



Sarawak Biodiversity Master Plan

A Primer for Mainstreaming Biodiversity





MUDeNR

Ministry of Natural Resources
& Urban Development

Sarawak Biodiversity Master Plan (SBMP)

2023 - 2030

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All contributions whether big or small, financial or technical, administrative and project management oriented have collectively brought this Master Plan into fruition. We are deeply grateful.

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Credit: Getty Image • The Rhinoceros hornbills (*Buceros rhinoceros*) known as the Bird of Sarawak or Burung Kenyalang

Credit: Sarawak Forestry Corporation • The Rafflesia in full bloom at Gunung Gading National Park

Message by the Premier of Sarawak

Sarawak, wellknown as Land of the Hornbills, is renowned for its rich, unique, and vast biological diversity and various iconic species. We host numerous tropical ecosystems in the region with lush rainforests, limestone cave systems, coastal mangroves, and coral reefs which all provide vital ecosystem services to all Sarawakians.



This abundance, variety and the crucial value of our biodiversity is not a matter to be taken for granted. We must address the drivers of biodiversity loss in Sarawak, in tandem with the agenda of continuous economic development. Sarawak has developed the Post Covid-19 Development Strategy 2030 (PCDS 2030) and undoubtedly, we aim to implement the PCDS sustainably.

Challenges are expected to arise, and rather than relying on old paradigms, Sarawak must boldly implement new approaches and strategies to curb and mitigate any resulting biodiversity loss and degradation.

Here is where the Sarawak Biodiversity Master Plan (SBMP) comes into play. The Ministry of Natural Resources and Urban Development (MUDeNR) has led the formulation of this document. It prescribes a priming framework for biodiversity mainstreaming efforts in Sarawak, composed of priority areas and accompanying strategic actions and measures.

We are the first State to venture further into biodiversity and natural resource sustainability through two novel and interconnected approaches; mainstreaming biodiversity considerations at all levels and across sectors in Sarawak through a whole of government approach.

The SBMP is a catalyst for action towards harmonizing policies and action plans, communicating biodiversity information effectively, enhancing intra-governmental coordination of biodiversity at all levels and raising sectoral efforts in ecosystem management. Environmental principles are prescribed to guide biodiversity and mainstreaming related decision-making.

In this Master Plan you will find priority thematic areas for biodiversity mainstreaming, where the objectives of that thematic area are expected to be realised through various actions and measures. These actions and measures can be described as enablers as well as entry and intervention points towards achieving biodiversity mainstreaming.

This makes the Master Plan a prescriptive and action-oriented document; whilst also serving as a substantive policy reference document when undertaking biodiversity mainstreaming efforts.

I hope to see the whole of government approach meet a level of success despite some initial challenges we may face implementing it. This Master Plan is set for the span out in this Plan and other high level policy interventions, efforts will continuously be made towards providing more guidance, reviewing, enhancing, and supplementing the SBMP, where deemed necessary for its effective implementation.

YAB Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari bin Tun Datuk Abang Haji Openg
D.P., P.M.N., D.A., P.N.B.S., J.B.S

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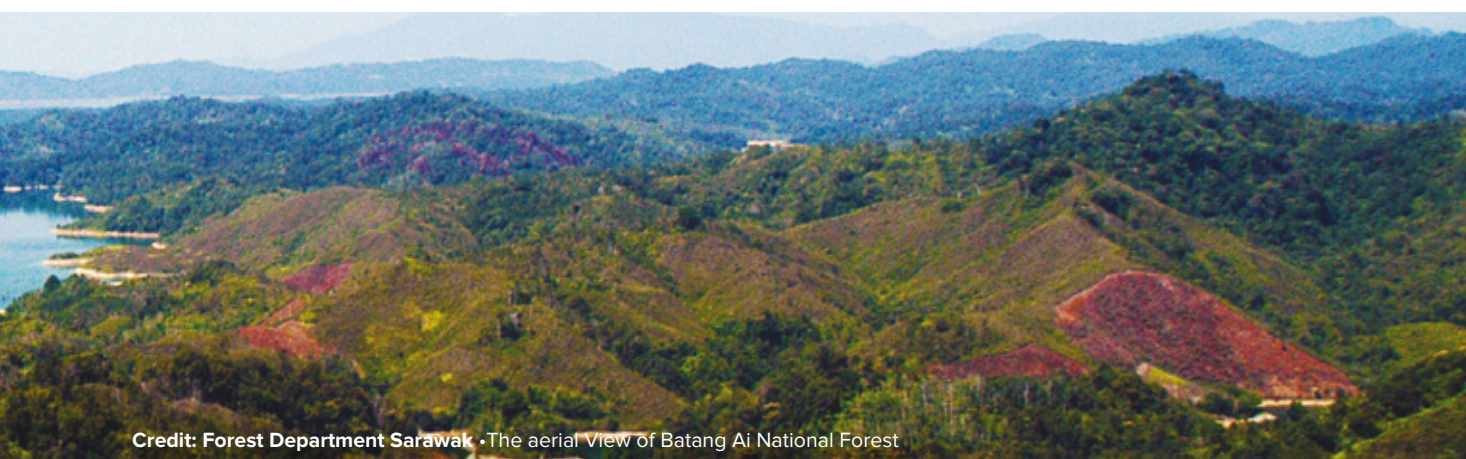
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Key Definitions



Biological diversity (biodiversity)

means the variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.



Biodiversity mainstreaming

means, in the context of this Master Plan that biodiversity elements and ecosystem services in Sarawak are appropriately and adequately factored and integrated into policies, plans, practices and decision making by all levels of government across sectors., through a variety of measures, mechanisms, and actions.



Biodiversity information

means and includes biodiversity data and suite of information collected through observations and research, enforcement, and monitoring, or generated via modelling, including technical data which can be numerical or qualitative values to describe variables about species, habitats, or other biodiversity values.



Capacity building

means a process of developing and strengthening the skills, abilities, processes, and resources that agencies are required to adapt, transform, thrive and be efficient in carrying out duties, roles and the implementation of any policy, plan, or program.



Clearing house

means to promote and facilitate the sharing and exchanging of information, knowledge, experiences, technical and scientific data related to biodiversity conservation.



Ecosystems

means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.



Natural Capital

means the stock of biological and natural resources and environment assets that provide valuable goods and services that benefit the economy and society.



Sustainable use

means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.



Whole of government²

means an approach where all government agencies work individually and collectively across mandates and portfolios to meet the objectives any policy, plan, or program.

Executive Summary



Credit: Getty Images • The Rajah Brooke's Birdwing butterfly (*Troides brookiana*) resting on a leaf

The Sarawak Biodiversity Master Plan (SBMP)³ is not only a first for Sarawak, but the first of its kind in Malaysia.⁴

The SBMP was conceived from the recognition that mainstreaming biodiversity considerations into all sectors and at all levels of government is paramount for safeguarding Sarawak's rich natural heritage both for the economy as well as for the well-being of all Sarawakians.

This is a departure from business as usual and adopts a whole of government approach in this endeavour towards integrating biodiversity considerations more effectively.

3. The acronym SBMP and the term SBMP is used interchangeably in the document.

4. Where biodiversity mainstreaming elements are found in a dedicated Policy Document.

The SBMP is divided into 5 Chapters

Chapter 1 provides an overview of the rich biodiversity heritage found in Sarawak. Details of conservation efforts listed there are not comprehensive accounts of all efforts but rather, serve as a select overview of such initiatives. Chapter 1 also includes an overview of sectoral, conservation oriented and economic plans in Sarawak that are worth noting. Threats to biodiversity in Sarawak are also highlighted. The value of the SBMP is described i.e., the 'progressive' and 'collective' value propositions and perspectives of such a Plan. The accompanying narratives provide insight into the respective values.

Chapter 2 covers the technical aspects of the Master Plan. Various key elements of the SBMP are prescribed and described, including the aspects that are considered vital in Sarawak's biodiversity mainstreaming context. No less important is the detailing of various principles set to guide implementation and decision-making related to the SBMP. This Master Plan is action oriented, and the crux of all actions and measures as they relate to biodiversity mainstreaming are prescribed under 6 Thematic Areas. The objectives of each Thematic Area are described as well.

A comprehensive implementation framework is imperative for the SBMP and this is particularized in Chapter 3 and 4.

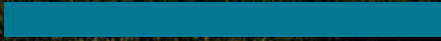
Chapter 3 commences with the 'approach' adopted towards implementation. The approach is principally embodied through establishing various institutional levers accompanied by assigned roles and functions in relation to the SBMP implementation. Additionally, for the governance aspects of the SBMP, a comprehensive Table, containing the suggested activities and possible indicators clarifies in detail the implementation aspects. These activities and indicators as well as the identification of agencies responsible for acting, serve to aid in monitoring and evaluation aspects of the SBMP. Essential elements that guide the development of a SBMP reporting framework are also prescribed.

Chapter 5 is the concluding Chapter that identifies 'stand-alone' aspects of the SBMP. It highlights the collateral and complimentary facets that support the SBMP implementation. These facets i.e. the development of a 'Capacity Development Plan for Biodiversity Mainstreaming' and the development of a Sarawak specific suite of 'Biodiversity Indicators', aim to provide stimulus for other policy considerations related to biodiversity for Sarawak.

The Master Plan concludes with the inclusion of relevant annexures and literature references.

CHAPTER

1



1.1 Introduction

Sarawak Biodiversity and the Heritage of the Region

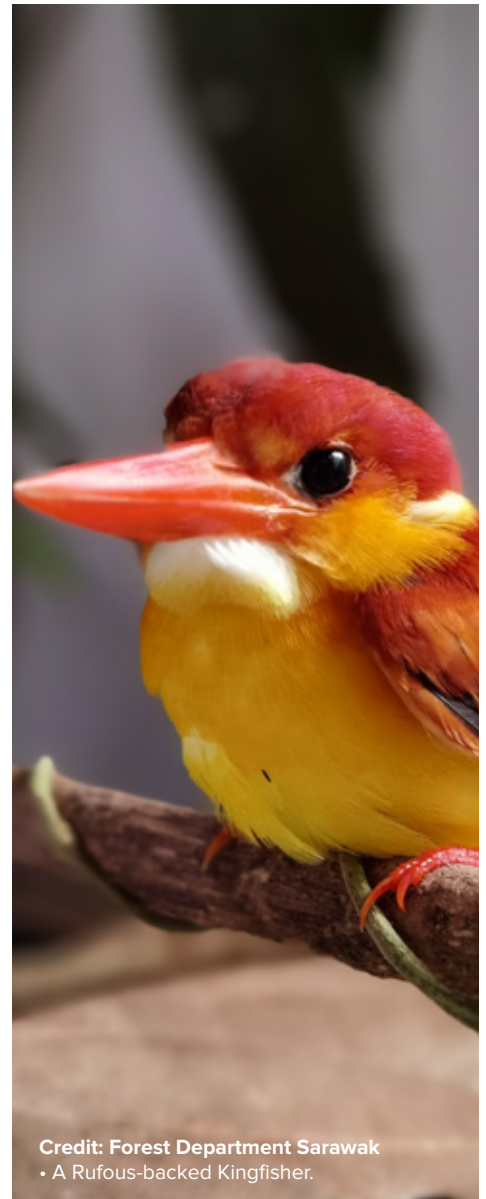
Sarawak is the largest region in Malaysia and is exceptionally renowned for its rich biodiversity and ecosystems. Known as the Land of the Hornbills, it is a unique and biologically diverse region in terms of its population, culture, geography, and history.

