships should incorporate natural areas into its design to leverage on its recreational and aesthetical values. Our landscaping measures also need to be strengthened so that urban areas can be a refuge for wildlife, especially pollinators and seed dispersers.

Target 3 has 2 Actions:

- **ACTION 3.1:** Strengthen biodiversity conservation elements in national, state, and local development plans
- **ACTION 3.2:** Enhance urban biodiversity conservation

ACTION 3.1:

STRENGTHEN BIODIVERSITY CONSERVATION ELEMENTS IN NATIONAL, STATE AND LOCAL DEVELOPMENT PLANS

Biodiversity conservation elements need to be mainstreamed further in all spatial plans so that future developments are properly planned and executed without imposing more pressure towards our biological and natural resources. We also need to increase the recognition of important biodiversity areas in these spatial plans to ensure major development projects do not encroach into these areas.

We need to:

a. Incorporate principles for protecting and managing biodiversity at the landscape and seascape levels within national development plans, state structure plans, and local district plans.

b. Expand spatial planning to include all marine areas, notably at the state and local district levels, as well as beyond Malaysia's EEZ up to international marine borders.

c. Incorporate important biodiversity areas as Environmentally Sensitive Areas within national, state, and local development plans.

d. Ensure that development zones in local district plans avoid Environmentally Sensitive Areas and important biodiversity areas, especially during the review and updating process.

e. Support implementation of the National Action Plan on Peatlands (NAPP) and ASEAN Peatland Management Strategy 2023-2030 (APMS), in particular the objectives related to assessment, protection and rehabilitation, integrated management, fire prevention, and control.

Key Indicator:

By 2030, important landscapes and seascapes have been integrated and recognised in the national, state, and local development plans

GOALS, TARGETS AND ACTIONS

TARGET 3:
BY 2030, TERRESTRIAL AND MARINE SPATIAL PLANNING FULLY INCORPORATE ELEMENTS OF BIODIVERSITY CONSERVATION

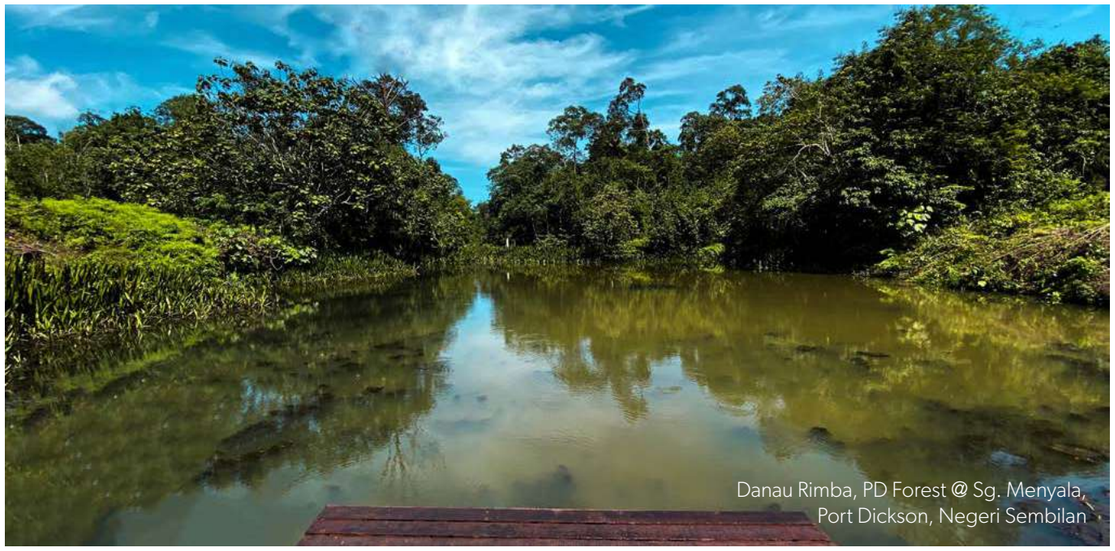
ACTION 3.2:
ENHANCE URBAN AND RURAL BIODIVERSITY CONSERVATION

Urban and rural areas have great potential in contributing towards biodiversity conservation. Green space and remnant forest patches can still serve as viable habitats for a wide range of wildlife, including migratory birds and pollinating insects. At the same time, these areas can also serve as potential rehabilitation and ex-situ conservation areas. In turn, these provide multiple benefits to the community and the environment, through increased recreational and aesthetical values and improved ecological connectivity within the urban environment.

We have to:

a. Continue to maintain gazetted land meant as green cover and water reservoirs within cities.
b. Support local authorities to increase green and blue spaces as part of the design criteria within commercial area development plans.
c. Support local authorities to repurpose empty spaces / brownfield areas for urban forests, green lungs, pocket parks, and urban gardens / farms to enhance ecosystem services and support climate change adaptation.
d. Promote integration and usage of native species to the urban landscape.
e. Develop the capacities of local authorities to manage urban and rural biodiversity.
f. Encourage local authorities to measure and report on urban biodiversity through existing and potential platforms .
g. Encourage and incentivise property developers to conserve and enhance biodiversity in their land.

Key Indicator:
By 2030, biodiversity is being actively enhanced in all local authorities and townships



Danau Rimba, PD Forest @ Sg. Menyala, Port Dickson, Negeri Sembilan

TARGET 4:
BY 2030, BIODIVERSITY CONSERVATION HAS BEEN EFFECTIVELY MAINSTREAMED INTO DEVELOPMENT FRAMEWORKS



Timimbang Forest Reserve, Sabah

WHY IS THIS TARGET IMPORTANT?

Economic development remains a key national priority for Malaysia. Nonetheless, we must ensure that Malaysia's aspirations to become a developed country entails sustainable and efficient utilisation of its land and natural resources. As such, biodiversity conservation must take place together with national development rather than in isolation. Mainstreaming biodiversity into the different sectors and development frameworks remains a crucial aspect to ensure direct and indirect pressures towards biodiversity are thoroughly and effectively addressed.

MEETING THE TARGET

Effective biodiversity mainstreaming requires ingraining the principles of this Policy into various facets of Malaysia's economic sectors. Conservation principles and measures need to be considered and reflected during the development of new development policies, as well as in the revision of our current development plans. At the same time, we must also strengthen the monitoring processes to ensure development is pursued and conducted sustainably without imposing more pressures towards biodiversity. Our valuation of biodiversity also needs to be strengthened and further incorporated into our planning frameworks to better reflect the country's economic growth.

Target 4 has 6 Actions

- **ACTION 4.1:** Strengthen safeguards for biodiversity through the financial sector
- **ACTION 4.2:** Incorporate biodiversity conservation principles into the infrastructure, commercial, industrial, energy, and health sectors
- **ACTION 4.3:** Strengthen biodiversity assessment and monitoring processes during project development planning
- **ACTION 4.4:** Strengthen pollution monitoring and regulation to protect freshwater and marine ecosystems
- **ACTION 4.5:** Strengthen safeguards to minimise pressures from mining developments
- **ACTION 4.6:** Strengthen sustainable consumption and production to support biodiversity conservation

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 4:
BY 2030, BIODIVERSITY CONSERVATION HAS BEEN EFFECTIVELY MAINSTREAMED INTO DEVELOPMENT FRAMEWORKS

ACTION 4.1:
STRENGTHEN SAFEGUARDS FOR BIODIVERSITY THROUGH THE FINANCIAL SECTOR

Biodiversity underpins virtually all economic activities. However, it remains unaccounted within our country's GDP and an undervalued input of the GDP itself. It is evident that we must develop alternative ways of measuring economic, social, as well as environmental health in order to make properly informed decisions on land-use planning and development.

We need to:

a. Develop a national System of Environmental and Economic Accounting (SEEA) framework that acknowledges biodiversity and ecosystem service values in the country's economy.
b. Develop and mainstream a Sustainable and Responsible Taxonomy for Biodiversity as a classification instrument to aid responsible investment and financing.
c. Develop a framework for biodiversity-related financial disclosure to regulate and support biodiversity reporting and risk assessments by financial sector firms.
d. Encourage and incentivise companies to engage with federal agencies and relevant national programmes in adopting their ESG goals that strengthen biodiversity conservation and safeguards.

Key Indicator:
By 2030, biodiversity conservation has been embedded into the country's investment and financing frameworks

ACTION 4.2:
INCORPORATE BIODIVERSITY CONSERVATION PRINCIPLES INTO THE INFRASTRUCTURE, COMMERCIAL, INDUSTRIAL, ENERGY, AND HEALTH SECTORS

Biodiversity mainstreaming needs to be continuously instilled in all our sectoral policies. Addressing biodiversity conservation at the policy level can help reduce direct pressures and avoid the need for expensive rehabilitation work at the project level. While each sector has its own mandate and aspirations, we have to continue working together to ensure biodiversity and ecosystem services are valued and managed properly within development.

We need to:

a. Ensure that linear infrastructure developments include measures to avoid, minimise, and mitigate habitat fragmentation and wildlife roadkills.
b. Strengthen environmental safeguards in the planning and construction of dams and river engineering works.
c. Strengthen safeguards to ensure township and commercial developments are sited away from important biodiversity areas and do not incur conversion of terrestrial habitats and coastal reclamation.
d. Ensure greenfield industrial developments and operations are sited away from water catchments, forest reserves, rivers, and other important biodiversity areas to avoid habitat loss and degradation.
e. Ensure the establishment of large-scale renewable energy production facilities do not incur clearing of terrestrial habitats or deter /disrupt lake and coastal ecological processes.
f. Mandate the need for Marine Mammal Observers (MMOs) on-board seismic exploration vessels and other oil and gas exploration activities within Malaysia's EEZ waters to minimise / mitigate impacts on marine mammals where relevant .
g. Develop and mainstream the One Health approach amongst human, animal, and environmental health stakeholders (and other relevant areas of expertise) to address and manage health issues at the human-animal-environment interface, including zoonotic diseases.

Key Indicator:
By 2030, relevant and effective biodiversity safeguards have been embedded into the infrastructure, commercial, industrial, energy, and health sectors

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 4:
BY 2030, BIODIVERSITY CONSERVATION HAS BEEN EFFECTIVELY MAINSTREAMED INTO DEVELOPMENT FRAMEWORKS

ACTION 4.3:
STRENGTHEN BIODIVERSITY ASSESSMENT AND MONITORING PROCESSES DURING PROJECT DEVELOPMENT PLANNING

Our country enforces a myriad of acts, enactments, and regulations to monitor development impacts towards the environment. However, impacts towards biodiversity and ecosystem services have remained sorely overlooked in view of other major impacts. We thus need to strengthen impact assessments and monitoring frameworks to also include biodiversity as a crucial component in major projects and developments.

We need to:

a. Incorporate biodiversity risk valuation and risk assessments into feasibility studies and preliminary screening processes to identify potential threats towards biodiversity from proposed developments and guide decision-making.
b. Strengthen the EIA review process to be more stringent towards ecological and biodiversity impacts, especially at the state level.
c. Increase post-EIA monitoring and enforcement to ensure environmental mitigation measures are implemented and effective during the construction phase.
d. Study the feasibility of implementing No Nett Loss (or preferably Nett Gain) approach in the approval of projects that are likely to cause significant loss of biodiversity.

Key Indicator:
By 2030, biodiversity regulatory frameworks are in place and implemented within project development frameworks

ACTION 4.4:
STRENGTHEN POLLUTION MONITORING AND REGULATION TO PROTECT FRESHWATER AND MARINE ECOSYSTEMS

There has been increasing pressures towards our freshwater and marine ecosystems. Increased industrial development have resulted in increased pollution loads which are causing serious environmental damage. As such, we must improve regulations and enhance enforcement to minimise pollution impacts towards these two important and fragile ecosystems.

We need to:

a. Strengthen legislations to ban single plastic use to reduce microplastic pollution into rivers, specifically at the state and district council levels.
b. Assess the permissible pollution loads of major river basins and severely contaminated rivers through the Total Maximum Daily Load (TMDL) approach.
c. Establish pollution monitoring programmes with integrated databases for data collection and dissemination by central agencies.
d. Commission a long-term study to determine the effects of emerging pollutants on marine and freshwater biodiversity and revise pollution concentration standards accordingly.
e. Commission a long-term study to determine the effects of noise pollution towards marine and freshwater biodiversity and develop appropriate mitigation measures.

Key Indicator:
By 2030, freshwater and marine pollution levels have improved compared to 2024 levels

GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 4:
BY 2030, BIODIVERSITY CONSERVATION HAS BEEN EFFECTIVELY MAINSTREAMED INTO DEVELOPMENT FRAMEWORKS

ACTION 4.5:
STRENGTHEN SAFEGUARDS TO MINIMISE PRESSURES FROM MINING DEVELOPMENTS

Mining is expected to experience significant growth in the coming years. Demand for specific minerals to support the manufacturing, industry, and technology sectors necessitates more extraction. Coincidently, many of the mineral rich areas are also important biodiversity areas. As such, it is crucial to ensure that future mining activities are planned and executed responsibly and take into consideration remedial steps to conserve or rehabilitate natural areas and biodiversity.

We need to:

a. Ensure that all mining projects take into account all relevant legislation and avoid important biodiversity areas including Permanent Reserved Forest (PRF) and protected areas.
b. Mandate the need for less intrusive mining techniques, specifically in mineral-rich areas which are also important biodiversity landscapes.
c. Ensure mining project approvals adopt the No Nett Loss approach and instruct project owners and operators to implement mitigation measures during construction and operational activities.
d. Necessitate and incentivise mining owners / operators to undertake habitat rehabilitation activities upon phased completion of mining operations or expiration of mining permits.
e. Increase monitoring and enforcement to ensure proposed mitigation measures are implemented and to assess effectiveness.

Key Indicator:
By 2030, biodiversity conservation principles have been translated into implementable actions within mining projects

ACTION 4.6:
STRENGTHEN SUSTAINABLE CONSUMPTION AND PRODUCTION TO SUPPORT BIODIVERSITY CONSERVATION

Sustainable consumption and production has to ensure the needs for economic growth and livelihoods of the present generation are also safeguarded for future generations. This requires efficient use of natural resources, minimising over-consumption and wastage, and reducing pollution and waste over the life cycle of products and services. Unsustainable consumption and production are among the root causes of biodiversity loss, as well as climate change, and increased pollution. These crises threaten both human well-being and biodiversity. There is a dire need to improve understanding and awareness on reducing over-consumption and waste generation as a means to support biodiversity conservation.

We need to:

a. Strengthen mainstreaming of the circular economy approach across all segments of society and relevant production sectors to start transitioning towards reducing dependencies on imports and new resources, as well as reducing wastage of production materials.
b. Promote lifestyles that encourage sustainable consumption and usage of environment-friendly products to reduce consumption footprints.
c. Strengthen policies, legislations, and economic instruments to improve national consumption patterns and reduce over-consumption of natural resources and waste generation.
d. Expanding the Supplier Relationship Management (SRM), Extended Producer Responsibility (EPR) and Polluters Pay frameworks to evaluate business supply chains to ensure goods, materials, and services are sustainably sourced and managed to reduce pollution and wastage.