The tropical rainforests of Sarawak serve as important global carbon sinks and also house most of the 63 endemic Bornean terrestrial mammal species. The Sundaland eco-region is known for its extremely high biodiversity, with over 25,000 species of plants (59 genera which are endemic to Borneo), about 3,000 tree species (with 155 species of dipterocarps endemic to Borneo), 16 species of large flowers of the genus *Rafflesia*, 770 species of birds (of which nearly 70 species are endemic to Borneo), 450 species of reptiles, 240 species of amphibians and 1,000 known freshwater fishes (about 430 species are endemic to Borneo). With an estimated coastline of 1035 km, Sarawak is also rich in marine biodiversity with known 18 species of marine mammals, 4 species of marine turtles, 63 species of sharks, 54 species of rays, 203 species of hard and soft corals, 40 species of mangroves, 8 species of seagrass, 206 species of marine fishes and over 180 species of molluscs and crustaceans.

Globally significant species found in Sarawak include the Orang Utan, the Proboscis monkey, sun bears, bear cats and marine species such as marine turtles, dugongs, dolphins and many more. Sarawak also hosts unique tropical ecosystems – such as rainforests, mountains, limestone cave systems, mangroves, coral reefs, mudflats and seagrass beds.

Its rich biodiversity plays a crucial and fundamental role towards the welfare of all Sarawakians. This richness yields a vast range of natural resources in the region as sources of food, medicine, shelter, energy and of course opportunities for economic development. Additionally, there are invaluable contributions from its biodiversity towards the regulation of multiple ecosystem functions and processes which include:

- valuable support for food production;
- fertile soil production for all forms of agriculture;
- livelihood sustenance;
- contributions to clean air regulation;
- continuous supply of fresh water;
- contributions and sustenance of spiritual and cultural values;
- various climate regulation aspects;
- pest and disease control; and
- disaster risk reduction and mitigation.



Credit: Forest Department Sarawak
• A Rufous-backed Kingfisher.



Credit: Sarawak Forestry Corporation • Clownfish (*Amphiprion sp.*) has symbiotic relationship with sea anemones

Biodiversity Conservation Efforts

How has Sarawak fared in terms of protecting this rich heritage?

In terms of biodiversity protection, Sarawak has initiated action decades ago.

Sarawak's frontline strategy towards biodiversity protection has been through the establishment of Totally Protected Areas (TPAs) and the constitution of Permanent Forest Estates (PFEs). Currently the region has around 62% of the State land mass that is still intact with forest cover.

As of 2023, a total of 115 PFEs which consist of 44 Protected Forests, 42 Forest Reserves, 28 Communal Forests and 1 Government Reserve. These areas collectively total approximately

3,939,113 hectares of gazetted PFEs. Sarawak aims to gazette a total of 6 million hectares of State land mass as PFEs.

Totally Protected Areas (TPAs) in Sarawak refer to forest lands so designated and established under Wild Life Protection Ordinance, 1998 (Cap. 26) and National Parks and Nature Reserves Ordinance, 1998 (Cap. 27) which consist of national parks, nature reserves and wild life sanctuaries. Sarawak has made a policy commitment to declare 1 (one) million hectares of Totally Protected Areas to be achieved incrementally over time. To date, a total of 47 national parks, 15 nature reserves and five wildlife sanctuaries have been gazetted, totalling 872,386 hectares or seven percent of Sarawak's land area (Table 1).

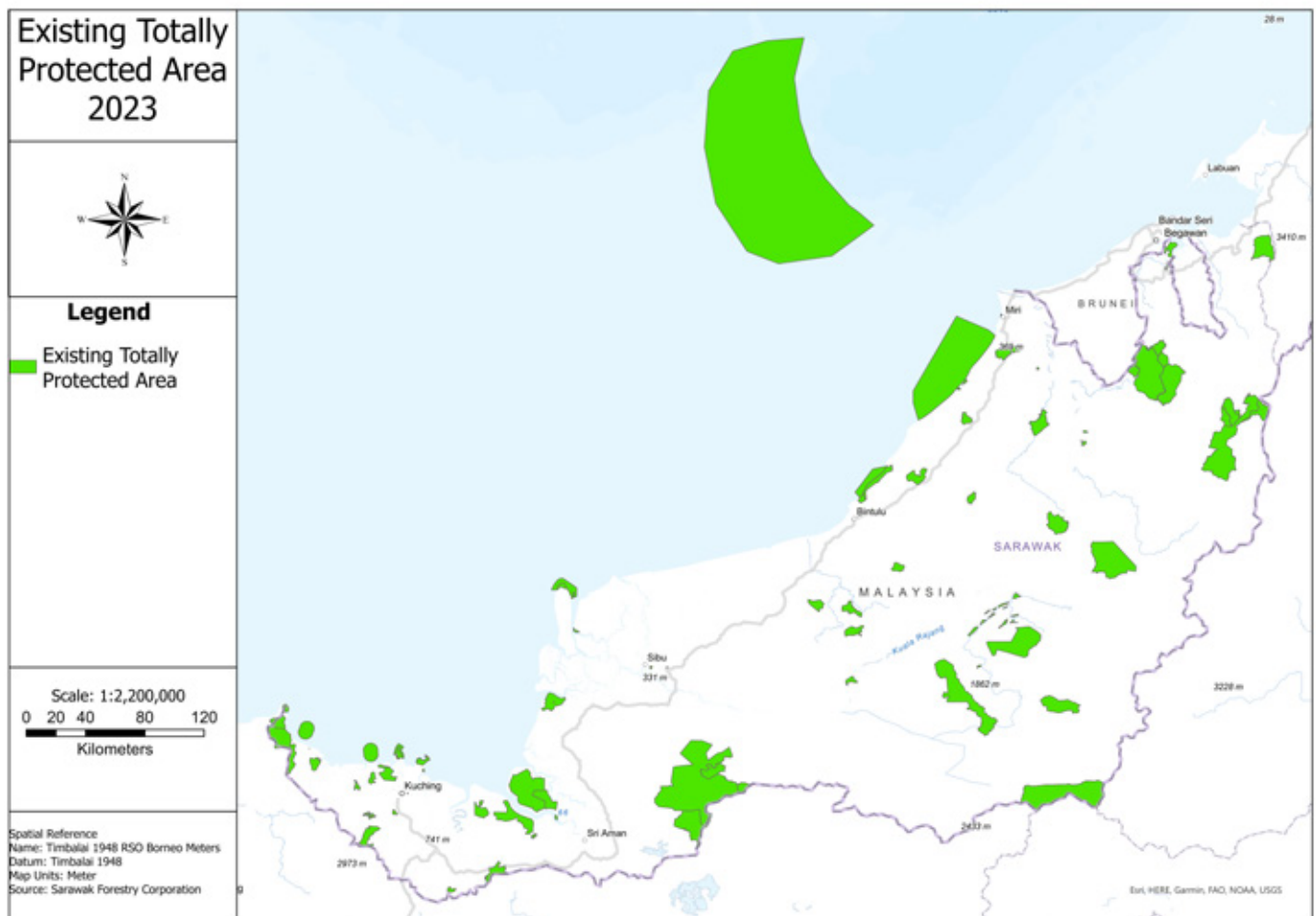


Figure 1: Distribution of existing terrestrial and marine totally protected areas in Sarawak, 2023.
The total area of totally protected areas in Sarawak is 2,116,111 hectares.

Protected marine areas in Sarawak measure approximately 1,243,726 hectares within Sarawak's waters. For example, the establishment of Luconia Shoals National Park, established in 2018, is an achievement as it covers 1,011,772 hectares making up 81 percent of total protected marine areas. It is the largest marine protected area in Malaysia.

Sarawak also undertakes transboundary action related to conservation and protection.

Trilateral efforts such as the Heart of Borneo (HoB) initiative (a voluntary transboundary cooperation

between Brunei, Indonesia and Malaysia) are ongoing, where an estimated 220,000 km² of forested areas on Borneo Island is expected to be conserved, protected and sustainably managed.

Malaysia's contribution towards the HoB initiative is significantly bolstered by Sarawak's commitment to the initiative; where around 11% (2.69 million ha) of the total forested areas of the HoB fall within the boundary of Sarawak (Figure 3). Most of the HoB areas in Sarawak are located amongst the highlands, which are important watersheds that serve as headwaters for Baleh, Murum and Bakun.

Table 1. List of Totally Protected Areas in Sarawak, 2023

No	Totally Protected Areas (TPA)	Numbers	Land area (ha)	Territorial waters (ha)	Total area (ha)
1	National Park	47	643,135	1,243,726	1,886,861
2	Nature Reserve	15	3,460	0	3,460
3	Wildlife Sanctuary	5	225,791	0	225,791
		67	872,386	1,243,726	2,116,112

Source: Sarawak Forestry Corporation, 2023



Figure 2: Mulu National Park

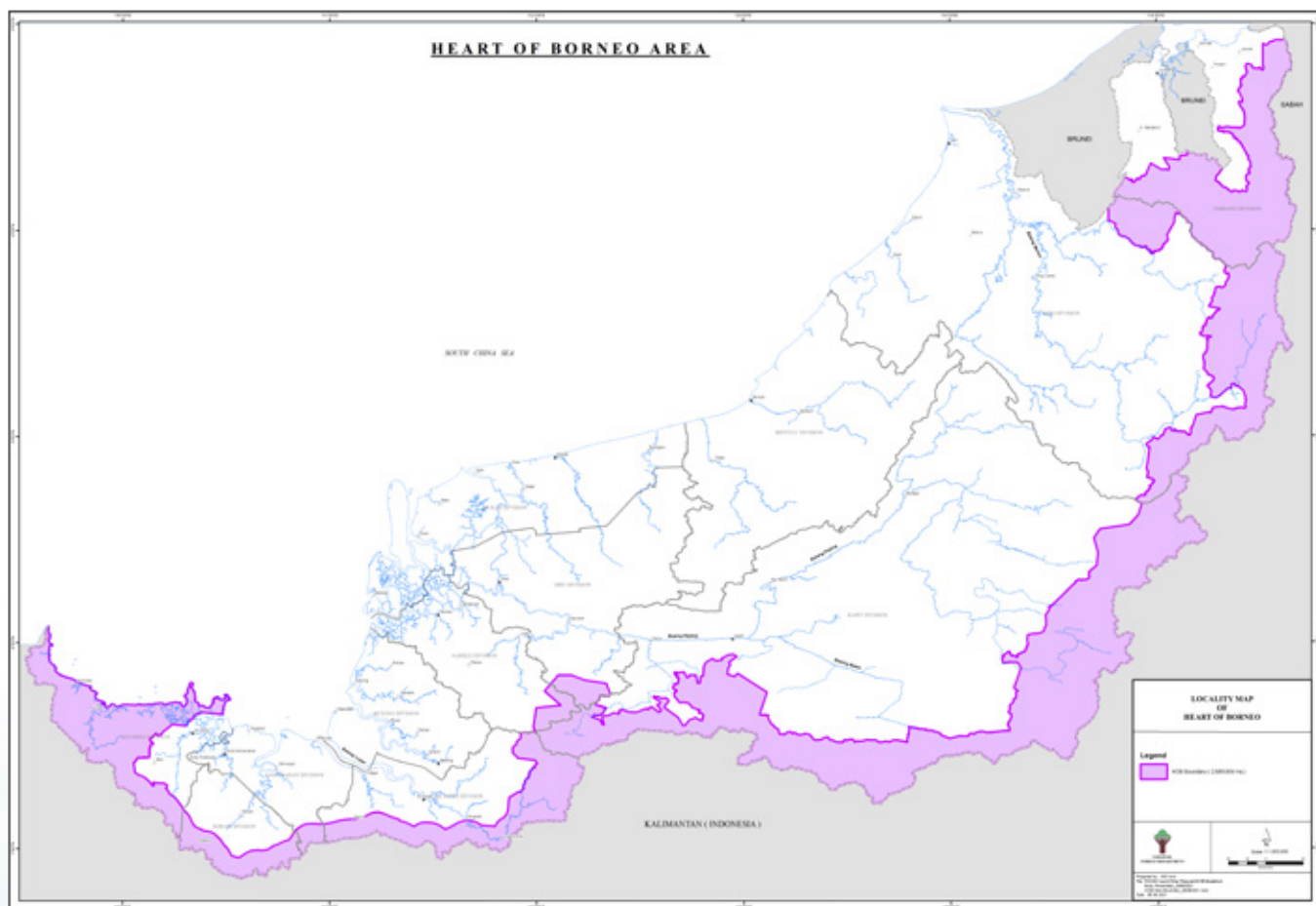


Figure 3: Heart of Borneo map in Sarawak with the current total area of 2.69 million hectares.



Contributions to National and International Agenda

Sarawak has implemented and continues to implement several of the pillar objectives of the Convention of Biological Diversity (CBD). These include measures towards biodiversity conservation and its sustainable use, the development of Access and Benefit Sharing (ABS) measures and other related protocols such as Free, Prior, and Informed Consent (FPIC).⁵

Several policies and measures put in place by Sarawak Government clearly demonstrates the commitment to biodiversity management that is aligned to national and international agenda.

The SBMP is drafted with the similar spirit i.e. with the aim of complementing and contributing to biodiversity protection, conservation, and management through a novel approach.



Current Policies and Plans

The **Sarawak Forest Policy** which was updated and published in 2020 is a sectoral policy document that reflects newer paradigms for betterment of forest management in Sarawak.

It incorporates elements of sectoral mainstreaming of biodiversity within it. Protection of forests is accomplished through the management of Permanent Forest Estates (PFEs) involving three categories of forests namely, Forest Reserves, Protected Forests and Communal Forests.

Sarawak Wildlife Master Plan was formulated in late 90's with the objective of managing and conserving its native wildlife populations in perpetuity. The main strategies in the Master Plan aim to balance and integrate the conservation of wildlife and natural resources with Sarawak's economic and development needs.

A number of wildlife management plans have been formulated within the Master Plan for examples: -

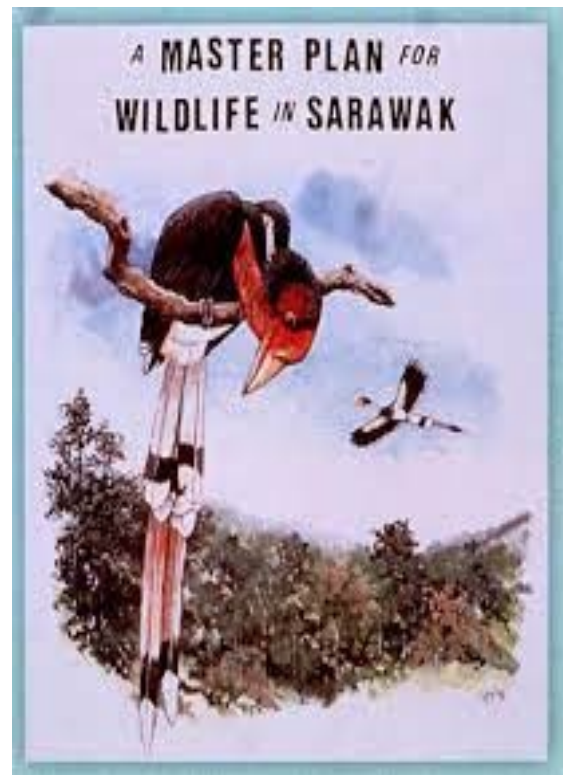
- i) individual park management plans for Bako National Park, Mulu National Park, Niah National Park, Maludam National Park to name a few;
- ii) Ulu Sungai Menyang Orangutan Strategic Action Plan 2016-2025 (USMOAP) - following the discovery of significant numbers of orangutan and their nests in this area. The area is now accorded with a 'special conservation area' status;
- iii) Proboscis Monkey Action Plan 2021-2025 - in recognition that the population is threatened and endangered. Populations are declining due to pressures from hunting, habitat degradation and conversion of its habitats to other land uses;
- iv) Species Conservation Action Plan for Marine Turtles 2023-2027 - recognizes the importance of marine turtle population in Sarawak and is intended to provide long-term action plans and guidelines on their conservation;
- v) Crocodile Management Plan 2016-2020- manage the sustainability of the wild crocodile populations in Sarawak.

5. In furtherance of creating access to genetic and biological resources in Sarawak

The **Sarawak Land Use Master Plan** was introduced as a land use policy for Sarawak. The objectives of the said plan are to identify long term land-use purposes and optimize the use of natural resources which also concerns environmental conservation aspects.

Recently, the **Post COVID-19 Development Strategy 2030 (PCDS 2030)** was introduced in response to many challenges posed by the COVID-19 pandemic. This document focuses on numerous areas for economic growth. The PCDS 2030 now principally guides economic development in the region till 2030. The Strategy identifies 6 economic sectors (i.e., forestry, mining, agriculture, manufacturing, tourism and social services) which are supported by seven (7) 'enablers' that aims to position Sarawak as an attractive investment destination. Sectors of such nature, if not managed sustainably and without adequate biodiversity mainstreaming, can lead towards being potential direct and indirect drivers for biodiversity loss and degradation in the region. The PCDS 2030 is underscored with environmental sustainability considerations but further alignment of sectoral development with the SBMP and other existing environmental policies is expected to mitigate threats to biodiversity.

On this subject of threats, what are some of the current and future threats to biodiversity in Sarawak?





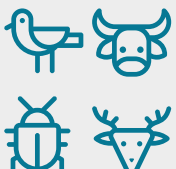

Sarawak Wildlife Master Plan: At the time of drafting, the Sarawak Wildlife Master Plan is in the process of being reviewed while the Wild Life Protection Ordinance, 1998 (Cap. 26) and the National Parks and Nature Reserves Ordinance, 1998 (Cap. 27) are in the final stages of review



Credit: Getty image • A Proboscis monkey in Bako National Park

Threats to Biodiversity in Sarawak

Generally, the threats to Sarawak's biodiversity are due to human activities and these can be further specified into threats that affect forests, land, species, river and marine waters. An overview is provided in Table 2 below.

Forests	Land Use	Species	River and Marine
 <ul style="list-style-type: none"> • Conversion • Degradation • Fragmentation • Insufficient important habitats protection • Natural disasters 	 <ul style="list-style-type: none"> • Developmental conversion • Agricultural expansion • Mining activities • Infrastructure development and new resettlement 	 <ul style="list-style-type: none"> • Over exploitation (hunting, fishing) • Poaching & illegal activities • Loss of habitats • Lack of data 	 <ul style="list-style-type: none"> • Chemical and bacteriological pollution • Run-offs, sedimentation and erosion • Illegal activities such as sand dredging etc



Credit: Sarawak Forestry Corporation • A sea anemone off the coast of Sarawak

1.2 The Value of the Master Plan

Sarawak's rich biodiversity has and will not be taken for granted and here is where mainstreaming is required.

Related Action on Mainstreaming⁷

More mainstreaming actions and the upscaling of conservation efforts for inter-generational prosperity and socio-economic well-being are called for. Particularly pertinent is the understanding that mainstreaming is an exercise of continuous improvement and the tireless pursuit of related efforts in all possible areas. It must be a consistent feature in decision making and biodiversity management, simply because biodiversity loss and degradation does inevitably occur. It must be prevented or mitigated wherever and whenever possible.

Necessary vigilance is required to anticipate changing trends, future threats and possible negative impacts from man-made or natural causes. This include climate change impacts; which are not writ large in Sarawak currently, but must be anticipated over time. Concerted integration of biodiversity considerations 'across the board' will be necessary to ensure that negative impacts and threats to biodiversity in Sarawak are holistically addressed and minimized.

Progressive Value – multiple firsts

Sarawak recognizes that further progress needs to be made in the area of biodiversity mainstreaming, hence this novel and pivotal policy effort. The SBMP with a focus on biodiversity mainstreaming is, the first of its kind in Malaysia. It aims to assist decision and policy makers across all levels and sectors to arrive at a clearer and uniform understanding of mainstreaming actions. Additionally, it emphasises that related actions are to be undertaken by all.