Key Indicator:
By 2025, the national consumption footprint has been established and by 2030, steps are in place to reduce excessive consumption levels

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 5:
BY 2030, OUR FOREST GOVERNANCE AND MANAGEMENT HAS BEEN STRENGTHENED FOR BIODIVERSITY CONSERVATION



Matang Mangrove Forest Reserve, Kuala Sepetang, Perak

WHY IS THIS TARGET IMPORTANT?

A large proportion of our terrestrial and aquatic biodiversity lies within the various forest formations that constitute Malaysia's tropical evergreen rainforests, which are renowned to be among of richest and most productive terrestrial ecosystems on Earth. There is also an increasing understanding that forests play an important role in addressing emerging issues such as climate change as well as ensuring water and food security, as well as quality of life. As such, upholding good governance and sound management of our forests is crucial for biodiversity conservation, and to honour our commitment to maintain at least 50% of our land area under forest and tree cover, as stated unequivocally in the Malaysia Policy on Forestry.

MEETING THE TARGET

Forest governance, in terms of the process of decision-making, is a critical element for the long-term protection of our forests and conservation of the biodiversity and ecosystem services they harbour. Although comprehensive legislation and strong institutional frameworks are in place, we must strive to continuously improve basic tenets such as participation, transparency, and accountability, in the governance of our forests.

Target 5 has 3 Actions:

- **ACTION 5.1:**
  Strengthen forest governance and regulations
- **ACTION 5.2:**
  Enhance sustainable forest management
- **ACTION 5.3:**
  Leverage on technology to enhance forest monitoring and reporting

GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 5:
BY 2030, OUR FOREST GOVERNANCE AND MANAGEMENT HAS BEEN STRENGTHENED FOR BIODIVERSITY CONSERVATION

ACTION 5.1:
STRENGTHEN FOREST GOVERNANCE AND REGULATIONS

Under Article 74(2) of the Federal Constitution, state governments have complete jurisdiction over their respective forest resources, while the Malaysia Policy on Forestry is already in place to provide direction at the national and state levels. Nevertheless, there is still scope to fine-tune key elements in forest governance, in particular to strengthen the degree of permanence of Permanent Reserved Forests. This is especially pertinent towards maintaining our commitment to maintaining at least 50% of our land area under forest and tree cover.

We need to:

a. Develop regulations pertaining to the excision, re-classification or revocation of the status of Permanent Reserved Forest that incorporates consultation with the public and oversights at the State legislative level.

b. Improve the processes involved in awarding all types of concessions in forest reserves, to ensure optimal benefits to the states, while also respecting the rights of indigenous peoples and local communities.

c. Develop frameworks to regulate allocation of long-term forest concessions for biodiversity conservation, including REDD Plus or other carbon projects.

Key Indicator:
By 2030, forestry laws and regulations have been reviewed to support biodiversity conservation and contribute to climate change adaptation

ACTION 5.2:
ENHANCE SUSTAINABLE FOREST MANAGEMENT

The bulk of our forests are within forest reserves managed under Sustainable Forest Management (SFM), a holistic approach that places emphasis on multiple use, to ensure forest activities deliver social, environmental, and economic benefits, in order to balance competing needs and maintain ecosystem functions. The SFM framework provides a strong foundation for biodiversity conservation, and the incorporation of the ecosystem approach, which entails adaptive management to deal with the complex and dynamic nature of ecosystems. While SFM in Malaysia is already of a very high standard, there is always room for improvement, including in relation to biodiversity conservation.

We must:

a. Review forest management plans every 5-10 years through a participatory process that considers the inputs of all stakeholders, including NGOs and IPLC.

b. Strengthen the incorporation of the High Conservation Value (HCV) approach in the forestry industry, in line with international best practices.

c. Continue supporting forest restoration efforts in all Forest Management Units (FMUs).

d. Ensure that forest plantations only constitute a limited portion of the permanent forest estate, and that the impacts of forest conversion on biodiversity and ecosystem services are minimised through appropriate landscape design and management strategies specified in the EIA and or HCV assessment.

e. Expand social forestry and co-management approaches in order to improve socio-economic conditions of IPLC and enhance management of forest resources.

Key Indicator:
By 2030, 50% of the forestry sector has been certified under sustainable management schemes (e.g. MTCS and FSC)

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 5:
BY 2030, OUR FOREST GOVERNANCE AND MANAGEMENT HAS BEEN STRENGTHENED FOR BIODIVERSITY CONSERVATION

ACTION 5.3:
LEVERAGE ON TECHNOLOGY TO ENHANCE FOREST MONITORING AND REPORTING

The level of accuracy and sophistication offered by remote sensing technology, including Earth observation satellite and LiDar (Light detection and ranging) products, is rapidly increasing. We must be able to harness this technology, to develop tools that help us in planning, managing and reporting our forest ecosystems. For example, remote sensing-based models that allow us to predict the impacts of disturbance on forest ecology or above-ground biomass, would provide critical information for forest planning.

We need to:

a. Develop remote sensing tools to aid forest ecosystem planning and establish baseline levels on forest carbon/forest reference level (FRL)/forest emission level (FREL) at the national and state levels.

b. Utilise remote sensing for annual monitoring of forest and tree cover and forest fire incidences.

c. Encourage independent forest monitoring by civil society, including IPLCs, to complement official monitoring platforms.

Key Indicator:
By 2030, technological capacities for forest monitoring have significantly increased



Forest Skywalk, Forest Research Institute Malaysia, Kepong, Selangor

GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 6:
BY 2030, OUR AGROFOOD, AGRICOMMODITY, AND FISHERIES PRODUCTION ARE MANAGED AND HARVESTED SUSTAINABLY



WHY IS THIS TARGET IMPORTANT?

The agrofood, agricommodities, and fisheries are still one of the core economic sectors of Malaysia. These sectors still contribute towards the country's overall GDP while also providing job opportunities to its people. However, these sectors have a very high demand of resources, in terms of land for plantations, and stock species for fisheries. As such, these sectors have long been viewed as contributing towards direct pressures to biodiversity. While we recognise that these sectors need to be sustained, we also need to be more proactive in reducing the impacts towards biodiversity through sustainable management practices. In view of more demand for sustainable agriculture management at the global front, it is also apt that Malaysia endeavours to transition these sectors towards sustainability which seeks to ensure our biodiversity will be effectively conserved.

MEETING THE TARGET

Shifting our agrofood, agricommodities, and fisheries sectors towards sustainability will require changes to management practices and standards. Awareness raising and capacity building will be required, specifically for smallholders and workers. These actions are required so that everyone understands the need for sustainable practices in these sectors that are heavily dependent on land and resource, and how they can play their part. We will also have to reform incentives to ensure that they support biodiversity conservation (directly or indirectly) besides aiding workers. These efforts will help contribute towards long-term conservation initiatives, especially at the landscape and seascape levels.

Target 6 has 4 Actions:

- **ACTION 6.1:** Strengthen sustainable agrofood and agricommodity practices
- **ACTION 6.2:** Reduce the impact of fisheries on marine and coastal biodiversity
- **ACTION 6.3:** Strengthen aquaculture planning and management
- **ACTION 6.4:** Strengthen genetic diversity conservation of cultivated plants, farmed and domesticated animals, and their wild relatives.

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 6:
BY 2030, OUR AGROFOOD, AGRICOMMODITY, AND FISHERIES PRODUCTION ARE MANAGED AND HARVESTED SUSTAINABLY

ACTION 6.1:
STRENGTHEN SUSTAINABLE AGROFOOD AND AGRICOMMODITY PRACTICES

Our agrofood and agricommodity sectors are among the core economic activities of the country and still contribute significantly to the nation's economic output. At the same time, we must ensure that plantations are planned and managed sustainably as these activities require substantial amounts of lands. As such, the future of these sectors will depend on sustainable and effective management of land and plantation practices to reduce pressures towards biodiversity while maximising yields.

Key Indicator:
By 2030, the agrofood and agricommodity sectors are contributing towards positive conservation outcomes

We need to:

a. Strengthen research to increase crop productivity in order to reduce land demand pressures for agrofood and agricommodity expansion.
b. Encourage companies to adopt No Deforestation, No Peat, No Exploitation (NDPE) policies.
c. Enhance the use of the High Conservation Value (HCV) approach in farms and plantations.
d. Review and strengthen environmental regulations to ensure expansion of agrofood and agricommodity plantations do not encroach into areas of high biodiversity value.
e. Provide incentives and technical support to agrofood and agricommodity companies and smallholders in achieving certification under relevant sustainability schemes.
f. Encourage, incentivise, and support plantations to allocate and aggregate fragmented land for ecological corridors across agriculture landscapes.
g. Conduct targeted capacity building programmes to harmonize agriculture and agricommodity operations with biodiversity conservation efforts, especially in monitoring wildlife movement and minimising human-wildlife conflicts.
h. Redirect, reform, or eliminate perverse and harmful economic subsidies perverse into beneficial incentives to facilitate transition towards sustainable agrofood and agricommodity.
i. Develop an integrated database to collate baseline information from farms and plantations to facilitate long-term analysis on biodiversity in agrofood and agricommodity landscapes.

ACTION 6.2:
REDUCE THE IMPACT OF FISHERIES ON MARINE AND COASTAL BIODIVERSITY

The fisheries industry remains an important economic sector for coastal communities. Fish landings are still important to meet domestic and export demands for seafood. However, fish stocks have been declining consistently, resulting in more intensive fishing which will further decimate our fish stocks. As such, there is a dire need to move our fisheries practices to a more sustainable mindset to conserve our fish stocks and sustaining the fisheries industry.

Key Indicator:
By 2030, dependence on capture fisheries is reduced while production is supported by aquaculture (60% capture fisheries; 40% aquaculture)

We must:

a. Legislate sustainability standards into fisheries regulations at the State and district levels.
b. Develop and implement a Sustainable Fisheries Framework that provides policy direction, standards, actions, and enablers to transition Malaysia's fisheries industry towards sustainability.
c. Expand fishery conservation zones through the seascape management approach to allow for recovery of commercial fish stocks and other ecosystems.
d. Develop and implement species-based fisheries management plans (FMPs) that incorporate conservation management interventions such as slow speed zones, restricted fishing gear, seasonal closures, and other restrictions.
e. Strengthen the enforcement and legislative framework to eliminate illegal, unreported, and unregulated (IUU) fishing such as fish bombing and cyanide fishing.

GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 6:
BY 2030, OUR AGROFOOD, AGRICOMMODITY, AND FISHERIES PRODUCTION ARE MANAGED AND HARVESTED SUSTAINABLY

f. Strengthen awareness and implementation of catch documentation schemes to strengthen traceability and sustainability of marine capture fisheries and trade, and to curb illegal, unreported, and unregulated (IUU) fishing.

g. Implement appropriate mitigation techniques and bycatch reduction devices, in particular Turtle Excluder Devices (TED) to reduce bycatch of non-target fish species and marine megafauna.

h. Deploy electronic bycatch monitoring system to generate crucial spatial and temporal data on bycatch hotspots in order to develop targeted and efficient management actions.

i. Provide incentives and technical support to fisheries operators in achieving certification under relevant sustainability schemes.

j. Redirect, reform, or eliminate perverse and harmful economic subsidies to facilitate transition towards sustainable fisheries.

ACTION 6.3:
STRENGTHEN AQUACULTURE PLANNING AND MANAGEMENT

The aquaculture industry plays an important role in helping meet domestic and international seafood demands, while helping decrease fishing pressures towards fish stocks. However, aquaculture farms have also been synonymous as resulting in the conversion of important coastal habitats such as mangroves and peat swamps, which are vital for coastal protection in the onset of climate change. Like the fisheries sector, we need to start incorporating a more sustainable approach to manage the needs of the aquaculture industry while also striving to conserve our coastal habitats and biodiversity.

We need to:

a. Legislate sustainability standards in aquaculture regulations at the State and district levels.

b. Review and strengthen environmental regulations to ensure expansion of aquaculture farms do not encroach, convert, and degrade coastal habitats.

c. Develop and implement a Sustainable Aquaculture Framework that provides policy direction, standards, actions and enablers to transition Malaysia's aquaculture industry towards sustainability.

d. Increase adoption level of Fisheries (Inland Fisheries Aquaculture) Rules at the State Level.

e. Strengthen research advancements to increase aquaculture productivity, maintain ecosystem services and minimise environmental impacts.

f. Provide incentives and technical support to aquaculture farmers in achieving certification under relevant sustainability schemes.

g. Redirect, reform, or eliminate perverse and harmful economic subsidies to facilitate transition towards sustainable aquaculture production.

Key Indicator:
By 2030, the aquaculture sector is contributing towards positive conservation outcomes

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 6:
BY 2030, OUR AGROFOOD, AGRICOMMODITY, AND FISHERIES PRODUCTION ARE MANAGED AND HARVESTED SUSTAINABLY

ACTION 6.4:
STRENGTHEN GENETIC DIVERSITY CONSERVATION OF CULTIVATED PLANTS, FARMED AND DOMESTICATED ANIMALS, AND THEIR WILD RELATIVES

The genetic diversity of our cultivated plants, farmed and domesticated animals, and their wild relatives is a genetic vault of important biological resources that supports human lives. Conservation of this genetic diversity is vital but overlooked many of times. We need to continue improving our awareness and knowledge of genetic diversity and strengthen efforts to ensure sustainable utilisation of these resources in terms of food security.

We need to:

a. Increase awareness on the importance of conserving genetic diversity of wild relatives of cultivated plants as well as farmed and domesticated animals.

b. Develop and implement active management actions for the recovery and conservation of the genetic diversity of cultivated plants, farmed and domesticated animals, and their wild relatives.

c. Incorporate and enforce safeguards into biodiversity prospecting to ensure biological resources in the wild are not depleted.

d. Ensure conservation and sustainable utilisation of other agricultural biodiversity / genetic resources for food and agriculture (GRFA) including microorganisms and insects, as well as the benefits arising from it are shared equitably to all parties [also see Target 14].

e. Ensure nutrition, food security, livelihoods, health, and well-being, particularly for vulnerable communities, are secured through sustainable management of agricultural biodiversity.

Key Indicator:
By 2030, all gene and seed banks, as well as in-situ farms, have been optimised to safeguard genetic diversity of cultivated plants, farmed and domesticated animals, and their wild relatives



GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 7:
BY 2030, THE SYNERGIES BETWEEN TOURISM AND CONSERVATION ARE FULLY REALISED



Sibu Island, Johor

WHY IS THIS TARGET IMPORTANT?

Malaysia's natural habitats are valuable resources for tourism. Ecotourism has been steadily developing as more people are beginning to want to discover natural areas for recreation and vacationing. While it is understandable then that more development will be needed to build the tourism sector, we must still endeavour to minimise impacts towards biodiversity.

MEETING THE TARGET

There are potential synergies between tourism and biodiversity conservation that can be leveraged upon. Ecotourism in particular is defined as travel to natural areas that are being conserved, sustains the well-being of local communities, and involves interpretation and education. These aspects can be leveraged further to utilise tourism as another platform to effectively conserve biodiversity while also continuing the country's development.