Sarawak aims to achieve a 'whole of government approach' in matters related to biodiversity; where actions on the subject is not confined to portfolio



or role. Consequently, this Master Plan identifies 'thematic areas' where mainstreaming is deemed most relevant and in relation to it, several measures and actions that have prescriptive value are identified. These actions when implemented and undertaken in a concerted, targeted and collective manner, will help to secure positive outcomes for Sarawak from the biodiversity mainstreaming perspective. This is a very significant and progressive institutional outlook.

The value of Sarawak's efforts in mainstreaming biodiversity is not limited to the region but also supports and contributes significantly towards Malaysia's national biodiversity agenda, global targets of international treaties such as the Global Biodiversity Framework (GBF), the Sustainable Development Goals (SDGs) and various Environment, Social and Governance (ESG) initiatives.



The Kunming-Montreal Global Biodiversity Framework (GBF) supports the achievement of the Sustainable Development Goals and builds on the Convention's previous Strategic Plans, sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030.

Collective Value – The 'Whole of Government' Approach

To reiterate, progress in biodiversity mainstreaming involves all of government, at all levels and across sectors. Mainstreaming actions work best when formalized and where inter-governmental and external participation is optimized.

In the extension of the whole of government approach, the whole of society approach is invariably included, whereby, non-state actors such as business, academia, civil society, the youth, indigenous peoples and local communities are expected to play an important role in delivering biodiversity outcomes for Sarawak.

The above is milestone commitment made by the Sarawak government. The actions and measures identified in this Master Plan, are attempts to encapsulate policy, legal, institutional and administrative means of mainstreaming biodiversity in Sarawak. Accordingly, it aims to organize and synergize efforts in a coordinated fashion at multiple levels of government, (as well as other entities in Sarawak) by working separately and collaboratively towards a shared goal for biodiversity in Sarawak.



CHAPTER

2

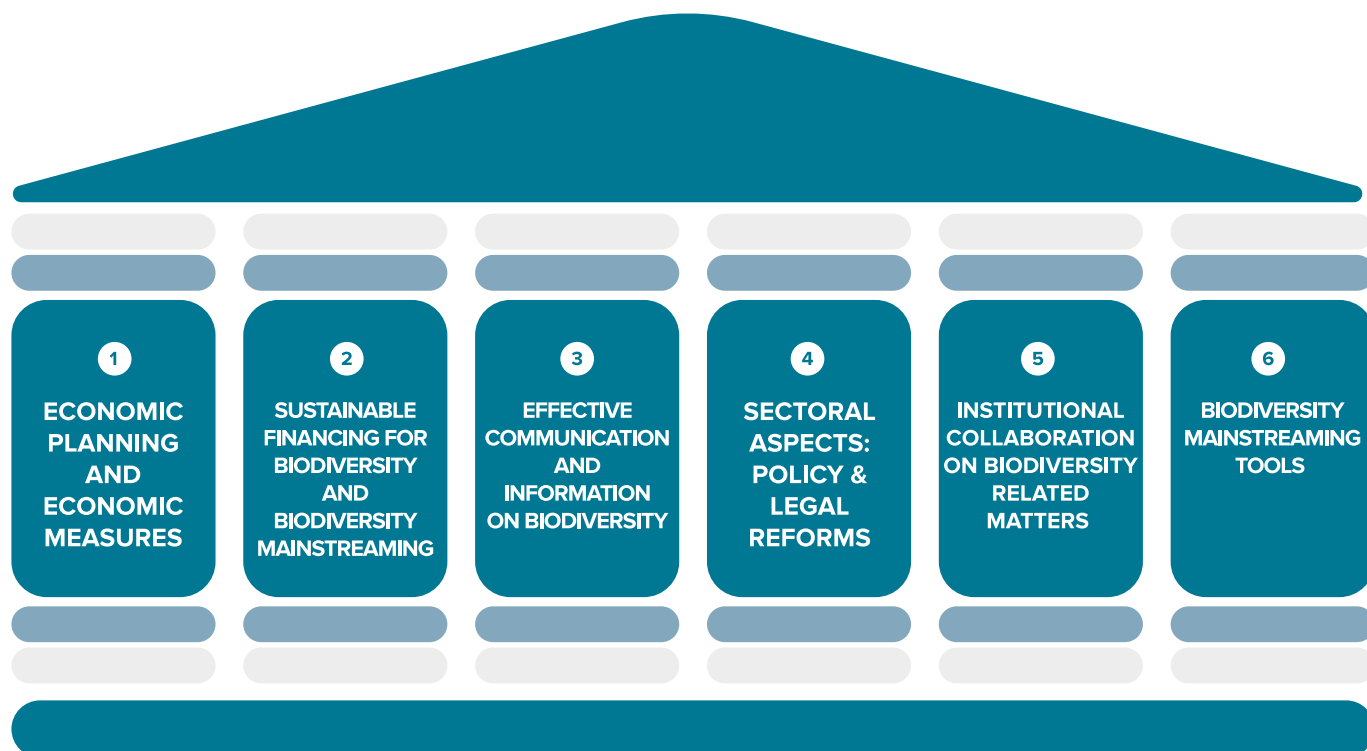
2.1 Key Elements of the Master Plan

Sarawak Biodiversity Mainstreaming Aspects

What foundational aspects govern mainstreaming? What practice is Sarawak embedding?

Biodiversity mainstreaming is an amalgamation of various efforts that will ensure that biodiversity and the services it provides, are appropriately and adequately factored into policies, laws and practices that have an impact on it. Foundational aspects are firstly entrenched by way of several 'Thematic Areas'⁸ acting as focus areas for mainstreaming efforts in Sarawak. These 'thematic areas' are underpinned and supported by a 'Pillar Objective' which elucidates the objectives to be achieved. (see graph below)

The corresponding pillar objectives contain a number of actions and measures that would enable, facilitate, enhance and integrate biodiversity mainstreaming considerations. In short, the **Thematic Areas**, the **Pillar Objectives** and the various **Actions and Measures** embody the composite framework for biodiversity mainstreaming in Sarawak.



What does this practically mean for Sarawak?

It means that every government entity (i.e. agency) bears the responsibility to ensure that the actions and measures identified in this Master Plan are undertaken at their respective level; to the extent its capacity, resources, jurisdiction and authority will allow. This is a new approach for Sarawak.

The Implementation Framework contained in Chapter 3, amongst other matters, provides the manner which higher level governance of this Plan is to be undertaken. But what other 'values' guide the implementation of this Plan? These come in the form of principles to be applied broadly in four (4) main decision-making instances described in Part B below.

Application of Guiding Principles

Bearing in mind that biodiversity mainstreaming involves a whole of government approach, the SBMP cannot be implemented devoid of applying general principles that reinforce sustainable development and sustainable use of biological diversity and natural resources in Sarawak.

All agencies whether directly or indirectly involved in biodiversity protection, conservation, management, or exploitation, are decision makers and implementers of Sarawak's economic, social and environmental agenda.

These agendas are to be pursued and guided by the following principles:

1. With regard to biodiversity, the environment and natural resources, any decision-making pertaining to it ought to –

Exercise the Precautionary Principle

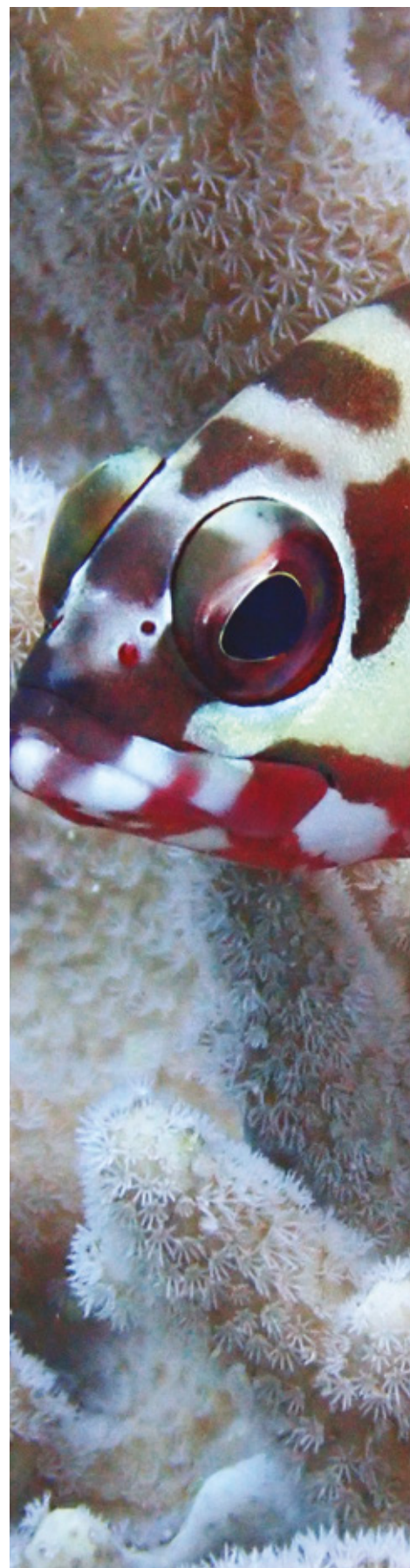
- meaning where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

Ensure Intergenerational Equity

- meaning for all policy decisions taken, be mindful of the responsibility to preserve natural resources and the environment for the benefit of future generations of Sarawakians.

Incorporate the Ecosystem Approach

- meaning whenever possible, strategies and mechanisms are identified for the integrated management of land, water, species and natural resources.



Credit: Lau Chai Ming

- A juvenile grouper in resting on a soft coral off Miri Sibuti Coral Reef National Park

2. With regard to the citizens of Sarawak, their welfare, social inclusivity and representation, ensure –

- that the protection, management, and sustainable use of biodiversity is gender responsive.
- that the needs of indigenous and local communities and their rights in relation to biodiversity and natural resources (sustainable use thereof) are respected. Participation and prior informed consent are necessary approaches.

3. With regard to ensuring effective institutional workings at all levels enabling informed decision on biodiversity –

- that an interdisciplinary, consultative and coordinated approach is applied at appropriate levels of management and administrative governance.
- that there is a strive towards removing barriers and restrictions that impede informed and effective decision-making.
- that there is recognition that all sectors of society have a role in the conservation and sustainable utilization of biodiversity and ecosystem services through their effective participation, consultation and collaboration.