Target 7 has 3 Actions:

- **ACTION 7.1:** Promote tourism development that supports biodiversity conservation
- **ACTION 7.2:** Facilitate sustainable tourism certification
- **ACTION 7.3:** Promote community-based tourism and voluntourism

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 7:
BY 2030, THE SYNERGIES BETWEEN TOURISM AND CONSERVATION ARE FULLY REALISED

ACTION 7.1:
PROMOTE TOURISM DEVELOPMENT THAT SUPPORTS BIODIVERSITY CONSERVATION

Sustainable tourism development requires proper planning to ensure that appropriate infrastructure is established in natural sites and have minimal impacts to the natural environment. At the same time, we must also continue to understand how visitor usage impacts our natural habitats and find ways to minimise these impacts. This will safely ensure that tourism activities properly consider biodiversity conservation needs.

We need to:

a. Facilitate private investments and concessions that enable responsible and sustainable ecotourism development.

b. Establish a national community-based ecotourism network to improve collaboration and share best practices between site managers and tourism operators.

c. Ensure science-based design, planning, management, and maintenance of ecotourism sites to limit the impact of tourism on biodiversity.

d. Develop and showcase model ecotourism sites that display synergies between ecotourism and biodiversity conservation.

e. Reposition marine protected areas as ecotourism destinations that champion conservation.

Key Indicator:
By 2030, tourism sites / resorts have been certified under the Global Sustainable Tourism Criteria (GSTC) or similar schemes that demonstrates effective biodiversity conservation in tourism

ACTION 7.2:
FACILITATE SUSTAINABLE TOURISM CERTIFICATION

We want to ensure that our tourism sites have the best management practices and are managed by highly qualified personnel. We must also strive to ensure our tour guides provide high quality interpretation to ensure visitors gain relevant and meaningful knowledge about biodiversity conservation when visiting natural areas. Certification is a means to ensure these criteria are met as a means to synergise tourism development and biodiversity conservation.

We need to:

a. Encourage and support tourism operators to participate in recognised sustainable tourism certification schemes.

b. Develop and implement training programmes and guidelines for tourism managers and operators to meet international tourism standards.

c. Recognise and leverage on existing local guiding programmes to develop local certification schemes.

d. Review the Green Badge programme to incorporate responsible guiding practices and make it more feasible for guides to achieve and renew the certification.

e. Expand the Green Badge programme to include marine interpretation skills and activities.

Key Indicator:
By 2030, all guides for nature-based attractions are certified through accredited schemes

GOALS, TARGETS AND ACTIONS

GOAL 2

WE HAVE SIGNIFICANTLY REDUCED THE DIRECT AND INDIRECT PRESSURES ON BIODIVERSITY

TARGET 7:
BY 2030, THE SYNERGIES BETWEEN TOURISM AND CONSERVATION ARE FULLY REALISED

ACTION 7.3:

PROMOTE COMMUNITY-BASED TOURISM AND VOLUNTOURISM

There also other branches of tourism that have yet to be leveraged upon which also support biodiversity conservation. Community-based tourism can be used as a platform to provide alternative incomes to local communities and indigenous peoples while also empowering them as active stakeholders. We can also advocate our conservation efforts through volunteer programmes for tourists and budding conservationists.

We need to:

a. Engage and empower indigenous peoples and local communities living in and around nature tourism sites as active participants in ecotourism planning and implementation to improve livelihoods and strengthen protection of sites.

b. Promote and support community-based tourism for activities such as agro-tourism, birding, caving, and diving.

c. Develop volunteer placements and internships at ecotourism sites that enable tourists to experience hands-on conservation work.

Key Indicator:

By 2030, the number of indigenous people and local communities actively participating in tourism development has increased by 30% compared to 2024 levels





GOAL 3
WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

Area-based conservation, which includes all forms of protected areas and other effective area-based conservation measures (OECM) remains the ideal way to protect a wide range of species and their habitats in-situ, along with the ecosystems that they constitute. In order for protected areas to deliver their desired outcomes, we must strive to ensure that they are ecologically representative, large enough to support viable populations, optimally designed and managed, are supported by and are beneficial to the indigenous people and local communities, and so forth.

Protected areas and biodiversity conservation as a whole, should be integrated into the management of the larger landscapes and seascapes which they are a part of. Ecological connectivity between habitat patches should be maintained, or re-established where required, through a network of functional ecological corridors. Degraded habitats should be nursed back to health through appropriate restoration techniques. Appropriate strategies should be implemented to enable wildlife to co-exist within agriculture and other shared, or multi-use landscapes. These, and other landscape / seascape conservation approaches will serve to strengthen the resilience of our ecosystems, and ultimately the maintenance of the ecosystem services they provide, which are of immense importance to human life as well. At the species level, our rare, threatened or endemic species, will require extra attention. Dedicated species conservation plans and coordinated actions will be required to avert their extinction and enable the recovery of their populations. Key actions include strengthening monitoring and enforcement to reduce pressures from legal or illegal extractive activities such as commercial fisheries or wildlife poaching, rehabilitating rescued individuals, as well as conducting habitat enrichment activities to bolster their carrying capacity. The genetic diversity of some of our most threatened species that persist within unviable, isolated population, needs to be actively managed by considering all individuals that remain across their range - including both wild and captive - as part of the same meta-population. Conservation breeding programmes shall be required, and in some cases through artificial reproductive technologies.

Above all, our success in conserving our key ecosystems, species, and genetic diversity will depend on our ability to understand and address the root causes of the various pressures that they face. This will require, among others, a rigorous scientific foundation, strong political will, and close collaboration between the multitude of stakeholders that have a role to play.

Goal 3 has 6 targets:

- **TARGET 8:**
  By 2030, at least 20% of terrestrial areas and inland waters, and 10% of coastal and marine areas are conserved through an effectively managed and ecologically representative system of protected areas and other effective area-based conservation measures (OECM)
- **TARGET 9:**
  By 2030, threatened natural ecosystems are sustainably managed and degraded ecosystems are restored
- **TARGET 10:**
  By 2030, important ecological corridors have been secured and ecosystem resilience is enhanced across terrestrial, freshwater, and marine realms
- **TARGET 11:**
  By 2030, targeted management actions are in place to enable the recovery of threatened species
- **TARGET 12:**
  By 2030, poaching, illegal harvesting, and illegal trade of flora and fauna are minimised or significantly reduced
- **TARGET 13:**
  By 2030, measures are in place for the prevention, eradication, containment, and control of invasive alien species



Hawksbill turtles
Eretmochelys imbricata

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 8:
BY 2030, AT LEAST 20% OF TERRESTRIAL AREAS AND INLAND WATERS, AND 10% OF COASTAL AND MARINE AREAS ARE CONSERVED THROUGH AN EFFECTIVELY MANAGED AND ECOLOGICALLY REPRESENTATIVE SYSTEM OF PROTECTED AREAS AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECM)

WHY IS THIS TARGET IMPORTANT?

Protected areas, i.e. geographically-defined areas designated or regulated and managed to achieve specific conservation objectives, play a central role in biodiversity conservation and represent our legacy for future generations. Effectively managed protected areas not only safeguard representative ecosystems, species populations and their habitats. They also contribute towards human health and economic security by mitigating the effects of climate change, safeguarding clean water supply, enhancing food security, reducing disaster risk, alleviating poverty, preserving cultural values, in addition to providing a myriad of other goods and services that healthy ecosystem provide, which society depends on. While Malaysia has a long history and experience in area-based conservation, there is still much scope for protected area expansion across both land and seascapes, and further room for improvement in the way we manage them.



Timimbang Forest Reserve, Sabah

MEETING THE TARGET

We must manage our protected areas effectively; based on science, consistent with global standards and rooted in principles of good governance. We also need to expand the coverage of our protected areas across both land and sea, in order to strengthen the representativeness, connectivity and conservation values of these areas.

Target 8 has 5 Actions:

- **ACTION 8.1:** Strengthen and streamline governance of our protected areas
- **ACTION 8.2:** Enhance management effectiveness of our protected areas
- **ACTION 8.3:** Expand the extent and ecological representativeness of our protected area network
- **ACTION 8.4:** Identify and recognise other effective area-based conservation measures
- **ACTION 8.5:** Increase areas of global importance for biodiversity conservation

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 8:
BY 2030, AT LEAST 20% OF TERRESTRIAL AREAS AND INLAND WATERS, AND 10% OF COASTAL AND MARINE AREAS ARE CONSERVED THROUGH AN EFFECTIVELY MANAGED AND ECOLOGICALLY REPRESENTATIVE SYSTEM OF PROTECTED AREAS AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECM)

ACTION 8.1:
STRENGTHEN AND STREAMLINE GOVERNANCE OF OUR PROTECTED AREAS

Key Indicator:
By 2030, the National Framework for Protected Area has been established and operationalized

Malaysia has a long history of creating protected areas. This has resulted in diverse and complex array of legal and institutional arrangements used to establish and govern protected area across the three regions of Sabah, Sarawak, and Peninsular Malaysia. Irrespective of the different frameworks utilised, we need to ensure that basic principles of good governance, such as transparency, accountability, equity, and inclusiveness, are embedded throughout all of our protected area systems, in order to achieve the desired conservation outcomes and co-benefits.

We need to:

a. Adopt a national definition for protected areas that is in line with international standards and national circumstances.
b. Operationalize national and regional Protected Area Working Groups to strengthen and streamline governance and management of our protected areas.
c. Strengthen and harmonize existing protected area legislation, and create new legislation where required, to meet global best practice standards.
d. Institutionalize protected area information reporting, including but not limited to gazettement and de-gazettement notifications, management plans and management effectiveness assessments through the National Clearing House Mechanism.
e. Update and disseminate the Master List of Protected Areas at least once every five years.

ACTION 8.2:
ENHANCE MANAGEMENT EFFECTIVENESS OF OUR PROTECTED AREAS

Key Indicator:
By 2030, management plans have been established / revised for priority protected areas

"Management effectiveness" is the measure of how well a protected area is being managed, i.e. the extent to which its objectives are met. Key elements of management effectiveness include design and planning (context), management systems (processes), as well as outputs and outcomes. Globally, there has been a significant increase in our understanding of management effectiveness as well as in the availability of the standards, tools and resources available to support this. It is crucial that the management effectiveness of all of our protected areas is enhanced, so that each and every site achieves its full potential and contributes towards conservation in Malaysia.

We need to:

a. Embed management planning, implementation, monitoring and assessment as part of the management process for every protected area.
b. Develop a pool of technical support and resources that can be accessed by protected area authorities for management planning, assessment, and other activities.
c. Conduct management effectiveness assessments on a regular basis and consolidate the findings to identify key areas for improvement at the site and system levels.
d. Develop collaborative ecosystems and/or formal arrangements that enable IPLCs, NGOs, and the private sector to co-manage, support or participate in protected area management.
e. Encourage our best managed protected areas to achieve international certification and recognition.
f. Establish transboundary protected areas and collaboration between neighbouring protected areas across national and state boundaries.

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 8:
BY 2030, AT LEAST 20% OF TERRESTRIAL AREAS AND INLAND WATERS, AND 10% OF COASTAL AND MARINE AREAS ARE CONSERVED THROUGH AN EFFECTIVELY MANAGED AND ECOLOGICALLY REPRESENTATIVE SYSTEM OF PROTECTED AREAS AND OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECM)

ACTION 8.3:
EXPAND THE EXTENT AND ECOLOGICAL REPRESENTATIVENESS OF OUR PROTECTED AREA NETWORK

We need to expand our protected area network across both land and sea, to incorporate further ecosystems and habitats that need protection. We must, for example, increase the coverage of under-represented or threatened ecosystems such as limestone hills, peat swamp forests and seagrass beds, increase prime habitats for endangered species, secure ecological corridors and migratory pathways. In doing so, we need to ensure that these areas are of sufficient size and layout to in order to serve their intended purpose; for instance, large enough to hold viable populations of target species, or wide enough to encompass the full extent of the ecosystems and ecological processes.

Key Indicator:
By 2030, priority sites have been identified with plans in place to be gazetted as protected areas

We need to:

a. Identify priority sites for PA expansion in each state based on key ecological criteria.
b. Work with state governments and other stakeholders towards the gazettal of the identified priority sites.

ACTION 8.4:
IDENTIFY AND RECOGNISE OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES

Other effective area-based conservation measures (OECM) are geographically defined areas beyond the protected area system. While the main objectives of these areas may not be biodiversity conservation, they are governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity. OECM can therefore serve a complementary role to protected areas, contributing to the coherence and connectivity of protected area networks. We must identify, recognise, and support OECM measures, based on appropriate consultation with relevant governance authorities, landowners and rights owners, stakeholders, and the public.

Key Indicator:
By 2030, the national OECM framework has been established and operationalized

We need to:

a. Adopt a national definition for OECMs that is in line with international standards and national circumstances.
b. Identify sites that qualify as other effective area-based conservation measures (OECM) through national-determined criteria that is of a scientific and technical nature.
c. Encourage establishment of OECM sites through appropriate legal recognition, governance measures, and other relevant frameworks.
d. Develop appropriate policy, regulatory and management frameworks that secure and recognise Community Conserved Areas (CCAs) across landscapes and seascapes, as part of the OECM network.

ACTION 8.5:
INCREASE AREAS OF GLOBAL IMPORTANCE FOR BIODIVERSITY CONSERVATION

Malaysia is a party to several multilateral environmental agreements and platforms pertaining to biodiversity conservation, including Convention on Wetlands of International Importance, especially Waterfowl Habitat (RAMSAR) and East Asian-Australasian Flyway Partnership (EAAFP); UNESCO Man and the Biosphere Programme (MAB) and ASEAN Heritage Parks (AHP). Under these platforms, a number of sites have been recognised as important regional and global biodiversity areas. In order to improve the nation's standing in biodiversity management, more should be done to strengthen the conservation of important biodiversity sites through international recognition.

Key Indicator:
By 2030, 2 new sites of biological importance are accorded with international recognition

We need to:

a. Strengthen efforts to pursue recognition of the global importance of Malaysia's biodiversity conservation areas.
b. Actively engage with State governments, research institutions, and relevant stakeholders in nominating potential sites.
c. Enhance management, monitoring and evaluation instruments to maintain and conserve existing areas of international biodiversity interest.
d. Promote exchange of knowledge, learn good management practices, optimise and share resources amongst important regional and global biodiversity sites.

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 9:
BY 2030, THREATENED NATURAL ECOSYSTEMS ARE SUSTAINABLY MANAGED AND DEGRADED ECOSYSTEMS ARE RESTORED



Asian elephant
Elephas maximus

WHY IS THIS TARGET IMPORTANT?

Numerous threatened ecosystems on land and sea remain outside of the protected area network. Such sites face a multitude of disturbances, including conversion for agriculture or aquaculture, infrastructure development, pollution, coastal reclamation, as well as mining and other extractive activities. Similarly, natural habitats located outside of protected areas, that play critical roles in the life cycle of various species, such as breeding or feeding grounds, face the same set of disturbances that lead to their degradation.

The loss and degradation of ecosystems also impairs the goods and services that they provide to human populations. When such ecosystem services are affected, we become much more vulnerable to catastrophic events such as flooding, storm surge, landslides, water supply disruption, and zoonotic diseases; all of which will be exacerbated by climate change.