4. With regard to improving governance in relation to sustainable use of biological resources and sustainable development; there are –

- continuous efforts towards improving access to information by making information related to biodiversity and ecosystems to all stakeholders easily available.
- endeavors towards undertaking necessary consultations with all stakeholders; and thereby promoting transparency, especially in any decision-making affecting them or impacting biodiversity.



Credit: Getty Image:
• Misty view of Gunong Mulu National Park

Thematic Areas for Biodiversity Mainstreaming in Sarawak

Thematic Area 1

Economic Planning and Economic Measures



Pillar Objective

The integration of economic considerations including through the promotion of a natural capital approach and other decision-making measures into developmental and sectoral planning in Sarawak

A long term, vital and strategic approach towards achieving better biodiversity outcomes and meeting mainstreaming effectiveness is through the adoption of various economic approaches.

The mainstreaming of economic measures is challenging and complex but will invariably include –

- i) the need to further mitigate or minimize the negative impacts to biodiversity arising from the current or foreseeable economic policies and development planning in Sarawak; and
- ii) the need to review misaligned policies and phase out harmful policies over a period of time. Thereupon, where needed, efforts to align and harmonize these policies with mainstreaming elements are required. The design of synergistic policies that further integrate mainstreaming is requisite.

Whilst all economic and conservation sectors have the responsibility to uptake the various mainstreaming actions and measures contained in this Master Plan, some exceptions in the economic areas apply.

Given the intricacy and the co-relation between economic mainstreaming with development planning, some economic measures and policy initiatives will be undertaken at the highest policy and political levels.



Natural Capital

What is it?

- Elements of biodiversity, ecosystems and environment that provide valuable goods and services to all Sarawakians.
- Examples of such capital – forests, rivers, coastal regions and seas, soil, fish stocks, minerals, plants and vegetation etc.
- Functions provided – food, traditional medicine, clean air, climate regulation, water-cycle, pollution control, pollination, pest control etc.

But what other matters must Sarawak recognize in this context?

Simply, that the gist of any mainstreaming agenda from an economic standpoint is the recognition of the actual ‘value’ of the ‘natural capital’ that biodiversity and ecosystems in Sarawak contain and bring. These are Sarawak’s assets.

It is crucial that the contribution and the role of such ‘assets’ to its people and businesses in Sarawak are safeguarded for the long term.

Connected to this, Sarawak aims for better regional level economic planning and decision-making through building a strong ‘business case’ for biodiversity.

A business case policy standpoint assists towards reinforcing Sarawak’s dependency on its natural capital and how, any risks to these assets can undermine economic continuity. This invariably also involves the private sector, their investments, and operations in Sarawak.

These risks can be minimized and further safeguarded by the government and the private sector.

In essence a natural capital approach is being promoted.

For the betterment of economic planning and the towards recognising an asset and value-based approach, the following measures and actions are to be initiated, undertaken or instituted: -

- i) to support the business case from a value and natural capital-based perspective, a Sarawak level assessment of biodiversity and vital ecosystems exercise is conducted resulting in informed understanding of the monetary, environmental and social values these components provide to the region. Evaluation and assessment mechanisms such as ‘TEEB’⁹ can be considered towards this.
- ii) a review of economic policies, instruments and economic decision-making levers with the objective of identifying incentives (that are harmful) to biodiversity and ecosystems.



Credit: Forest Department Sarawak
• The ariel view of Gunung Pueh Forest Reserve, Semantan

“Businesses are both affected by and rely upon, these ecosystem services and their underlying biodiversity, regardless of organization size, location and sector. Whether they can capitalize on the associating opportunities and avoid risks would, in turn, help build or destroy their competitive advantage”

– CBD –

Based on the results of such reviews, a consequent action is a policy calibration exercise that mainstreams biodiversity.

- iii) to develop a Sarawak regional biodiversity accounting system with appropriate indicators. This supports the integration of biodiversity into decision-making by providing a framework for measuring, monitoring and evaluating biodiversity changes over time.
- iv) to enhance and address the supply side of the economy through various administrative & policy measures. This includes the enhancement and continued promotion of credible certification schemes and tangible biodiversity offset schemes. Other means include the exploration and use of mixed financial instruments (such as taxes, charges, levies, tradable permit schemes). ESG type practices that promote and enable the private sector in Sarawak to adopt sustainable production practices is to be encouraged.

Thematic Area 2

Sustainable Financing for Biodiversity and Biodiversity Mainstreaming



Pillar Objective

Biodiversity positive outcomes are derived, and biodiversity mainstreaming efforts are supported through sustainable financial planning mechanisms and mobilisation of funds towards achieving them

Efforts targeting biodiversity mainstreaming must inextricably include the adequate mobilization of financial resources. Meeting conservation outcomes and addressing the drivers of biodiversity loss in Sarawak not only involves the necessary policy basis and political will, but also requires sustainable financing.

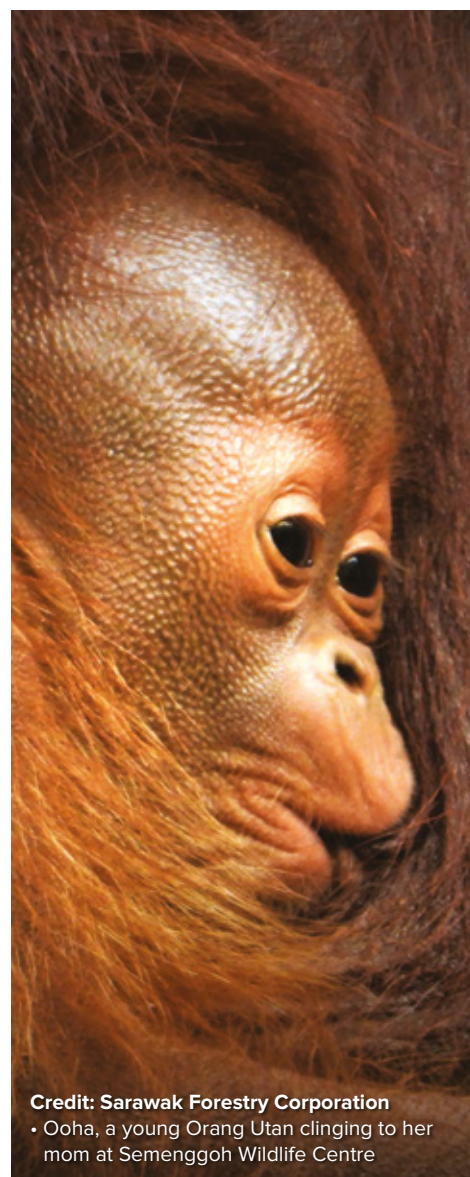
To further this, funds for the conservation, protection, management and the sustainable use of natural resources (which are based on specific strategies) must be at optimal levels.

Associated actions include an analysis into how financial resources and revenues are currently used in Sarawak and, how improved utilization and mobilisation of such resources can help spur required mainstreaming efforts and bring about better results for conservation-based activities.

There are instances where the lack of information and entrenched systematic processes relating to financial expenditure or mobilisation of funds for biodiversity purposes (commonly also referred to as biodiversity financing), can create barriers towards adequate financial planning for biodiversity in Sarawak.

The implementation and execution of ongoing mainstreaming endeavours within various sectors, including those found within this Master Plan, are bound to incur increased governmental expenditure.

Consequently, in furtherance of implementing this Master Plan, some modifications to current State investments and spending on non-essential public matters that may be prioritized over biodiversity matters needs assessment and reconfiguration.

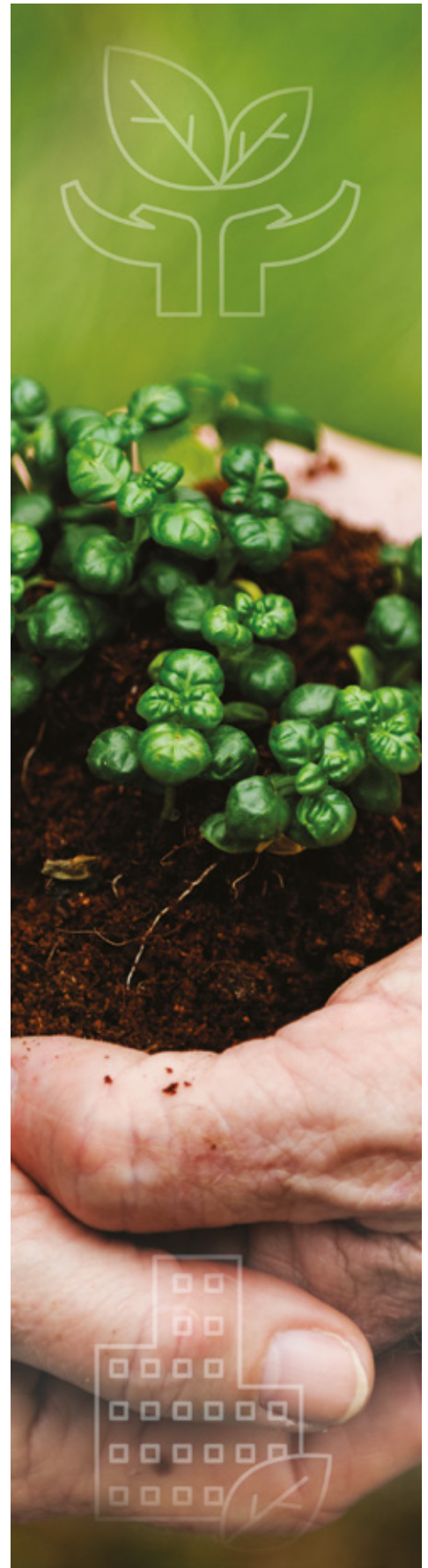


Credit: Sarawak Forestry Corporation
• Ooha, a young Orang Utan clinging to her mom at Semenggoh Wildlife Centre

A proper analysis and evaluation of the use of public funds or expenditure from sources of revenue in Sarawak may be required. Moreover, strategies for the exploration and the identification of new sources of financing are considered vital for sustainable financing of mainstreaming efforts in Sarawak.

For the sustainable financing of both conservation objectives and the undertaking of biodiversity mainstreaming implementation activities; the following measures and actions are to be initiated, undertaken, or instituted –

- i) examine within the legal jurisdiction of Sarawak the introduction of new taxes and the potential use of other economic instruments (market-based mechanisms) such as fees, charges and Payment for Ecosystem Services (PES);
- ii) develop systems in Sarawak to detect biodiversity related expenditure from State funds and other sources of finance with a view to determine adequacy, gaps and priorities in such financing and address them;
- iii) explore, identify and implement various incentives for the private sector that are desirous of contributing financially towards biodiversity conservation efforts. Public and Private partnerships that boost financing opportunities ought to be promoted;
- iv) create a framework of options and opportunities through 'nature-based solutions' for financing such as credible carbon trading arrangements and Biodiversity Offsets Schemes; and
- v) establish a 'Biodiversity Trust Fund' that is able to receive, pool and channel monies towards biodiversity conservation efforts.