MEETING THE TARGET

It is important to ensure that all of our ecosystems and habitats are planned and managed in a sustainable manner. Threatened ecosystems must be identified and mapped, with threats and management priorities clearly elaborated. We have to ensure that our ecosystems are better managed and their resilience strengthened. We have to prevent, halt, and reverse the degradation of our ecosystems from anthropogenic drivers.

Target 9 has 3 Actions:

- **ACTION 9.1:**
  Develop ecosystem mapping and vulnerability classification capabilities
- **ACTION 9.2:**
  Restore degraded ecosystems
- **ACTION 9.3:**
  Maintain and enhance ecosystem resilience to disturbance

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 9:
BY 2030, THREATENED NATURAL ECOSYSTEMS ARE SUSTAINABLY MANAGED AND DEGRADED ECOSYSTEMS ARE RESTORED

ACTION 9.1:
DEVELOP ECOSYSTEM MAPPING AND VULNERABILITY CLASSIFICATION CAPABILITIES

Ecosystem vulnerability is the degree to which an ecosystem is susceptible to stress over time and space. It is a function of the exposure to disturbance, sensitivity, and adaptive capacity. The identification of threatened ecosystems is an important tool, reference, and guidance for the management and implementation of the landscape approach towards biodiversity conservation.

We must:

a. Develop maps and standardise methodology to monitor the extent and state of natural ecosystems.
b. Develop maps and standardise methodology to classify and rank threatened natural ecosystems.
c. Integrate the outputs of this analysis into land use planning as well as protected area expansion and restoration planning.

Key Indicator:
By 2030, an ecosystem vulnerability map and ranking has been developed for utilisation

ACTION 9.2:
RESTORE DEGRADED ECOSYSTEMS

Over-intensive use and exploitation of natural resources has led to the degradation of many of our ecosystems. Depending on their inherent condition and other factors, some of these ecosystems will be able to recover with little or no human intervention, while others would need significant effort to enable their recovery.

We must:

a. Identify and prioritize sites for restoration, including ecological corridors and natural ecosystems that have been degraded due to anthropogenic or natural stresses, and ensuring these areas are protected.
b. Facilitate restoration efforts using science-based methodologies appropriate to site-specific conditions and restoration objectives.
c. Strengthen all processes to ensure that the total costs of mitigation and restoration are borne by the parties responsible for the degradation.
d. Prioritize collaborative approaches that enable IPLCs, NGOs and the private sector to participate in restoration projects.
e. Build synergies to collectively assess and enhance national initiatives in restoring degraded ecosystems.

Key Indicator:
By 2030, at least 200,000 ha of degraded sites are being actively restored

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 9:
BY 2030, THREATENED NATURAL ECOSYSTEMS ARE SUSTAINABLY MANAGED AND DEGRADED ECOSYSTEMS ARE RESTORED

ACTION 9.3:
MAINTAIN AND ENHANCE ECOSYSTEM RESILIENCE TO DISTURBANCE

Ecosystem resilience refers to the ability of ecosystems to recover from disturbance. This ability to cope with these disturbances vary as a result of various factors, including the characteristics of the disturbance, level of exposure to the disturbance, as well as the inherent sensitivity and adaptive capacity of each ecosystem. In designing sustainable landscapes and adaptive management systems that maximise ecosystem resilience, ecologists would need to consider three key elements of biodiversity, i.e. composition, structure, and processes.

We must:

a. Enhance landscape ecology research to further develop our understanding of the multi-scale patterns and processes that determine the ecological and spatial resilience of each landscape.
b. Incorporate spatial resilience factors into development of the planning, design and management of protection and production landscapes.
c. Strengthen efforts to monitor and report spatial and temporal changes towards landscapes and seascapes, as well as impacts of anthropogenic activities and climate change.

Key Indicator:
By 2030, adaptive management actions have been established and implemented to address disturbances in threatened natural ecosystems



Ariel view of Dipterocarp Forest, Sarawak

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 10:
BY 2030, IMPORTANT ECOLOGICAL CORRIDORS HAVE BEEN SECURED AND ECOSYSTEM RESILIENCE IS ENHANCED ACROSS TERRESTRIAL, FRESHWATER, AND MARINE REALMS



Sunbear
Helarctors malayanus

WHY IS THIS TARGET IMPORTANT?

In ecological terms, "connectivity" refers to the degree to which species are able to move freely, and key biological processes such as breeding and seed dispersal, are able to occur unimpeded, across landscapes and seascapes. Unfortunately, our landscapes and seascapes are becoming increasingly fragmented due to development, resulting in habitat fragmentation, or the loss of connectivity. This loss of connectivity has serious implications on biodiversity. When a habitat is fragmented into smaller and smaller patches, the remnant populations within each patch would become increasingly unviable - the gene pool would become too limited, making the population vulnerable to inbreeding and disease, ultimately causing local extinction. Maintaining landscape and seascape connectivity is especially crucial in the face of climate change, in order to maximise the likelihood that species are able to adequately shift their geographic ranges in response to changes in temperature or other environmental conditions.

MEETING THE TARGET

We need to design and mitigate future development with biodiversity in mind, to ensure that key conservation landscapes across both the terrestrial and marine realms remain as sizeable and connected. We need to maintain and re-establish ecological connectivity between the most important habitats, in particular our protected areas as well as other important sites for biodiversity. Malaysia has made significant progress in landscape and seascape level conservation initiatives such as the Central Forest Spine (CFS), the tri-lateral Heart of Borneo (HoB) initiative and the 6-nation Coral Triangle Initiative (CTI) which aim to integrate biodiversity protection and management across broad landscape and seascapes.

Target 10 has 3 Actions:

- **ACTION 10.1:** Strengthen the implementation of the Central Forest Spine (CFS) Master Plan in Peninsular Malaysia
- **ACTION 10.2:** Strengthen terrestrial connectivity in Sabah and Sarawak
- **ACTION 10.3:** Strengthen marine ecological connectivity

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 10:
BY 2030, IMPORTANT ECOLOGICAL CORRIDORS HAVE BEEN SECURED AND ECOSYSTEM RESILIENCE IS ENHANCED ACROSS TERRESTRIAL, FRESHWATER, AND MARINE REALMS

ACTION 10.1:
STRENGTHEN THE IMPLEMENTATION OF THE CENTRAL FOREST SPINE (CFS) MASTER PLAN IN PENINSULAR MALAYSIA

The forest complexes that make up the Central Forest Spine (CFS) landscape encompass the bulk of Peninsular Malaysia's forest ecosystems and wildlife habitats. The CFS also serves as a critical life support system, providing up to 90% of Peninsular Malaysia's water supply. The CFS Masterplan for Ecological Linkages provides a comprehensive framework for enhancing ecological connectivity within and between the four forest complexes. The Masterplan has since been reviewed in terms of implementation strategies, as well as re-prioritizing and securing critical corridors for another implementation term.

We need to:

a. Secure and manage primary and secondary linkages identified in the revised CFS Master Plan (PIRECFS 2022).
b. Maintain, restore, and enhance structural connectivity within the forest complexes.
c. Organise regular CFS conferences and seminars in order to share updates and garner support amongst stakeholders and the general public.
d. Upgrade the forest conservation status of linkages into higher protection status.

Key Indicator:
By 2030, 10 primary corridors under the CFS initiative are being actively protected and managed

ACTION 10.2:
STRENGTHEN TERRESTRIAL ECOLOGICAL CONNECTIVITY IN SABAH AND SARAWAK

The Heart of Borneo (HoB) is a voluntary trans-boundary initiative that aims to conserve and manage approximately 200,000 km^2 of ecologically inter-connected rainforest that straddles the borders of Brunei Darussalam, Indonesia, and Malaysia. Restoring ecological connectivity is a key component of the HoB initiative.

We need to:

a. Secure and manage key ecological corridors in Sabah and Sarawak.
b. Maintain, restore, and enhance structural connectivity within the forest complexes.
c. Organise an annual HoB conference in order to share updates and garner support amongst stakeholders and the general public.

Key Indicator:
By 2030, there is a 10% increase of protected areas within the HoB

ACTION 10.3:
STRENGTHEN MARINE ECOLOGICAL CONNECTIVITY

Connectivity is also important in marine ecosystems, to ensure that the natural movement and migratory patterns of marine species including fish, turtles, and marine mammals (e.g., dolphins and whales), are able to take place unimpeded at various stages of their life or reproductive cycles. If a natural complement of marine biota is to be managed effectively, it is important not just to save species but also to protect their migratory and movement pathways. In expanding marine protected areas in Malaysia, there is also an urgent need to identify and protect important marine ecological corridors.

We need to:

a. Secure and manage the marine ecological corridors off the coast of Peninsular Malaysia.
b. Secure and manage marine ecological corridors off the coast of Sabah and Sarawak.
c. Organise an annual conference on marine conservation, including protected areas and corridors to share updates and garner support amongst stakeholders and the general public.

Key Indicator:
By 2030, marine ecological corridors are actively protected and managed at the national and transboundary levels



Matang Mangrove Forest Reserve, Kuala Sepetang, Perak

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 11:
BY 2030, TARGETED MANAGEMENT ACTIONS ARE IN PLACE TO ENABLE THE RECOVERY OF THREATENED SPECIES



Malayan Tiger
Panthera tigris jacksonii

WHY IS THIS TARGET IMPORTANT?

Many of our native species on both land and sea, continue to face multiple pressures. This includes habitat loss and degradation, over-fishing, poaching, illegal harvesting, invasive alien species and human-wildlife conflict. As a result, many populations have long been on a downward trend. To make matters worse, the impending impacts of climate change, while not yet well known, are likely to be significant. Even slight variations in climactic conditions, including a rise in sea or atmospheric temperatures can lead to complex, multiplying impacts on the phenology and biological cycles of species and ecosystems.

Some species have already become locally extinct, and further extinctions are foreseeable, especially in the case of our most threatened species as well as our endemic species that have only a restricted geographical range. Small, isolated populations are likely to be genetically unviable over the long term, due to low fitness levels as a result of inbreeding. Reversing these downward trends and managing the extinction risk is crucial, especially for species on the brink, that are caught in the extinction vortex.

MEETING THE TARGET

Aside from reducing external pressures from legal or illegal extractive activities such as commercial fisheries or wildlife poaching, the utilisation of evidence-based and scientifically-sound, targeted and coordinated conservation actions is absolutely crucial for the recovery of our most threatened species.

Target 11 has 5 Actions:

- **ACTION 11.1:** Implement targeted, science-led actions for species conservation
- **ACTION 11.2:** Adopt a metapopulation approach for our most threatened species
- **ACTION 11.3:** Enhance technical capacity for ex-situ conservation
- **ACTION 11.4:** Adopt scientific and co-existence approaches to address human-wildlife conflicts
- **ACTION 11.5:** Strengthen conservation of migratory species

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 11:
BY 2030, TARGETED MANAGEMENT ACTIONS ARE IN PLACE TO ENABLE THE RECOVERY OF THREATENED SPECIES

ACTION 11.1:
IMPLEMENT TARGETED, SCIENCE-LED ACTIONS FOR SPECIES CONSERVATION

It is important that conservation actions, plans and programmes are developed through consensus with the scientific community and based on the best available science. This would entail strategic and long-term monitoring of biodiversity, done collaboratively to share data and avoid duplication. It is also important that we are able to deploy the best available science and technology in the implementation of conservation actions.

We must:

a. Enhance collaboration to monitor and share data on threatened species populations using appropriate techniques and technology.
b. Conduct conservation assessments to develop or update national lists of threatened species.
c. Study and monitor the impacts of climate change on threatened species.
d. Formulate, update, and implement science-based conservation action plans for our most threatened species.
e. Update the National Red Data List for threatened plants and wildlife .

Key Indicator:
By 2030, conservation and recovery plans for critically endangered plants and wildlife are in place

ACTION 11.2:
ADOPT A METAPOPULATION APPROACH FOR OUR MOST THREATENED SPECIES

Our most threatened species that persist within isolated, unviable populations, need to be managed proactively by considering all individuals that remain across their range - including both wild and captive - as part of a larger meta-population. Factors such as genetic flow, exchange, and enrichment need to be incorporated when and where necessary.

We must:

a. Work towards incorporating a metapopulation approach that integrates the management of wild and captive populations.
b. Carry out science-based and targeted translocations between different populations of threatened species, in order to reduce the risk of inbreeding inherent in small populations.
c. Establish new populations in habitats that are viable for the particular threatened species, based on criteria such as habitat size, suitability, protection status, and threat levels.

Key Indicator:
By 2030, targeted actions to conserve threatened plants and wildlife have been established

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 11:
BY 2030, TARGETED MANAGEMENT ACTIONS ARE IN PLACE TO ENABLE THE RECOVERY OF THREATENED SPECIES

ACTION 11.3:
ENHANCE TECHNICAL CAPACITY FOR EX-SITU CONSERVATION

While it may be ideal to conserve species in their natural habitats, we must acknowledge that not all species are guaranteed to persist under current conditions in-situ. Small populations within isolated habitats, may suffer insufficient birth rates due to inbreeding, sub-optimal habitat conditions, lack of mates, and other factors. In the most extreme cases, conservation breeding programmes will be required, including through artificial reproductive technologies, in order to boost birth rates. Plant and animal genetic and reproductive material must be stored for future use. In short, ex-situ conservation must become a big part of our insurance policy in the coming years.

We must:

a. Strengthen standards and monitoring to ensure that zoos, wildlife parks, and aquaria safeguard animal welfare and support conservation.
b. Enhance collaborative conservation breeding programmes where appropriate, using specialised breeding facilities and technology to increase birth rates.
c. Strengthen national, regional and international cooperation to share resources, technical expertise, and genetic material.
d. Enhance seed and germplasm gene banks for plants, animals, fungi, and microorganisms.
e. Enhance the Malaysian network of botanic gardens in terms of their scope and collaborative programmes.
f. Expand living collections of rare, threatened and endangered plants, to produce planting material for restoration projects.
g. Enhance trials to bring species of horticultural or medicinal value into cultivation to reduce pressure on wild populations.

Key Indicator:
By 2030, 10 ex-situ conservation centres are actively contributing in species rescue and recovery programmes

ACTION 11.4:
ADOPT SCIENTIFIC AND CO-EXISTENCE APPROACHES TO ADDRESS HUMAN-WILDLIFE CONFLICTS

As our own population expands, competition with wildlife for limited space and resources will grow. This is likely to lead to more human-wildlife conflicts, to the detriment of both human and wildlife alike. For humans, the impacts may include damage to crops, livestock, and property, as well as the occasional loss of life. On the other hand, defensive and retaliatory killings as well as other mitigation measures implemented, are liable to have serious long term implications on wildlife populations. We need to find better ways to deal with this complex issue, in order to coexist with wildlife.

We must:

a. Establish collaborative partnerships between plantation companies, smallholders, IPLCs, and researchers to develop and implement holistic and science-based adaptive management strategies to reduce and mitigate human-wildlife conflicts in agriculture landscapes.
b. Scale-up outreach and education programmes for key stakeholders including local governments and local communities to reduce and mitigate human-wildlife conflicts in urban areas.
c. Review relevant legislation to incorporate regulations pertaining to safe, ethical, and humane human-wildlife interactions.

Key Indicator:
By 2030, human-wildlife conflict reduction approaches / strategies have been formulated

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 11:
BY 2030, TARGETED MANAGEMENT ACTIONS ARE IN PLACE TO ENABLE THE RECOVERY OF THREATENED SPECIES

ACTION 11.5:
STRENGTHEN CONSERVATION OF MIGRATORY SPECIES

Species migration is an important natural occurrence that enables the use of resources that are only available at a particular place and time. Migratory species can be found in all major groups of animals across land and sea. They typically travel over long distances, often crossing domestic and international boundaries, along their gruelling and perilous journeys. Human activities at various points of their migration pathways have affected many migratory species populations, and conservation measures often require international cooperation.

We must:

a. Scale-up research and monitoring of migratory species, including their migratory pathways and stopover sites.
b. Incorporate research and monitoring outputs, and important sites for migratory species into spatial planning and area-based conservation measures.
c. Review wildlife legislation to ensure that rare, threatened and endangered migratory species are legally protected.
d. Enhance regional cooperation on migratory species.

Key Indicator:
By 2030, identification, establishment, and recognition of migratory sites for conservation has increased



Malayan Pangolin
Manis javanica

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 12:
BY 2030, POACHING, ILLEGAL HARVESTING, AND ILLEGAL TRADE OF FLORA AND FAUNA ARE MINIMISED OR SIGNIFICANTLY REDUCED

WHY IS THIS TARGET IMPORTANT?

Wildlife crime is a serious global issue, and Malaysia is not spared from it, being both a source and transit country for trafficked wildlife products. Regional demand exerts poaching pressure on our highly-prized native species such as tigers, pangolins, sun bears, and gaharu, while there is also a significant amount of trade of songbirds such as the white-rumped shama as well as turtle eggs. Domestically, poaching is driven by local markets for wild meat and traditional medicine, as well as the pet and aquarium trade. Seizures by the Royal Malaysian Customs show that our ports are used by international organised crime networks for the transit of high value items that originate from other countries, including ivory and rhino horns as well as reptiles and testudines.



MEETING THE TARGET

Our wildlife protection agencies in Peninsular Malaysia, Sabah, and Sarawak, in collaboration with other law enforcement agencies, as well as international and local NGOs, have made great strides in disrupting poaching and trading networks. However, there is still much room for improvement. Although a significant number of offenders have been arrested and convicted, in most cases those convicted only play minor roles in the criminal networks, whereas the kingpins are rarely brought to justice. Going forward, enhancing coordination, information and skill sharing between the various wildlife protection agencies and other enforcement authorities as well as with other stakeholders, is crucial for success.

Target 12 has 4 Actions:

- **ACTION 12.1:** Combat poaching and illegal harvesting of wild flora and fauna
- **ACTION 12.2:** Combat illegal trade of wild flora and fauna
- **ACTION 12.3:** Reduce demand through public outreach and behavioural change
- **ACTION 12.4:** Strengthen legislation and institutional arrangements for species protection

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 12:
BY 2030, POACHING, ILLEGAL HARVESTING, AND ILLEGAL TRADE OF FLORA AND FAUNA ARE MINIMISED OR SIGNIFICANTLY REDUCED

ACTION 12.1:
COMBAT POACHING AND ILLEGAL HARVESTING OF WILD FLORA AND FAUNA

We have to strengthen collaborative efforts in all aspects of monitoring and enforcement, including investigation and prosecution, to minimise the occurrence of poaching or illegal extraction of wild animals, fish, and plants from both land and sea.

We need to:

a. Expand and strengthen the collaborative ecosystems required for effective patrolling, monitoring, and enforcement within each terrestrial and marine landscape.

b. Expand and strengthen programmes to hire IPLCs as well as retired police and army personnel as patrollers.

c. Enhance support for patrollers, in terms of financial compensation and protection, personal safety, as well as training and equipment.

d. Use appropriate technology, including remote surveillance, monitoring, and reporting tools to enable data-driven and intelligence-led adaptive management of patrolling and enforcement.

e. Develop investigative and forensics capacities with the Royal Malaysia Police in order to improve the prosecution and conviction rates of poachers and traders.

f. Revive the ASEAN Wildlife Enforcement Network for Malaysia with specific focus on combatting poaching and illegal harvesting with neighbouring countries.

Key Indicator:
By 2030, collaborative efforts to combat poaching and illegal harvesting have increased by 50% compared to 2024 levels

ACTION 12.2:
COMBAT ILLEGAL TRADE OF WILD FLORA AND FAUNA

We have to strengthen collaborative efforts, building on the combined strengths of a wide range of national and international agencies in order to enhance our technical capacity to effectively tackle international wildlife trafficking syndicates. This includes embarking on investigation on money laundering across the trade chain.

We need to:

a. Establish joint engagement platforms with relevant enforcement authorities to develop mitigation measures along all points of the illegal trade chain.

b. Work with online and social media platforms, telecommunications service providers, and relevant agencies, to adopt a "zero tolerance" policy against the online sale of wildlife and to detect criminals involved in such activities.

c. Conduct more rigorous assessments of traditional medicine products being imported/licensed, particularly those containing or claiming to contain wildlife products.

d. Improve the detection of illegal shipments through systematic and regular monitoring using enhanced equipment and techniques.

e. Conduct intelligence-led and in-depth investigations, into international and locally based operators, as well as money laundering along the trade chains.

Key Indicator:
By 2030, illegal import and export of wild flora and fauna has reduced compared to 2024 levels

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 12:
BY 2030, POACHING, ILLEGAL HARVESTING, AND ILLEGAL TRADE OF FLORA AND FAUNA ARE MINIMISED OR SIGNIFICANTLY REDUCED

ACTION 12.3:
REDUCE DEMAND THROUGH PUBLIC OUTREACH AND BEHAVIOURAL CHANGE

Changing the mindsets and behaviour of Malaysian consumers is an important long-term solution to the problem. So long as there is demand for traditional medicine based on wildlife derivatives, turtle eggs, or exotic pets, for example, there will be poaching and trade.

We need to:

a. Conduct in-depth research to better understand consumer behaviour in order to develop behaviour change approaches to reduce demand.

b. Work with civil society organisations to harness public participation initiatives to support law enforcement, such as through hotlines or technology applications for reporting suspected incidences of poaching, illegal harvesting, and trafficking;

c. Collaborate with a range of businesses including restaurants, pet shops, aquarium traders, and traditional medicine practitioners to remove rare, threatened and endangered species and their derivatives from the supply chain.

Key Indicator:
By 2030, the public awareness and understanding of poaching and illegal trade has increased by 20% from 2018 levels

ACTION 12.4:
STRENGTHEN LEGISLATION AND INSTITUTIONAL ARRANGEMENTS FOR SPECIES PROTECTION

The present array of biodiversity legislation and institutional frameworks in Malaysia provide a strong foundation for species protection and conservation. However, there are some systemic issues that still need to be addressed. This includes harmonizing wildlife legislation across the three regions, and resolving the gaps inherent in the protection of marine species.

We must:

a. Harmonize and update primary wildlife laws in Peninsular Malaysia, Sabah, and Sarawak, in order to close out any loopholes and to address emerging trends.

b. Review legislation and institutional frameworks to effectively address the conservation and protection of marine and freshwater biodiversity.

c. Review other regulations of industries related to wildlife trade chain.

Key Indicator:
By 2030, relevant laws and regulations have been reviewed to eradicate poaching, illegal trade, and other related crimes

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 13:
BY 2030, MEASURES ARE IN PLACE FOR THE PREVENTION, ERADICATION, CONTAINMENT AND CONTROL OF INVASIVE ALIEN SPECIES



WHY IS THIS TARGET IMPORTANT?

Invasive alien species (IAS) are non-native plants, animals, pathogens, and other organisms that cause severe damage to the ecosystems that they are introduced into. As they may lack natural predators in their new environments, IAS are typically able to multiply and colonise new habitats rapidly. Through competition, predation, or transmission of pathogens, IAS can cause the decline or local extinction of native species and disruption of ecosystem functions, sometimes with serious impacts on ecosystem services and human health. The Nile tilapia (Oreochromis niloticus) for example, is an important food fish that has devastated aquatic ecosystems worldwide through unintentional escapes from fish farms. This fast-growing, highly adaptable species that feeds on almost anything, has damaged the ecosystems of many rivers in Malaysia, to the point of driving the local extinction of native fish and invertebrates.

MEETING THE TARGET

Many of our ecosystems, including rivers, lakes, coral reefs, and degraded forest edges have already been affected by IAS. In such cases, we need to prevent the IAS from spreading further, and ultimately, eradicate it from the particular ecosystem. At the same time, safeguards must be strengthened to prevent the further introduction of IAS, including their import, cultivation and release. The actions outlined below are based on the National Action Plan on Invasive Alien Species (NAP IAS) 2021-2025, which provides a framework for the identification, prioritisation, and prevention of the introduction and establishment of IAS in Malaysia.

Target 13 has 3 Actions:

- **ACTION 13.1:**
  Improve understanding and public awareness of IAS
- **ACTION 13.2:**
  Initiate response plans to contain and eradicate IAS
- **ACTION 13.3:**
  Control and prevent the entry and release of IAS

GOALS, TARGETS AND ACTIONS

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 13:
BY 2030, MEASURES ARE IN PLACE FOR THE PREVENTION, ERADICATION, CONTAINMENT AND CONTROL OF INVASIVE ALIEN SPECIES

ACTION 13.1:
IMPROVE UNDERSTANDING AND PUBLIC AWARENESS OF IAS

It is important that we enhance our scientific understanding of the biology, pathways, and impacts of IAS, as this would enable us to incorporate more effective measures to prevent, detect, monitor, contain and eradicate IAS. An important element in reducing the spread of IAS is public awareness. While IAS is a major threat to biodiversity worldwide, it is not a highly visible threat as compared to forest conversion, for example. As such, release of IAS into natural ecosystems - both unintentionally and intentionally - continues to occur.

We need to:

a. Increase research in all aspects of IAS management including understanding their pathways and ecological impacts and develop technologies to contain and control IAS.
b. Educate the public on the threats posed by invasive alien species and the problems caused by smuggling of wild animals and plants, accidental imports, escapes from legitimate enterprises and the pet trade, and pathogen exposure.
c. Strengthen information sharing and extension services to stakeholders so that prevention, control, eradication, and mitigation efforts on IAS can be effectively implemented.

Key Indicator:
By 2030, public awareness levels regarding IAS has increased compared to 2024 levels

ACTION 13.2:
INITIATE RESPONSE PLANS TO CONTAIN AND ERADICATE IAS

We need to implement all of the actions outlined in the National Action Plan on Invasive Alien Species (NAP IAS) 2021-2025, as well as monitor and review its implementation. In terms of safeguarding our native species, additional priority must be placed on removing IAS that have already invaded and disrupted our natural ecosystems.

We must:

a. Establish a formal and transparent mechanism to ensure that all alien species are subject to a rigorous risk assessment.
b. Establish response plans and the capacity to contain and eradicate potential invasive species, including pathogens, by at least 50% in 2030.
c. Identify natural ecosystems most affected by IAS and develop collaborative programmes to eradicate the IAS from these ecosystems by at least 50% in 2030.
d. Strengthen and monitor the implementation of the National Action Plan on IAS 2021-2025.

Key Indicator:
By 2030, targeted IAS response plans have been established to guide containment and eradication activities

GOAL 3

WE HAVE SAFEGUARDED ALL OUR KEY ECOSYSTEMS, SPECIES, AND GENETIC DIVERSITY

TARGET 13:
BY 2030, MEASURES ARE IN PLACE FOR THE PREVENTION, ERADICATION, CONTAINMENT AND CONTROL OF INVASIVE ALIEN SPECIES

ACTION 13.3:
CONTROL AND PREVENT THE ENTRY AND RELEASE OF IAS

We need to strengthen our capabilities to control and prevent the entry of IAS through our international borders, and subsequently the release of IAS into our ecosystems. We need to improve the quarantine and inspection facilities and capabilities of border officials, to control and prevent the entry of IAS including noxious plants, plant pests, animals, and fish, as well as microorganisms and pathogens hidden in agricultural produce, food and soils, and from the shipping industry.

We need to:

a. Enhance the enforcement of legislation on the importing, trading, keeping and release of wild animals, fishes and plants, and strengthen legislation where necessary.
b. Harmonize the list of IAS and enforcement between Peninsular Malaysia, Sabah, and Sarawak.
c. Adopt relevant provisions of international conventions that Malaysia is party to in relation to management and control of IAS, for example the International Maritime Organisation (IMO) and the International Plant Protection Convention (IPPC).
d. Enhance quarantine facilities and improve the skills and capabilities of quarantine, customs, and other border officials.

Key Indicator:
By 2030, control measures are in place to prevent entry of new IAS and plans are in place to minimise the spread of existing IAS in the country

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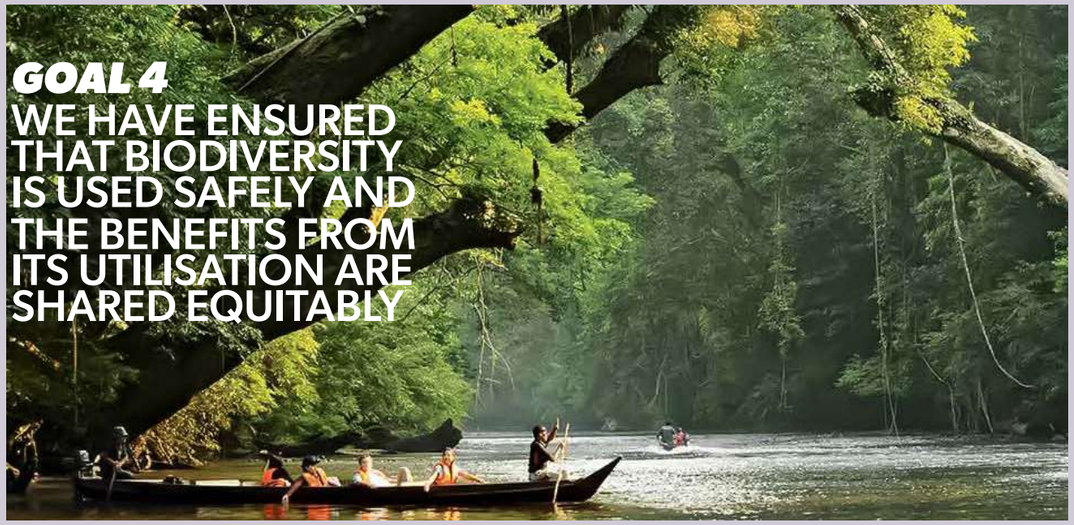
GOALS, TARGETS AND ACTIONS



Our biological diversity is a considerably free and open resource to be used by all Malaysians. However, we need to ensure that benefits arising from the utilisation of biological diversity are shared in a fair and equitable manner. In line with the Nagoya protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation, Malaysia has already institutionalised its Access-Benefit Sharing (ABS) Framework through the gazettement of the Access to Biological Resources and Benefit Sharing Act 2017.