Thematic Area 3

Effective Communication and Information on Biodiversity

**Pillar Objective**

Improving awareness, communication, information sharing and coordination between all sectors and levels of government on the importance of biodiversity conservation, protection and management.

In Sarawak, the mainstreaming of biodiversity into policy and development planning is already practised though in essence it may not be expressly labelled as being mainstreaming efforts.

Nevertheless, there is increasing recognition that overarching ‘communication’ with regard to the importance and value of biodiversity in and to Sarawak is needed.

This covers communication on all protection, conservation and management efforts in Sarawak including initiatives that are being undertaken or in the process of being undertaken.

What would this translate to?

Fundamentally, effective communication on these aspects, ideally leads to changes in policy making norms and decision-making considerations at all levels of government.

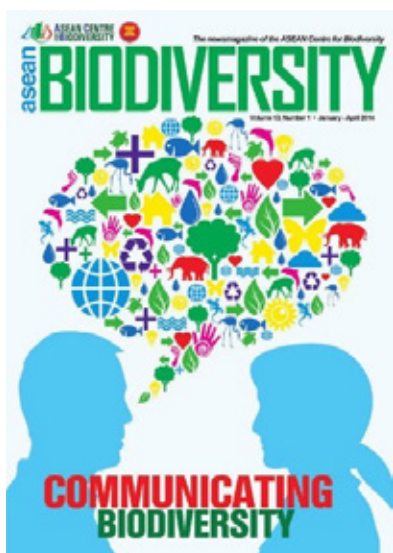
Furthermore, the fabric of knowledge and awareness on biodiversity, including biodiversity related proficiency at all levels is increased and enhanced when Sarawak’s biodiversity agenda is clearly articulated, emphasized and reiterated.

This knowledge and understanding catalyses the creation of necessary links that seek to aid, harmonize and enhance sustainable development planning in the region. Opportunities and avenues for collaboration emerge as a result.



Facets of Biodiversity Communication

- A complete mapping of biodiversity objectives in Sarawak
- Allows for showcase and sharing of processes, progress and success
- Effective communication gets everyone on the same page
- Supports transparency and allows for periodical updating of information



The underlying matter of making all information related to biodiversity by and large available to all stakeholders is also an issue closely related to biodiversity communication.

All government agencies are expected to, in line with the whole of government approach, make biodiversity related information accessible and discernible for use in development and land use planning in a way that aids decision making. Biodiversity information here includes data held by all government agencies and other stakeholders as the case may be.

For meaningful biodiversity mainstreaming to take place, any prevalent administrative cultural patterns that result in any disinclination to share or disseminate data needs changing. This arises, presumably, from the sense of 'ownership' of such data or a misplaced need for confidentiality (amongst other things). Some level of behavioural change is needed so that the sharing of data amongst government agencies becomes a mainstreaming norm.

These incremental institutional changes, both from a behavioural perspective coupled with enabling procedural conditions, are expected to produce meaningful and positive impacts for biodiversity in Sarawak.

A. On the communication of biodiversity conservation, protection and management agenda, including objectives and outcomes; the following measures and actions are to be initiated, undertaken, or instituted –

- i) the development of an overarching 'Biodiversity Conservation Communication Strategy' in the region based on all anticipated target audiences and stakeholders.
- ii) identify and develop efficient mechanisms for effective communication and beneficial sharing and exchange of institutional information between agencies. This extends to mechanisms for the purposeful dissemination of biodiversity related information to stakeholders.
- iii) development of clear, context specific conservation and protection related messaging by relevant agencies.
- iv) engage with entities with influence be it the mainstream media, social media and other public platforms for the widespread communication of biodiversity matters (including but not limited to) progress, achievements, emerging threats etc.



B. On progressing towards better access to biodiversity related information that would aid, facilitate and inform decision making at all levels and moving towards further transparency; the following measures or actions are to be initiated, undertaken, or instituted –

- i) develop biodiversity information sharing guidelines (or protocols and handbooks as the case may be) between all government agencies and with third parties. The guidelines ought to include a template for the official request and use of biodiversity related information on a case-by-case basis.
- ii) establish a digital communication platform between government agencies and external stakeholders in relation to biodiversity information sharing so that Sarawak moves towards an open data system on biodiversity.
- iii) constitute a central clearing house or a central depository of biodiversity related information and the development of biodiversity information systems where such data is managed for use in policy making, awareness building, conservation, education and for any reporting purposes.



Credit: Sarawak Forestry Corporation
• The Clearwater Cave System in the caves of Mulu

Biodiversity Information

“Includes biodiversity data and suite of information collected through observations and research, enforcement and monitoring, or generated via modelling, including technical data which can be numerical or qualitative values to describe variables about species, habitats, or other biodiversity values.”



Credit: Lau Chai Ming
A Gorgonian Sea Fan found in coral reefs of Talang Satang National Park

Thematic Area 4

Sectoral Aspects: Policy & Legal Reforms

**Pillar Objective**

The incorporation of good governance elements for biodiversity mainstreaming that include necessary reforms across sectors through policy, legal and management frameworks

A. Sectoral Policy Reforms

Whilst the SBMP espouses a whole of government approach in relation to mainstreaming biodiversity, it does not take the place, nor can it be substituted for more intensive exercises required for sectoral policy and management reforms.

Mainstreaming elements highlighted in this document assist in making necessary sector-based policy adjustments in order to meet higher sustainability standards.

All necessary revisions and adjustments for sectoral policies are not fully detailed in this Master Plan. This is due to sector specific issues related to biodiversity mainstreaming being dynamic and context-based, varying in scope and subject matter including temporal and geographical scales.

This Master Plan however does lay down the principle overarching components for mainstreaming.



Credit: Sarawak Forestry Corporation
• The Niah Great Cave

Towards ensuring sectoral policy integration of biodiversity mainstreaming components and with a view to reform and align sectoral policies and strategies towards sustainability; the following measures or actions are to be initiated, undertaken, or instituted –

- i) the updating of the relevant sectoral policies and strategies in line with current biodiversity mainstreaming principles and objectives in Sarawak.
- ii) that all economic sectors develop mandatory management plans governing the sector at an appropriate scale or context and formally recognize the need for an ecosystem approach in them.
- iii) the identification and publication of management best practices within the sector and the incorporation of such best practices in a systematic way.
- iv) the identification and use of voluntary instruments that may promote mainstreaming such as certification and eco-labelling towards sustainability efforts.
- v) the use of science and technology-based biodiversity tools towards evidence-based decision making within sectors (see Annexure 1).

B. Law Reforms

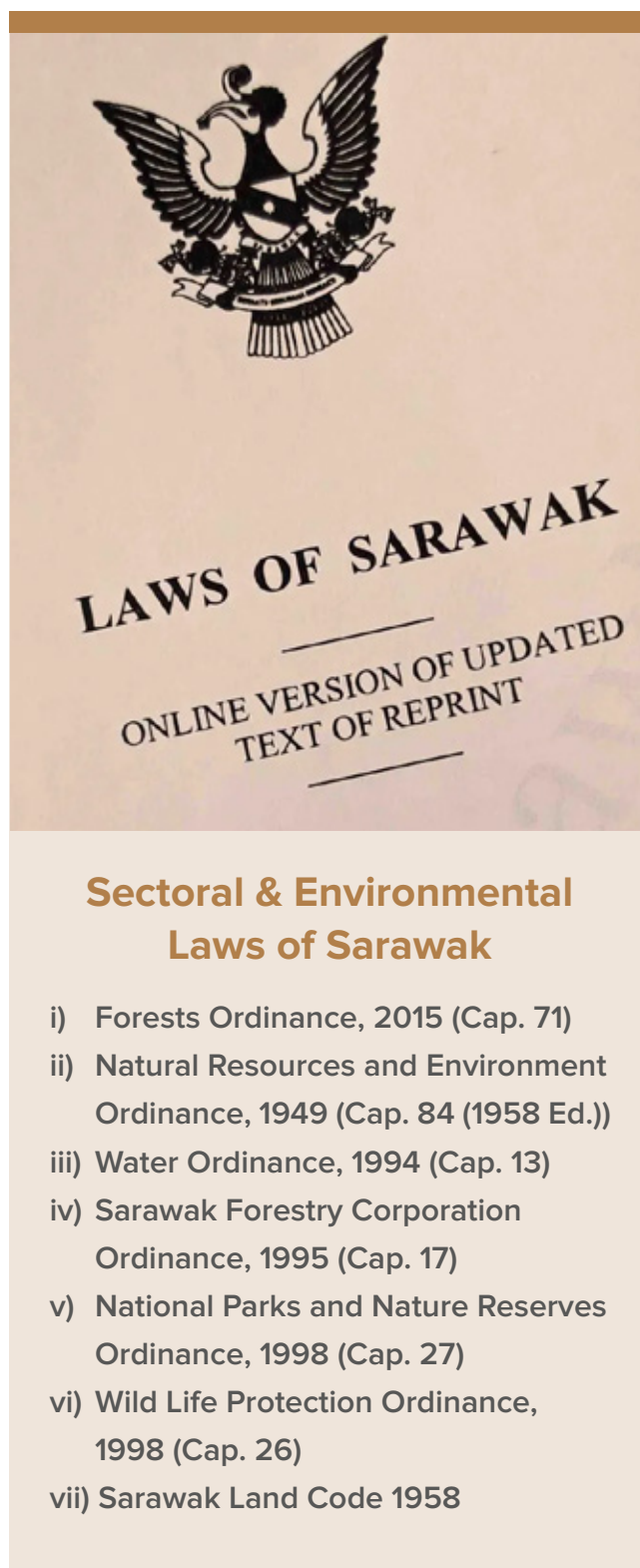
Sarawak has established laws that protect biodiversity hot spots and species primarily through protected areas and wildlife-based legislation. Environmental pollution aspects are based on command-and-control principles as well through project-based impact assessments. Other sector-based legislation also exists¹⁰.

However, for added efficacious biodiversity mainstreaming, more robust, authoritative and instructional legal approaches will be required in many instances. Biodiversity mainstreaming necessitates the utilization of multi-faceted and dynamic approaches rooted in the law, to ensure that biodiversity and ecosystems are adequately protected from current and future threats.