We need to continue working with relevant stakeholders, including the indigenous people, to effectively protect the knowledge, innovations and practices that arise from sustainable use of biological resources. While increasing documentation of this body of knowledge, we also need strengthen customary laws, community protocols and other similar unique systems.

Being a party to the CBD and the Cartagena Protocol on Biosafety (CPB), Malaysia is obliged to take necessary measures to prevent or reduce potential adverse impacts from modern biotechnology using the precautionary principle. Through the implementation of the Biosafety Act 2007, Malaysia has enabled the opportunity to derive the maximum benefit from the potential that modern biotechnology has to offer, while ensuring that a comprehensive biosafety system is in place to ensure prevention and mitigation of any threats of irreversible damage from Living Modified Organisms (LMO) and its products.

We also need ensure that the advancements in modern biotechnology are conducted in a safe manner and do not result in adverse impacts towards our human, plant and animal health, the environment and biological diversity. This entails strengthening our biosafety systems involving all activities related to LMO and its products by having a holistic and robust impact assessment, effective monitoring and enforcement to ensure biosafety compliance and preparedness of any biosafety emergencies involving LMO and its products.

Goal 4 has 2 targets:

- **TARGET 14:**
  By 2030, Malaysia has enhanced its capacity to implement the Access and Benefit-Sharing (ABS) Framework to realise the Fair and Equitable Sharing of Benefits Arising from their Utilisation
- **TARGET 15:**
  By 2030, a comprehensive biosafety system is operational to manage potential and adverse impacts of modern biotechnology on human, plant and animal health, the environment, and biological diversity

GOAL 4

WE HAVE ENSURED THAT BIODIVERSITY IS USED SAFELY AND THE BENEFITS FROM ITS UTILISATION ARE SHARED EQUITABLY

TARGET 14:
BY 2030, MALAYSIA HAS ENHANCED ITS CAPACITY TO IMPLEMENT THE ACCESS AND BENEFIT-SHARING (ABS) FRAMEWORK TO REALISE THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING FROM THEIR UTILISATION

WHY IS THIS TARGET IMPORTANT?

Access and Benefit-Sharing (ABS) are a set of rules and principles that govern the use of biological resources including information related to genetic resources such as digital sequence information (DSI), i.e., on how they can be accessed and how users and providers come into a mutual understanding on fair and equitable sharing of benefits that may arise from its utilisation. ABS is becoming increasingly important in biodiversity conservation because we need to ensure that the methods used to access and utilise biological resources maximizes the benefits everyone, while also conserving these resources. Where biological resources are accessed using traditional knowledge from indigenous people and local communities, we must ensure that proper permissions are obtained through Prior Informed Consent (PIC), as well as to share its benefits so that this oral information is not misused for personal gain.



MEETING THE TARGET

As a signatory to the Nagoya Protocol, Malaysia has already taken its first steps towards establishing an ABS framework through the Access to Biological Resources and Benefit Sharing Act 2017. The next phase of work is to fully operationalise our ABS framework. This will require extensive capacity building of competent agencies, as well as increasing the general awareness of ABS throughout the country. Furthermore, we will also need to continuously engage with the indigenous people and local communities to be active participants in developing our ABS framework.

Target 14 has 2 Actions:

- **ACTION 14.1:**
  Enhance awareness and capacities to implement ABS
- **ACTION 14.2:**
  Document and protect the traditional knowledge, innovations, and practices of indigenous and local communities

GOALS, TARGETS AND ACTIONS

GOAL 4

WE HAVE ENSURED THAT BIODIVERSITY IS USED SAFELY AND THE BENEFITS FROM ITS UTILISATION ARE SHARED EQUITABLY

TARGET 14:
BY 2030, MALAYSIA HAS ENHANCED ITS CAPACITY TO IMPLEMENT THE ACCESS-BENEFIT SHARING (ABS) FRAMEWORK TO REALISE THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING FROM THEIR UTILISATION

ACTION 14.1:
ENHANCE AWARENESS AND CAPACITIES TO IMPLEMENT ABS

The general awareness of ABS is generally low. In order for our ABS framework to be effective, we must continue to familiarise all stakeholders to the principles of ABS. We must also build the capacities of agencies, indigenous peoples, and local communities in implementing ABS regulations and laws.

We need to:

a. Strengthen institutional and legal capacities to enforce and operationalise the ABS framework at the State level.

b. Increase awareness and knowledge of ABS to users and providers of biological resources through targeted outreach programmes, training modules, and digital tools.

c. Strengthen literacy of indigenous peoples and local communities on rights to traditional knowledge to facilitate ABS implementation.

d. Establish effective communication channels between regulating agencies and rights-holders in implementing ABS protocols.

Key Indicator:
By 2030, the public awareness levels on ABS has increased compared to 2024 levels

ACTION 14.2:
DOCUMENT AND PROTECT THE TRADITIONAL KNOWLEDGE, INNOVATIONS, AND PRACTICES OF INDIGENOUS AND LOCAL COMMUNITIES

Protection of the knowledge, innovations, and practices of indigenous peoples and local communities means that we recognise the rights of these groups towards certain biological resources through customary laws and community protocols. As such, there is a need for clear guidelines to enable external actors to meaningfully engage with the full and effective participation of the respective indigenous peoples and local communities, thus ensuring that rights-holders are respected and benefits returned appropriately.

We need to:

a. Enhance documentation of traditional knowledge, innovations, and practices of IPLCs.

b. Recognise and support customary laws, community protocols, procedures, and other similar systems that are used by IPLCs.

c. Integrate traditional knowledge associated with the utilisation of biological resources of IPLCs into the National Clearing House Mechanism.

Key Indicator:
By 2030, registries on traditional knowledge, innovation, and practices have been enriched

GOAL 4

WE HAVE ENSURED THAT BIODIVERSITY IS USED SAFELY AND THE BENEFITS FROM ITS UTILISATION ARE SHARED EQUITABLY

TARGET 15:
BY 2030, A COMPREHENSIVE BIOSAFETY SYSTEM IS OPERATIONAL TO MANAGE POTENTIAL AND ADVERSE IMPACTS OF MODERN BIOTECHNOLOGY ON HUMAN, PLANT AND ANIMAL HEALTH, THE ENVIRONMENT, AND BIOLOGICAL DIVERSITY

WHY IS THIS TARGET IMPORTANT?

Modern biotechnology continues to grow rapidly both globally and locally embracing recent advancements through emerging technologies such as synthetic biology and genome editing. Advancements in these emerging technologies have resulted in its products being commercialized and available in the global market and may enter the Malaysian market. Malaysia has invested substantial resources to continue to use modern biotechnology in various fields of research to develop LMO and its products. Some of this work has shown significant progress which have advanced from laboratory to field testing. While these advancements obviously have some form of intended benefits for humans, it is also crucial that LMO and its products from modern biotechnology and emerging technologies are developed and handled and used safely without causing adverse impacts to the ecosystem and our natural biological resources when released.



Raffles' pitcher-plant
Nepenthes rafflesiana

MEETING THE TARGET

We have to ensure that LMO and its products, including the use of emerging technologies, do not present unacceptable risks to human, animal and plant health, the environment and biological diversity. A robust ex ante risk and socio-economic impact assessment will provide a strong basis to make decisions about LMO and its products. Proper safeguards are thus required while handling LMO and products of LMO. Therefore, it is important to have a strong monitoring and detection biosafety system that is able to ensure biosafety compliance. Preparedness is an important component of a strong biosafety system with the development of adequate responses for any biosafety emergencies involving LMO and its products supported by a legal framework for liability and redress. We also need to continuously build capacities in compliance monitoring, as well as improve compliance and risk management mechanisms and protocols.

Target 15 has 3 Actions:

- **ACTION 15.1:**
  Strengthen enforcement inspection and biosafety compliance
- **ACTION 15.2:**
  Strengthen impact assessment of Living-Modified Organisms (LMOs) and its products on human, plant and animal health, the environment, and biological diversity
- **ACTION 15.3:**
  Develop adequate responses to biosafety emergencies involving Living-Modified Organisms (LMOs) and its products and mechanisms to address liability and redress

GOALS, TARGETS AND ACTIONS

GOAL 4

WE HAVE ENSURED THAT BIODIVERSITY IS USED SAFELY AND THE BENEFITS FROM ITS UTILISATION ARE SHARED EQUITABLY

TARGET 15:
BY 2030, A COMPREHENSIVE BIOSAFETY SYSTEM IS OPERATIONAL TO MANAGE POTENTIAL AND ADVERSE IMPACTS OF MODERN BIOTECHNOLOGY ON HUMAN, PLANT AND ANIMAL HEALTH, THE ENVIRONMENT, AND BIOLOGICAL DIVERSITY

ACTION 15.1:
STRENGTHEN ENFORCEMENT INSPECTION AND BIOSAFETY COMPLIANCE

Malaysia already has well-developed regulatory and enforcement systems in place with various guidelines and protocols to manage potential risks associated with LMO and its products. However, these systems, guidelines and protocols need to be expanded, updated, and improved in line with the rapid progress of emerging technologies to further safeguard our human, plant and animal health, the environment, and biological diversity. Coordination and cooperation between stakeholders are vital to ensure biosafety compliance.

We need to:

a. Strengthen coordination and cooperation in relation to enforcement and regulatory functions of various agencies related to living-modified organisms (LMOs).
b. Strengthen implementation of regulatory mechanisms and develop procedural guidelines for monitoring and enforcement.
c. Incorporate biosafety principles into sectoral policies, particularly in the agriculture and health sectors.
d. Increase the number and capacity of laboratories that can detect and identify LMOs and its products.
e. Strengthen network of laboratories for identification and detection of LMOs and its products.

Key Indicator:
By 2030, a systematic procedure for safe handling, transport, packaging detection, and identification of LMOs and its products is operational

ACTION 15.2:
STRENGTHEN IMPACT ASSESSMENTS OF LIVING-MODIFIED ORGANISMS (LMOs) AND ITS PRODUCTS ON HUMAN, PLANT AND ANIMAL HEALTH, THE ENVIRONMENT, AND BIOLOGICAL DIVERSITY

We need to advance our understanding of the impacts of LMOs and its products towards human, plant and animal health, the environment and biological diversity. This is crucial to develop and implement necessary safeguards as precautionary measures. A feasible mechanism for the inclusion of socio-economic considerations in relevant decision making provides a more comprehensive analytical framework. In keeping up with the rapid progress of modern biotechnology and emerging technologies, continuous efforts to enhance capacity and guidance for risk assessment, management and communication is essential.

We need to:

a. Enhance capacity and guidance for risk assessment, management, and communication for LMOs and its products resulting from modern biotechnology including emerging technologies such as synthetic biology.
b. Increase biosafety related research such as environmental impacts and safety studies for LMOs and its products (including locally developed LMOs and those developed from emerging technologies) to strengthen risk assessment, monitoring, and enforcement activities.
c. Establish a mechanism for socio-economic impact assessment and integrate socio-economic considerations into relevant decision-making.

Key Indicator:
By 2030, a comprehensive analytical framework is established that incorporates a robust risk assessment, management, and socio-economic considerations in the decision-making process on applications for release of LMOs and its products

GOAL 4

WE HAVE ENSURED THAT BIODIVERSITY IS USED SAFELY AND THE BENEFITS FROM ITS UTILISATION ARE SHARED EQUITABLY

TARGET 15:
BY 2030, A COMPREHENSIVE BIOSAFETY SYSTEM IS OPERATIONAL TO MANAGE POTENTIAL AND ADVERSE IMPACTS OF MODERN BIOTECHNOLOGY ON HUMAN, PLANT AND ANIMAL HEALTH, THE ENVIRONMENT, AND BIOLOGICAL DIVERSITY

ACTION 15.3:
DEVELOP ADEQUATE RESPONSES TO BIOSAFETY EMERGENCIES INVOLVING LIVING-MODIFIED ORGANISMS (LMOs) AND ITS PRODUCTS AND A MECHANISM TO ADDRESS LIABILITY AND REDRESS

We must continue to be prepared for biosafety emergencies involving LMOs and its products at all times. This calls for a high level of emergency preparedness that would enable us to implement response measures that prevent, minimise, contain, and mitigate any damage caused directly or indirectly by LMOs and its products. The damage may be the result of unintentional release or illegal release or unforeseen impacts. A legal framework that incorporates liability and redress will further strengthen the implementation of response measures required.

We need to:

a. Develop emergency response plans and establish trained emergency response teams to implement response measures that prevent, minimise, contain, and mitigate any damage caused directly or indirectly by LMOs and its products.
b. Establish a comprehensive framework and strengthen the legislation to include essential elements of liability and redress for damages resulting from the transfer, handling, release, or use of LMOs or its products.
c. Enhance capacity and guidance to establish a comprehensive framework for liability and redress for any adverse impacts towards the conservation and sustainable use of biological diversity and human health.
d. Strengthen cooperation and coordination in relation to implementation of liability and redress related to LMOs.

Key Indicator:
By 2030, a legal framework to address liability and redress for damage caused by LMOs and its products has been established



GOALS, TARGETS AND ACTIONS



Kilim Geoforest Park, Langkawi, Kedah

Biodiversity conservation requires the combined efforts of all Malaysians. We must continue to ensure that all stakeholders i.e., the government, civil society, indigenous peoples and local communities, and the private sector, have adequate capabilities, knowledge, access to information, tools, and networks to effectively plan, manage, and monitor biodiversity conservation.

In view of the growing challenges in conserving biodiversity amidst economic development, we need to strengthen the capacities of our government agencies. Cross-agency and cross-sectoral capacity building, mainstreaming, as well as interfacing science and policy all need to be strengthened so that this Policy will truly be an effective guidance document in steering biodiversity conservation in the country.

There is also a growing need to develop and strengthen avenues for more sustainable financing and funding for biodiversity conservation across all levels. The Federal and State governments need to find a common ground to set aside budget allocations for conservation, regardless of growing competition for land and land conversion. We also need to find new financing mechanisms to lessen the burdens from the Federal and State governments. This will require leveraging on the private and financial sector through incentives and sustainable partnerships.

Goal 5 has 2 targets:

- **TARGET 16:**
  By 2030, Malaysia's capacity to implement the Policy and other biodiversity conservation agreements has been significantly strengthened
- **TARGET 17:**
  By 2030, there is a significant increase in funds and financial incentives for biodiversity conservation from both government and non-government sources

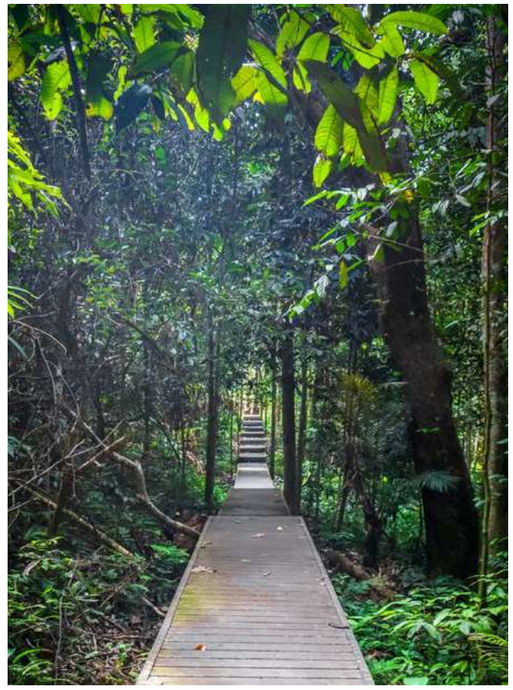
GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 16:
BY 2030, MALAYSIA'S CAPACITY TO IMPLEMENT THE POLICY AND OTHER BIODIVERSITY CONSERVATION AGREEMENTS HAS BEEN SIGNIFICANTLY STRENGTHENED

WHY IS THIS TARGET IMPORTANT?

Managing our biodiversity is a challenging task. It requires a vast amount of people, knowledge, tools, and resources. We need to recognise that various stakeholders have differing capacities to contribute. At the same time, we still need find means to build their capacities to better implement and coordinate this Policy and support biodiversity conservation in the long run. An efficient, people-centric and forward-looking, and anchored institutional framework remains crucial to enable everyone to realise the aspirations of this Policy.



MEETING THE TARGET

To meet this Target, we need to re-evaluate the present capacities of the key implementors of this Policy. In particular, we need to strengthen our Federal and State government agencies, departments, and units to effectively implement this Policy. Personnel with specific skills will need to be recruited undertake the continuous and long-term effort of coordinating and planning with various stakeholders across all segments of society. We also need to strengthen the interface between translating science and research outcomes into effective policy actions.

Target 16 has 5 targets:

- **ACTION 16.1:**
  Strengthen coordination and decision-making at the national and state levels
- **ACTION 16.2:**
  Improve the capacities of government agencies to conserve biodiversity
- **ACTION 16.3:**
  Strengthen the roles of the legislature and judiciary in biodiversity conservation
- **ACTION 16.4:**
  Establish and position centres of excellence to coordinate research, management, and capacity building for biodiversity conservation
- **ACTION 16.5:**
  Develop biodiversity-related human resource capacities

GOALS, TARGETS AND ACTIONS

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 16:
BY 2030, MALAYSIA'S CAPACITY TO IMPLEMENT THE POLICY AND OTHER BIODIVERSITY CONSERVATION AGREEMENTS HAS BEEN SIGNIFICANTLY STRENGTHENED

ACTION 16.1:
STRENGTHEN COORDINATION AND DECISION-MAKING AT THE NATIONAL AND STATE LEVELS

This Policy provides guidance to all stakeholders on how to conserve our biodiversity. To ensure its effectiveness, continuous coordination, planning, and decision-making has to take place at both the national and state levels. Platforms need to be in place for discussions, reporting, and determining future directions in order for it to be trickled down smoothly to initiatives on the ground.

We need to:

a. Revitalize the National Steering Committee for the NPBD as the central platform for progress reporting, priority setting, and policy direction.

b. Strengthen the National Biodiversity Roundtable as a platform for collaboration, partnerships, and input provision to the National Steering Committee through better representation from the government, civil society, and private sector.

c. Establish a new Meeting of Ministers of Biodiversity and Forestry (MEXCO-B&F) to serve as the platform for addressing biodiversity conservation and forestry matters at the state executive level.

d. Strengthen the Thematic Working Groups as the main platforms to coordinate the implementation of this Policy and report on the progress of relevant conservation activities.

e. Establish a framework for Strategic Environmental Assessments of sectoral policies and plans to ensure that impacts on biodiversity are thoroughly evaluated at the national and state levels.

f. Establish continuous channel of capacity building and open communication through relevant agencies on matters related to financing, regulation, and synchronization between prioritization of economic and environmental well-being.

g. Organise an annual National Biodiversity Conference to bring together all stakeholders to discuss progress in the implementation of this Policy, showcase pioneering projects, foster collaboration and celebrate achievements.

Key Indicator:
By 2030, biodiversity conservation has been embedded into the national and state level decision-making framework



Royal Belum State Park, Perak

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 16:
BY 2030, MALAYSIA'S CAPACITY TO IMPLEMENT THE POLICY AND OTHER BIODIVERSITY CONSERVATION AGREEMENTS HAS BEEN SIGNIFICANTLY STRENGTHENED

ACTION 16.2:
IMPROVE THE CAPACITIES OF GOVERNMENT AGENCIES TO CONSERVE BIODIVERSITY

Conserving our biodiversity requires an extensive set of skills and knowledge. Being the forefront of society, we need to ensure all our government agencies are well equipped to implement this Policy, as well as plan and initiate conservation plans and programmes. Thus, it is important to continue building the capacities of all related government agencies that are directly or indirectly involved in biodiversity conservation. This includes strengthening specific units or departments through increasing personnel to enable better execution of tasks, as well as improving knowledge and skills on biodiversity.

We need to:

a. Strengthen the capacities of The Ministry in charge of biodiversity and forestry to enhance its role in coordinating and monitoring the implementation of the Policy.

b. Review existing capacity gaps of Federal and State agencies to determine personnel and resource requirements to facilitate implementation of the Policy.

c. Strengthen the portfolios of environment divisions/units of sectoral agencies at both the Federal and State levels to include biodiversity conservation and management aspects.

d. Enhance the portfolios of the State Economic Planning Divisions/Units to include biodiversity conservation and management matters.

e. Incorporate a biodiversity conservation module within the National Institute of Public Administration (INTAN) to improve biodiversity awareness amongst civil servants.

Key Indicator:
By 2030, capacity needs have been prioritized and biodiversity-related capacity modules have been utilised

ACTION 16.3:
STRENGTHEN THE ROLES OF THE LEGISLATURE AND JUDICIARY IN BIODIVERSITY CONSERVATION

The legislature and judiciary play important roles in supporting biodiversity conservation across the various regions of Malaysia. Legislators and judicial members serve to develop, improve, and enforce relevant laws that help protect our biodiversity. In order for these members to enact their duties effectively, their awareness and understanding of biodiversity must also be strengthened.

We need to:

a. Establish a biodiversity parliamentary select committee to serve as a forum for members of the House of Representatives and the Senate, as well as other parties to discuss, research, and submit recommendations to the Parliament or its committees.

b. Support members of the Federal and State legislatures and the judiciary with information and scientific evidence base about the values of biodiversity.

c. Conduct targeted outreach programmes to improve awareness of judiciary and public prosecutors on biodiversity-related offences.

Key Indicator:
By 2030, the biodiversity parliamentary select committee is actively providing support to the Parliament and its committees

GOALS, TARGETS AND ACTIONS

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 16:
BY 2030, MALAYSIA'S CAPACITY TO IMPLEMENT THE POLICY AND OTHER BIODIVERSITY CONSERVATION AGREEMENTS HAS BEEN SIGNIFICANTLY STRENGTHENED

ACTION 16.4:
ESTABLISH AND POSITION CENTRES OF EXCELLENCE TO COORDINATE RESEARCH, MANAGEMENT, AND CAPACITY BUILDING FOR BIODIVERSITY CONSERVATION

Effective coordination requires focal platforms, which can come in the form of institutes or centres. Biodiversity centres have been established worldwide to function as a central base to coordinate various activities including research, outreach, and conservation projects and programmes. As such, it is also crucial for Malaysia to have properly functioning centres to enhance biodiversity conservation.

We need to:

a. Position the Malaysia Biodiversity Centre as a focal platform for coordinating and managing biodiversity research, as well as conservation projects and programmes.
b. Develop the capacities of research institutes and universities as a centre for capacity building and developing specific technical capacities needed for biodiversity conservation.
c. Establish and strengthen other biodiversity centres as additional supporting institutions to champion biodiversity conservation initiatives.

Key Indicator:
By 2030, the Malaysia Biodiversity Centre has been established and operational

ACTION 16.5:
DEVELOP BIODIVERSITY-RELATED HUMAN RESOURCE CAPACITIES

Biodiversity conservation necessitates the skills of very specialised experts, such as taxonomy, wildlife veterinary sciences, and botanists. Besides improving the capacities of government agencies, we also need to allocate resources to develop human resources in specialised fields of biodiversity conservation and ecology to ensure that these streams continue to have sufficient human resource.

We need to:

a. Strengthen biodiversity related employment opportunities as a viable career pathway for graduates across all genders.
b. Increase biodiversity personnel and specialists in relevant government agencies to support biodiversity conservation initiatives.

Key Indicator:
By 2030, biodiversity conservation-related careers have increased compared to 2024 levels

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 17:
BY 2030, THERE IS A SIGNIFICANT INCREASE IN FUNDS AND FINANCIAL INCENTIVES FOR BIODIVERSITY CONSERVATION FROM BOTH GOVERNMENT AND NON-GOVERNMENT SOURCES



WHY IS THIS TARGET IMPORTANT?

A substantial amount of capital and operational expenditure is required to implement and sustain conservation activities, projects, and programmes effectively, including those related to the implementation of this policy. Conventionally, the bulk of these funds are derived from government budget allocations, supported by multilateral technical assistance and grants from private foundations. While there is justification to increase the government budget allocation, the scope for expansion is severely limited as many other sectors also require a greater allocation, especially in the post-Covid-19 economic recovery scenario. Outside of the conventional sources of funding, performance-based green financing mechanisms are yet to be fully explored and developed. Such mechanisms could provide the impetus for greater private-sector participation, and impetus for area-based conservation, ecosystem restoration and many other activities.

State governments play a key role in biodiversity conservation, since all matters pertaining to land and forest, (with the exception of the Federal Territories of Kuala Lumpur, Putrajaya and Labuan) lie within their legislative purview, as per the Ninth Schedule of the Federal Constitution. As such, State governments must be provided with sufficient financial incentives, including to offset the opportunity costs associated with setting aside land for conservation.

MEETING THE TARGET

Apart from increasing government budget allocations and conventional sources of funding, we need to develop green financing mechanisms and facilitate greater private sector participation, in order to reduce the present shortfalls in conservation financing. In addition, greater incentives and compensation mechanisms need to be developed, to enable State governments to decouple their economies from activities related to the exploitation of natural resources, and offset the opportunity costs associated with area-based conservation.

Target 17 has 3 targets:

- **ACTION 17.1:**
  Increase public funds available for biodiversity conservation
- **ACTION 17.2:**
  Mobilise green conservation financing from the private sector
- **ACTION 17.3:**
  Diversify the revenue streams of state governments for biodiversity conservation

GOALS, TARGETS AND ACTIONS

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 17:
BY 2030, THERE IS A SIGNIFICANT INCREASE IN FUNDS AND FINANCIAL INCENTIVES FOR BIODIVERSITY CONSERVATION FROM BOTH GOVERNMENT AND NON-GOVERNMENT SOURCES

ACTION 17.1:
INCREASE PUBLIC FUNDS AVAILABLE FOR BIODIVERSITY CONSERVATION

We need to substantially increase allocations from the public sector in order to implement activities, plans, and programmes effectively, including this policy. This needs to be done in a concerted manner, through sustained engagements with the relevant financial institutions.

We need to:

a. Engage with the Ministry of Finance, Bank Negara and relevant development financial institutions to develop a financial resource mobilization plan for biodiversity conservation.

b. Strengthen the National Conservation Trust Fund (NCTF) to enhance its impact, visibility, and sustainability.

Key Indicator:
By 2030, at least RM500 million has been mobilised for biodiversity conservation through annual public funds

ACTION 17.2:
MOBILISE GREEN CONSERVATION FINANCING FROM THE PRIVATE SECTOR

We need to enhance the opportunities available for the private sector to contribute towards conservation financing. We can do this firstly by facilitating smart partnerships between private sector with conservation projects, and secondly by facilitating the development innovative green financing mechanisms.

We need to:

a. Establish the policy, legal, and institutional mechanisms necessary to operationalize the REDD Plus Finance Framework (RFF) at the national and/or sub-national levels.

b. Utilise the RFF to facilitate funding, ensuring long-term commitment of stakeholders, transparency in conservation, certification of activities, and central reporting.

c. Provide the technical support necessary for the State governments to pursue REDD Plus and voluntary forest carbon projects.

d. Establish the legal and financial mechanisms necessary for implementation of appropriate Payment for Ecosystem Services (PES) schemes in the Malaysian context.

e. Engage regulators and financial institutions to develop financial instruments which blend commercial and concessional finance to create investment opportunities that revolve around biodiversity and ecosystem services.

Key Indicator:
By 2030, private financing contributions into national / state conservation trust funds have increased

GOAL 5

WE HAVE IMPROVED THE CAPACITY, KNOWLEDGE, AND SKILLS OF ALL STAKEHOLDERS TO CONSERVE BIODIVERSITY

TARGET 17:
BY 2030, THERE IS A SIGNIFICANT INCREASE IN FUNDS AND FINANCIAL INCENTIVES FOR BIODIVERSITY CONSERVATION FROM BOTH GOVERNMENT AND NON-GOVERNMENT SOURCES

ACTION 17.3:
DIVERSIFY THE REVENUE STREAMS OF STATE GOVERNMENTS FOR BIODIVERSITY CONSERVATION

There is a need to review the revenue streams of State governments to reduce their level of dependency on natural resources and exploitative activities that lead to biodiversity loss, as well as incentivise biodiversity conservation actions. This remains a crucial task since State governments remain the key custodians of biodiversity across the terrestrial, freshwater, and marine realms.

We need to:

a. Further entrench Ecological Fiscal Transfer (EFT) into legal and institutional frameworks to formalise the mechanism and performance-based criteria.

b. Study the feasibility of establishing a debt-for-nature swap programme to incentivise conservation actions by State governments.

c. Re-align the fiscal system to entrench biodiversity conservation and sustainable development as part of the year budget requirements / allocation.

d. Encourage State governments to establish their respective sustainable financing task forces, facilitated by Federal institutions and agencies where applicable, to pursue sustainable financing opportunities.

e. Enhance State government capacities to access international climate funds to pursue biodiversity conservation efforts.

Key Indicator:
By 2030, sustainable financing task forces (or relevant equivalents) have been established in all states and are leveraging on sustainable financing approaches for biodiversity conservation



Batu Punggul, Sabah

SECTION 3 :
IMPLEMENTATION FRAMEWORK

Kenyir Lake, Terengganu

SECTION 3 : IMPLEMENTATION FRAMEWORK

A RENEWED CALL FOR ACTION

The National Policy on Biological Diversity 2022-2030 calls for action through a "Whole of Government" and "Whole of Society" approach in protecting and managing Malaysia's biodiversity. As such, political will and continuous engagement of all levels of government and segments of society to be involved in biodiversity conservation will be required. Both the Federal and State governments will continue to play leading roles of this Policy's implementation. However, wider and stronger partnerships amongst civil society, private sector, indigenous people and local communities, academia, and the general public remains crucial to ensure the Policy's success in managing and conserving Malaysia's biodiversity.

ROLES AND RESPONSIBILITIES FOR IMPLEMENTATION

The Policy will continue to provide an implementable framework for stakeholders at all levels. It will continue to inform, guide, empower, and support actions for biodiversity conservation, and will also assist stakeholders in setting out subsequent goals and targets to be achieved. The Policy will also facilitate identification and formation of partnerships between various stakeholder groups according to their capabilities and circumstances.