Natural resources in Sarawak must continue to be sustainably used and withstand many management challenges. Necessary facets in law to meet these challenges include: -

- a responsive and adaptive management and protection regime.
- adequate agency empowering provisions.
- conflict resolution mechanism.
- clarity in institutional mandates, duties and functions;
- enhanced joint enforcement; and
- formalized cooperation mechanisms.

Whilst some sectors such as Forestry have advanced in mainstreaming biodiversity aspects in law and policy, other economic sectors in Sarawak such as land use (for agriculture), mining, infrastructure, tourism and fisheries, contain areas for improvement. Even typically conservation and protection-oriented legislation requires a relook for better safeguards.



¹⁰. As part of the process of developing the SBMP, efforts were undertaken to conduct a policy, institutional and legal review of current laws and policies on mainstreaming aspects.

Towards ensuring legal frameworks have sufficient enablers that allow for better and for more robust biodiversity mainstreaming; these regulatory system-based actions are to be taken-

- i) conduct targeted legal gap assessments to determine whether sectoral based legislation in Sarawak is harmonized with sustainable development principles, biodiversity mainstreaming and governance paradigms.
- ii) conduct legal reviews of all conservation-based legislation to determine adequacy of safeguards, protection and management provisions; leading to better governance overall.
- iii) initiate amendments to respective laws where gaps are found and in necessary instances, develop subsidiary legislation that enables operational and procedural aspects of biodiversity mainstreaming.



Credit: Getty image • Sebaning Waterfall in Kapit

Thematic Area 5

Institutional Collaboration on Biodiversity Related Matters



Pillar Objective

Recognition that institutional inclusiveness is crucial in mainstreaming processes and procedures. Additional to this is the recognition that effective mainstreaming is achieved through vertical and horizontal means of communication, collaboration and consultation on matters impacting or involving biodiversity

As is the norm in the Malaysian system of government, the administrative systems are based on the portfolio of a particular Ministry and encompassing various government agencies or departments that ordinarily fall under the purview of such Ministries.

In conjunction with such norms, policy making and implementation of such policies regarding biodiversity are often implemented by a Ministry and through extension by various government agencies or statutory bodies having the 'mandate' over the subject matter. This is the typical top down and strict mandate-based systems that may not work efficiently for biodiversity mainstreaming.

Considerable advances need to be made, not only in vertical policy integration from the Executive to the Ministries, but also from a Ministry to its line agencies and between divisions. Horizontal administrative governance at all levels (Ministry to Ministry) is vital. This is all the more important when new Ministries are being established or expected to be established in the Sarawak administrative trajectory.

Multiple horizontal administrative governance enablers (also involving government divisions under the purview of one Ministry) through collaborations, partnerships and coordinated efforts can be improved.

Biodiversity matters in and of itself involve diverse elements and vastly varied sub sectors and consequently, all possibilities for institutional inter-linkages must be identified.



Credit: Sarawak Biodiversity Centre

• Iban community of Rumah Janang, Selangau, Sibuan in the forest.

Specific portfolio driven norms in biodiversity related administrative governance can lead to rigidity and curtail mainstreaming efforts. The present governing structures and administrative realities can manifest in a number of unfavourable ways., a paucity in streamlined efforts for better biodiversity outcomes, duplication of initiatives, uninformed or lack of clarity for decision making, policy conflicts and other ensuing institutional barriers.

Sarawak aims to alleviate some of these barriers. Better communication appears to be a key element (as described in Thematic Area 3) but no less critical are meaningful consultations which result or culminate in a partnership approach in administrative governance. A whole of government approach will require no less.

Towards incrementally building institutional structures of co-operation and ultimately effective collaboration; these actions and measures are to be initiated, undertaken, or instituted -

- i) strengthen or create cooperative and supportive linkages between all levels of governance in order to avoid duplication of efforts or inconsistencies with regard to biodiversity related policies, strategies and action.
- ii) design and develop instruments of collaboration such as Memorandum of Understandings (MOUs) and Bilateral Agreements (BAs) that facilitate information exchange, formalize pursuit of joint projects, support joint enforcement and encourage partnership-based measures as needed.
- iii) in addition to collaborative arrangements, to review existing 'administrative orders' and legal provisions to determine if these instruments can be better utilized for delegation of rights, authority and responsibility towards facilitating mainstreaming.
- iv) establish meaningful alliance based and collaboration and cooperation platforms between government and non-government entities i.e., scientific researchers, natural resource and biodiversity users (i.e., local and indigenous communities), NGOs and businesses in matters linked to biodiversity management, protection and sustainable use.
- v) undertake exercises to clarify the roles, mandates, responsibility, and authority as the case may be, of all government agencies in Sarawak in order to facilitate coherency and cogency in undertaking and implementing related biodiversity conservation and mainstreaming actions.



Thematic Area 6

Biodiversity Mainstreaming Tools



Pillar Objective

To promote, review, adapt and develop the use of biodiversity and environment mainstreaming tools and associated strategies that aid and inform decision making for development planning in Sarawak. Mainstreaming involves the inclusion of biodiversity values and the incorporation of ecosystem services functioning into developmental, economic and land use planning in Sarawak. It is vital therefore, to resort to the use of specific ‘tools’ for mainstreaming purposes.

These mainstreaming tools may be utilized as ‘knowledge management instruments’ as well as ‘decision-making mechanisms’ for spatial, developmental project and land use planning purposes.

The Environmental Impact Assessment (EIA) requirement, in accordance with the Natural Resources and Environment Ordinance (Cap. 84 (1958 Ed.))¹¹ has been a staple tool for mainstreaming biodiversity and environmental components for project-based activities.

It is not a perfect system and there are areas for improvement. Sarawak is prepared, in order to bring this Master Plan into fruition, to improve the efficacy of existing tools and explore the usage of new ones.

These include the use of a suite of environmental tools which can be project, sector or area based.

All economic sectors that involve land use or utilizes natural resources invariably cause impacts to biodiversity. The use of mainstreaming tools is important for the following reasons-

- to ensure that the impacts from economic development and land use changes from high impact projects are either prevented, minimized or mitigated effectively
- to position such tools to have an effect that will curtail biodiversity loss as well as address any ensuing social impacts
- to recognise that new tools or improvements made to existing mainstreaming tools provide better avenues for area based and context-based planning for a large region such as Sarawak (See Annexure 2)
- to ensure within reasonable means, that the cumulative impacts of development and project-based activities are determinable, evaluated and as a consequence, mitigation and other appropriate management actions can be undertaken or directed be undertaken

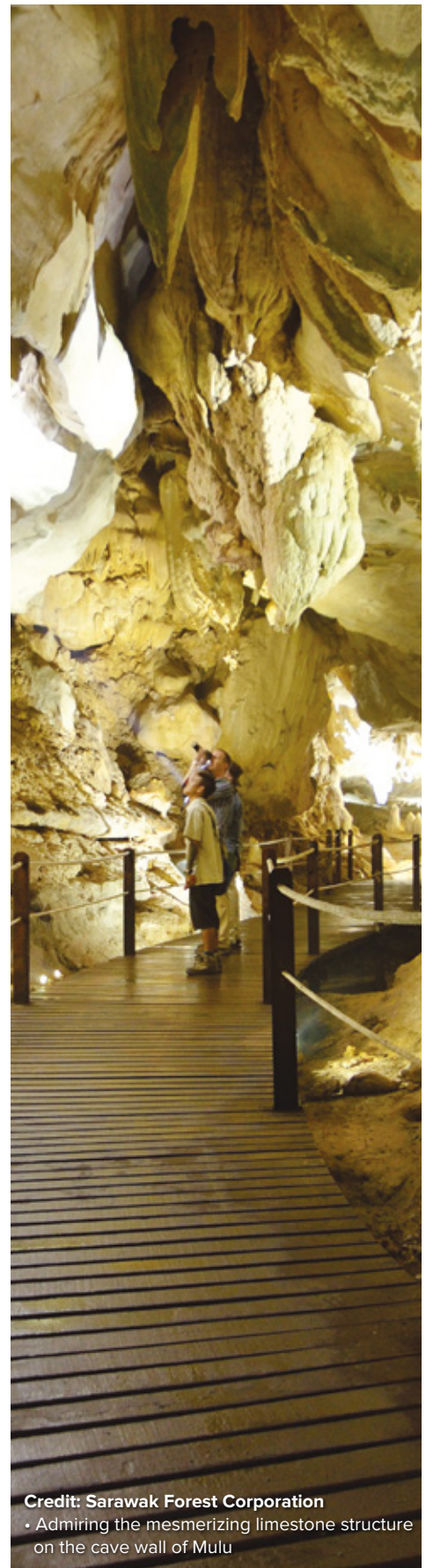


Credit: Lau Chai Ming

• The Great Barracuda (*Sphyraena barracuda*), a large, apex predator ray-finned fish in the waters of Miri-Sibuti Coral Reefs National Park.

Towards effective use of biodiversity mainstreaming tools and to meet the objectives laid out above, these actions and measures are to be undertaken, instituted, or initiated -

- i) the law (including associated regulations and orders), relating to Environmental Impacts Assessments (EIAs) drafted by Sarawak are reviewed for gaps, loopholes and grey areas. Review exercise against matters of efficacy, wider consultation and participation is also a key. Where required, relevant amendments are made to such laws, procedures and guidelines.
- ii) determine feasibility of including more biodiversity criteria, cumulative impacts and stronger remedial actions into Environmental Management Plans (EMPs) where relevant
- iii) that the standards for Environmental Impact Assessments Reports (Terms of Reference aspects) are more robust and conform to higher standards of technical quality and veracity with regard to professional standards.
- iv) explore the feasibility of developing policy and legal frameworks for Strategic Environmental Assessments (SEAs) as an evolving mechanism from EIAs. Whilst the EIA is a project and site-based mechanism, SEAs aim to operate as a diagnostic tool to integrate not only biodiversity concerns but also social considerations into high level policies, plans and programs.
- v) to further integrate key biodiversity data into existing land use database systems as well as review existing land use plans (such as the Sarawak Land Use Master Plan, Division and District plans, shoreline, river and watershed management plans) with a view to incorporate biodiversity elements.



Credit: Sarawak Forest Corporation
• Admiring the mesmerizing limestone structure on the cave wall of Mulu

CHAPTER

3



Credit: Lau Chai Ming

• A nudibranch (*Phyllida varicosa*), a soft-bodied marine gastropod molluscs that lack external shells found on the reefs in Miri-Sibuti Coral Reefs National Park

3.1 SBMP Implementation Framework

Overview of the Implementation Approach

The successful implementation of this ambitious, aspirational and largely exploratory Master Plan rests ultimately on two key areas.