In line with the "Whole of Society" approach, the implementation of the Policy will involve various stakeholder groups which have different roles and responsibilities. These roles and responsibilities have been reviewed and redefined for the revised Policy based on the ongoing implementation challenges and lessons learnt in the last four years.

A. FEDERAL GOVERNMENT

The Federal government will continue to play the leading role in the implementation of this Policy. The Ministry in charge of biodiversity and forestry will continue to function as the lead agency overseeing the Policy's implementation. The core responsibilities of the Ministry are to:

- Coordinating the implementation of the Policy among the key Federal ministries;
- Liaising and coordinating the implementation of the Policy's with the State governments;
- Facilitating resource mobilisation for policy implementation;
- Collating the Policy's implementation progress for international and domestic reporting; and
- Supporting the implementation of the State biodiversity plans and strategies.

Coordinating the Policy's implementation is a long-term and continuous process, which requires substantial time and human resource. Given the immense task of coordinating and monitoring the Policy, it is recommended that a dedicated team to be established under the Ministry in charge of biodiversity and forestry to monitor the implementation of the Policy, coordinate initiatives, and report on its progress. This team will require qualified personnel with a strong understanding of the technical aspects of biodiversity, Federal-State jurisdictions and the collaborative networks between the government, civil society, academia, and private sector.



IMPLEMENTATION FRAMEWORK

B. STATE GOVERNMENTS

The management of land, water, and forests comes under the jurisdiction of the State governments and the respective agencies. As such, they are essentially the core implementers of the Policy at the State level.

In order to improve coordination at the State level for the Peninsular Malaysia region, the Policy proposed:

- Expand the portfolios of existing environment units under the State governments (i.e., the State economic planning units/divisions) to include monitoring of biodiversity conservation initiatives and the actions of this Policy;
- Establish biodiversity management units under the State governments to coordinate and monitor state biodiversity conservation initiatives.

The Sabah Biodiversity Centre and Sarawak Ministry of Natural Resources and Urban Development will function as the main coordinating platforms of this Policy for Sabah and Sarawak.

Both alternatives intend to establish focal points for coordination and reporting of the Policy implementation from the State levels to. This would eventually facilitate better and more regular progress reporting. At the same time, both alternatives will require recruitment of qualified personnel to serve as focal persons that will oversee the implementation of the Policy at the State level and coordinate initiatives with stakeholders on the ground.

C. PRIVATE SECTOR

The contributions from the private sector towards biodiversity conservation has greatly increased in recent years. As such, they remain as key stakeholders to be engaged and partnered with in the implementation of this Policy. The National Biodiversity Roundtable (NBR) is still envisioned as a platform for the private sector to be directly involved in the implementation of the Policy through providing feedback or support in terms of funding, human resources, capacity building etc. for various actions and activities.

The Policy calls for harnessing the strengths of the private sector through stronger partnerships and more engaging platforms besides the NBR. The role of the Malaysia Platform for Business and Biodiversity (MPBB) will be strengthened. Besides, the NBR and MPBB platforms, among others will serve as avenues to translate the Policy into collaborative initiatives, as well as reporting on private sector implementation progress. These collaborative platforms are envisioned to be realised through the Thematic Working Groups.

D. CIVIL SOCIETY

Civil society is another stakeholder group that is vital to the successful implementation of the Policy. The work by environmental and conservation organisations will still be essential in translating the Policy into meaningful actions, while community-based organisations are well-positioned to facilitate better collaborations with the indigenous people and local communities to be more engaged in biodiversity conservation.

The Policy calls for more recognition and support of civil society efforts that are in line with the Policy, as well as the need for working platforms to coordinate efforts and identify implementation gaps and needs. The Thematic Working Groups are also envisioned to function as working platforms for civil society to participate in as part of the Policy's overall implementation.

E. INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

Indigenous peoples and local communities have greatly contributed towards biodiversity conservation in recent years. This is mainly through increased efforts to be stewards of ancestral land and urban habitats. The Policy has recognised these efforts and reinforce the need to continue empowering and supporting indigenous peoples and local communities by developing more partnerships and platforms to get them involved in the implementation of this Policy.

F. RESEARCH AND EDUCATION

The research community will continue to provide scientific and technical inputs in the implementation of this Policy. This is to ensure that conservation initiatives and actions are guided by sound justifications which are evidence-based. The Thematic Working Groups need to include prominent biodiversity researchers and scientists to facilitate the science-policy interface.

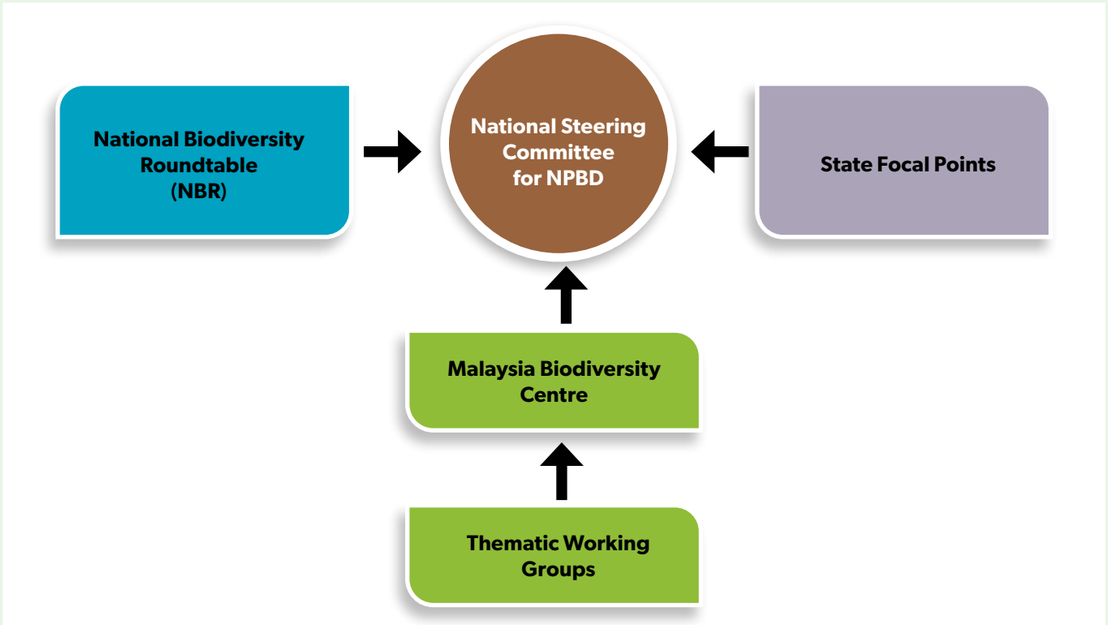
At the same time, the involvement of educators in the implementation of the Policy needs to be strengthened. Educators i.e., teachers and lecturers, are vital assets to increase the general public's awareness of Malaysia's biodiversity through curriculum and experiential learning. The inclusion of educators in the Thematic Working Groups (e.g., on the involvement of children and youth) is another aspect in this Policy.

G. GENERAL PUBLIC

The public at large remains an important component in ensuring the effectiveness of this Policy, as well as contributing towards biodiversity conservation as a whole. Communication, education, and awareness-raising are still important to enlighten and empower Malaysians on how to live sustainably, reduce ecological footprint, as well as supporting conservation efforts, through volunteerism or becoming local champions of conservation.

COORDINATING PLATFORMS

To improve the effectiveness of the Policy's implementation, the coordinating platforms have been revised to provide a sense of stability, especially in the event of the restructuring of Federal and State agencies as follows:



Central Coordination Framework

i. The National Steering Committee for the NPBD will remain as the central platform in terms of implementation progress reporting and in facilitating discussions on biodiversity conservation and management initiative and strategies. The Committee will be chaired by the Secretary General of the Ministry in charge of biodiversity and forestry, with the participation of relevant ministries and agencies as its members.

ii. The National Biodiversity Roundtable and State Focal Points will provide technical support and advise to the National Steering Committee for the NPBD;
   - The National Biodiversity Roundtable will continue to serve as a platform for partnerships between all stakeholders to implement the Policy action while providing updates and technical inputs to the National Steering Committee.
   - The State Focal Points will provide inputs in the reporting the Policy's progress at the State levels.
     - For the Peninsular Malaysia, the focal points are the State Economic Planning Units/Divisions;
     - The Sabah Biodiversity Centre will represent Sabah; and
     - The Ministry of Natural Resources and Urban Development (MUDeNR) will represent Sarawak.

     Both the National Biodiversity Roundtable and State Focal Points will assume the core functions as the State Steering Committees.
   - The State Biodiversity Units (UPENs and BPENs) for the Peninsular Malaysia are proposed to be established as specialised units under the State government offices.

IMPLEMENTATION FRAMEWORK

iii. The lowest coordinating tier comprises the Thematic Working Groups and the Malaysia Biodiversity Centre. These two platforms are proposed to function as the root platforms for monitoring the Policy's implementation.

There are already a plethora of working groups and platforms that coordinate different types of conservation initiatives. As such, the Thematic Working Groups are proposed to be divided into various thematic areas to provide a more coordinated approach to collating progress information. At the same time, it will also help the Ministry in charge in Biodiversity and Forestry role in coordinating the Policy's implementation through targeted streams.

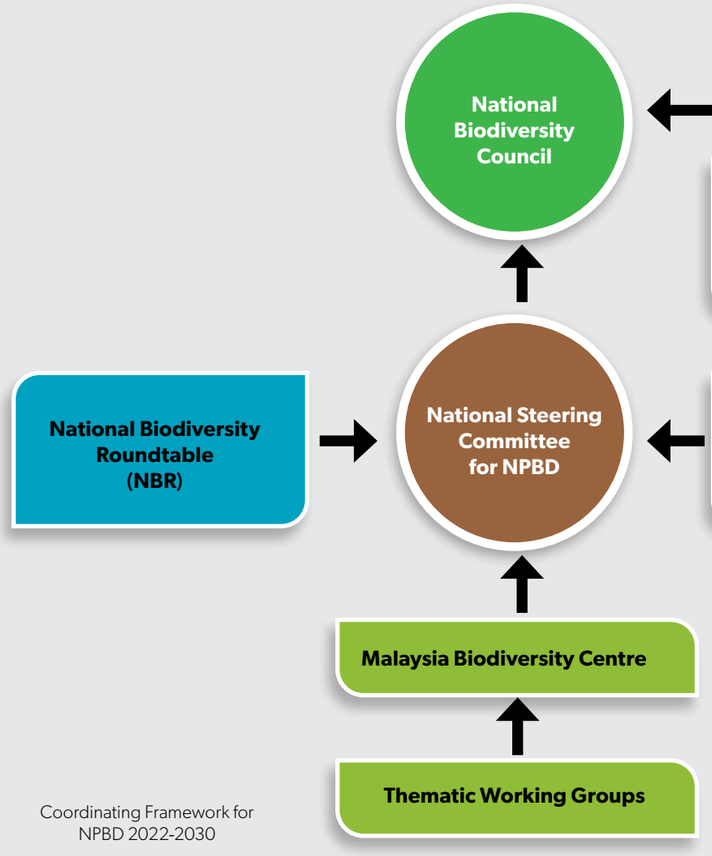
The Working Groups are envisioned to comprise off representatives from the private sector, academia, NGOs, CBOs, and government agencies that are involved in programmes, projects, and initiatives relevant to the specific thematic area. Each Working Group will be co-chaired by the Ministry in charge of biodiversity and forestry and selected members from the National Steering Committee, and are encouraged to meet regularly to discuss progress and coordinate future efforts that are in line with the Policy.

Additionally, the Malaysia Biodiversity Centre (MBC) will serve as a centre for monitoring progress and reporting. More specifically, the MBC will play a role in collating long-term research outputs and disseminating it amongst key stakeholders for decision-making. The MBC will also be another focal platform for coordinating large scale conservation initiatives and providing periodic progress reports to the higher coordinating platforms.

In terms of high-level coordination and reporting, the National Biodiversity Council (NBC) will serve as the highest coordinating platform. The NBC will be chaired by the Deputy Prime Minister and attended by state Menteri Besar or Chief Ministers. The NBC is envisaged to serve as the key platform for strengthening national biodiversity conservation policies and strategies and to oversee the implementation of the NPBD. At the same time, biodiversity-related matters can be discussed at multi-national platforms such as the National Land Council, National Physical Planning Council, Environmental Quality Council, National Development Planning Committee (Jawatankuasa Perancangan Pembangunan Negara) etc. to further mainstream biodiversity into various high-level planning councils and committees. This can improve implementation as well as initiating more conservation projects to support the Policy.

The Meeting of Ministers of the Environment (MEXCOE) will be used to facilitate communications between the Federal and State government representatives in charge of natural resources. This meeting will be chaired by the Minister in charge of environment, with members including the respective Ministers responsible for environment/biodiversity portfolio in Sabah and Sarawak, and their State EXCO counterparts from Peninsular Malaysia.





Coordinating Framework for NPBD 2022-2030

MONITORING PROGRESS

Monitoring the Policy's continued implementation needs to be done in a more coordinated manner to reduce reporting gaps and leverage on success stories more frequently. An online monitoring system will be used to monitor the targets and indicators of the Policy and the progress of the NPBD 2022-2030 to be reported every four years to the CBD.

A National Biodiversity Conference is to be organised annually as a platform to bring together all stakeholder groups across Malaysia to discuss the implementation progress of the Policy, while also providing avenues to showcase pioneering projects, foster more collaborations between groups, and recognise and celebrate achievements in biodiversity conservation. The Thematic Working Groups can use this annual conference as their annual general meetings through Working Group sessions that can run concurrently during the Conference, or before the start of the Conference.

The conclusion of the Conference should identify key areas to focus on in the following year, which will be the thematic focus of the subsequent Conference. The progress reports from the Thematic Working Group meetings, as well as lessons learned from projects that are being implemented and will be collated systematically by the Ministry in charge of biodiversity and forestry to be reported in the country's subsequent National Report to the CBD, as well as for public awareness.

IMPLEMENTATION FRAMEWORK

REVIEWING THE POLICY

The Policy is to be reviewed every four or five years of its implementation, taking into account the policy's achievements and priorities at the national, state and the global level, complementing Malaysia's national development plans and national reporting commitments to the CBD, providing implementation updates, as well as directions towards revising the targets and actions of the Policy.

IMPLEMENTATION SUPPORT AND OUTREACH

The Biodiversity Implementation Support (BIS) will help the Ministry in charge of biodiversity and forestry in rolling out the Policy.

The main intended outcomes of the BIS are:

(i) various elements of the Policy are implemented at the state level;

(ii) improved mainstreaming of national policy into state development programmes and plans;

(iii) improved monitoring of policy implementation at both national and state levels; and

(iv) enhanced awareness and knowledge about the policy amongst the government agencies, civil society, private sector, and the local communities.

These initiatives will be designed to facilitate the implementation of the Policy as well as to harness the commitment and support of all stakeholders. This includes roadshows and dialogues at various states and economic sectors.



Royal Belum State Park, Perak