Firstly, a proactive attitude towards implementation propelled and spurred by the whole of government approach towards biodiversity mainstreaming. Secondly, a holistically descriptive and prescriptive implementation framework.

An overview of the implementation framework is provided below. It includes:

i) The establishment of a Biodiversity Mainstreaming Steering Committee

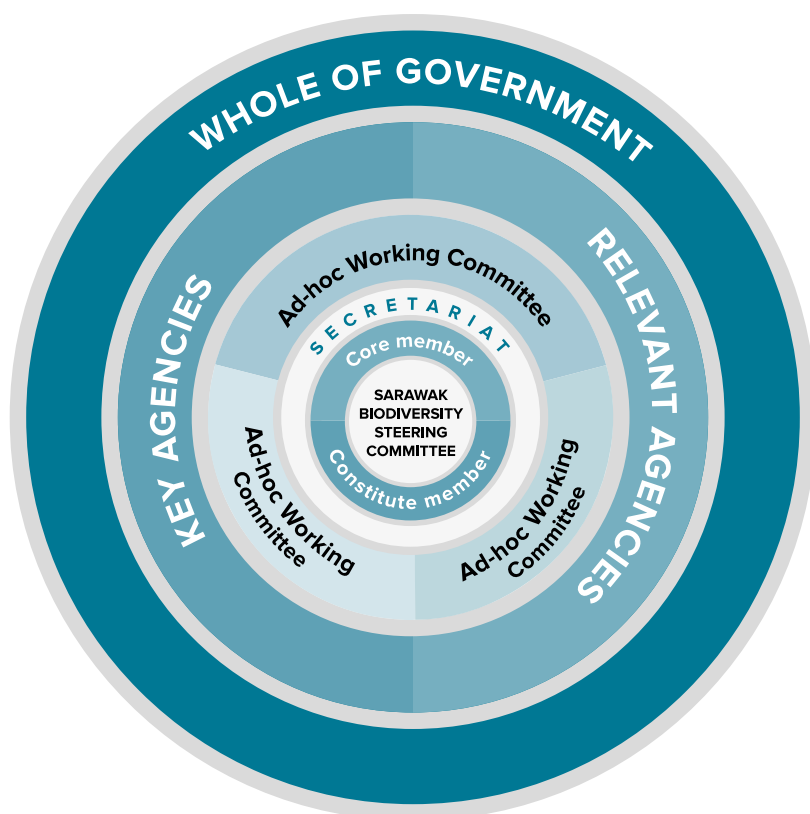
which is established on a two-tier basis to provide policy and directional value and support to the SBMP implementation. This will be known as the Sarawak Biodiversity Steering Committee (SBSC).

ii) The institution of Ad Hoc Technical, Advisory Support and Working Committees

is established (on a needs basis) to provide technical advice and support towards the implementation of the actions and measures in the Master Plan. In other cases, an Ad Hoc Committee in a working role can be commissioned to undertake specific tasks in relation to the SBMP implementation.

iii) Through 'Suggested Activities' and 'Possible Indicators' (see Chapter 4)

for actions and measures identified under the Thematic Areas of this Master Plan, a detailed Table will identify specific details (by way of activities and indicators as appropriate) to assist implementation. Additionally, the Table will identify the list of agencies expected to initiate, lead, or undertake these actions as the case may be.



The structure of the Sarawak Biodiversity Steering Committee

Specific Details on the Implementation Framework

Sarawak Biodiversity Steering Committee (SBSC)

Core Members

A Sarawak Biodiversity Steering Committee (SBSC) is to be formed consisting of two levels of membership. Through a Sarawak Cabinet approval, following ‘core members’ of the SBSC consisting of these members may be appointed: -

1. **Chairman**
The Premier of Sarawak in his capacity as Minister of MUDeNR
2. **Deputy Chairman**
to be appointed by the Core Committee
3. **Secretary**
Permanent Secretary of MUDeNR
4. **Sarawak State Secretary**
5. **Sarawak State Attorney General**
6. **Minister of Finance & New Economy (Second Minister)**
or State Financial Secretary

Constitute Members

A further number of ‘constitute’ members of the SBSC are expected to be appointed by the core members above. Constitute members may be replaced, removed, or added by the core members as they deem fit and necessary. They include:

1. **Minister for Energy and Environmental Sustainability Sarawak** (or the Permanent Secretary as the alternate)
2. **Minister for Infrastructure and Port Development Sarawak** (or the Permanent Secretary as the alternate)
3. **Minister for International Trade, Industry and Investment Sarawak** (or the Permanent Secretary as the alternate)
4. **Minister for Public Health, Housing and Local Government** (or the Permanent Secretary as the alternate)
5. **Minister for Food Industry, Commodity and Regional Development** (or the Permanent Secretary as the alternate).
6. **Minister for Tourism, Creative Industry and Performing Arts Sarawak** (or the Permanent Secretary as the alternate)
7. **Minister for Youth, Sports and Entrepreneur Development Sarawak** (or the Permanent Secretary as alternate)
8. **Minister for Women, Early Childhood and Community Wellbeing Development** (or the Permanent Secretary as the alternate)
9. **Minister for Transport Sarawak** (or the Permanent Secretary as the alternate)
10. **Minister for Utility and Telecommunication Sarawak** (or the Permanent Secretary as the alternate)
11. **Minister for Education, Innovation and Talent Development Sarawak** (or the Permanent Secretary as the alternate)



Credit: Sarawak Biodiversity Centre
• Bidayuh teenagers of Bidayuh from Kampung Sapit, Padawan strike a pose at one of the homestays operated by the locals.



Credit: Sarawak Biodiversity Centre
• A member of the Tabun community from Kampung Kuala Mendalam, Mendamit, Limbang.

Role and Functions of the SBSC

The Sarawak Biodiversity Steering Committee (SBSC) will exercise oversight and provide strategic guidance on the SBMP implementation. An operational and procedural modus operandi will be developed to guide the workings and proceedings of the Committee.

The SBSC shall have the following roles and functions :-



Provide necessary impetus for action towards the implementation of the SBMP by all levels of government in Sarawak



Support the use of biodiversity mainstreaming principles and recommend ways in which the said principles are best executed within existing strategic initiatives, sectoral planning and economic development in Sarawak



Recommend matters related to biodiversity that can be decentralized to ensure effective implementation at all levels



Promote various incentives (financial or otherwise) that would further encourage the implementation of the SBMP across sectors and stakeholders



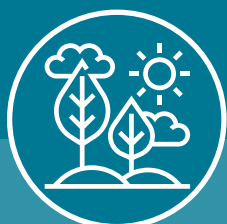
Provide direction specifically in tandem with the development of economic or budget planning for Sarawak components within the SBMP



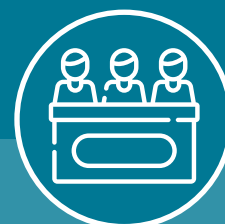
Direct to establish knowledge platforms to bring together government agencies at different levels, the business sector, indigenous people, local communities and stakeholders to address the technical issues with respect to mainstreaming biodiversity, environmental stewardship and corporate social responsibility aspects



Issue directive on the execution of specific actions within the SBMP on the development of Guidelines, Standard Operating Procedures, etc



Promote programmes of action in each sector aimed at raising awareness on biodiversity mainstreaming as well as the delivery of the SBMP



Call for the institution of Ad Hoc Committees as appropriate towards the implementation of the SBMP and prescribe a 'TOR' for these Committees and



Exercise any other oversight role and function required on the SBMP deemed appropriate

Secretariat to the SBSC

The Ministry of Natural Resources and Urban Development (i.e., the Biodiversity and Environment Division) will function as the Secretariat to the SBSC.

The functions of the Secretariat include to: -

- a. assist and provide administrative support
- b. undertake some matters of coordination of the implementation of the SBMP
- c. organize all meetings and consultations as required
- d. prepare or make requests on any matter for decision making
- e. undertake the coordination of the reporting on the implementation of the SBMP through cooperation and liaison with all other agencies
- f. undertake any other function that the SBSC deems appropriate

Credit: Freepik • Aerial shot colorful buildings surrounded by trees



Credit: Sarawak Forest Corporation

Ad Hoc Technical, Advisory & Working Committees

Ad Hoc Committees are to be established on a case by case and needs basis to address specific matters. The purpose of constituting Ad Hoc Committees will be to provide strategic and technical advice, guidance and where required, undertake a working role in order to facilitate the implementation of the SBMP through tangible outputs.

The Constitution of Ad Hoc Committees

Under the direction and supervision of the SBSC, the technical, advisory, or working Ad Hoc Committees (as may be required) shall be established.

Any Ad Hoc Committee is to be constituted with the following prescriptions: -

- i. the name assigned to such a Committee by the SBSC;
- ii. the tenure of such Committee shall be decided by the SBSC;
- iii. the members of such a Committee - comprising experts in their field from the government, the private sector, Non-Governmental Organisations (NGOs) or academia;
- iv. a short clear description of the objectives and purpose of such constitution; and
- v. the Terms of Reference (TOR) of such a Committee (including functions, tasks, duties and any tangible outputs expected).

The Remit of an Ad Hoc Committees

1. Ad Hoc Committees are expected to be established in any number of the following circumstances -

- i. where specific existing knowledge, skill, experience and competence is required towards guiding the implementation of the SBMP in relation to the Thematic Areas identified in this Master Plan. Strategic advice to the SBSC may also fall within this remit;
- ii. where specific advice on data, the interpretation thereof and indicators for biodiversity monitoring and evaluation is required;
- iii. where sectoral specific guidance on scientific matters, technological use, legal issues, economic tools and best practices adoption are required to further mainstreaming efforts; and
- iv. where a government agency driven production of SBMP related material is required.

2. Any Ad Hoc Committee in its Advisory, Technical or Working role may be called to -

- i. provide to the SBSC or on the direction of SBSC to any government agency or statutory body, scientific advice pertaining to science and evidence-based decision making;
- ii. provide technical advice to the SBSC or on the direction of the SBSC to any government agency or statutory body on the feasibility, the value and impact of the use of any approaches (whether economic, social, or environmental in nature), methodologies, legal frameworks, or relevant tools for biodiversity mainstreaming;
- iii. prepare necessary technical reports, advisory notes, policy briefs etc. as required;
- iv. identify new and emerging issues relating to the conservation and sustainable use of biodiversity which will require further biodiversity mainstreaming application;
- v. develop guidelines or templates for governmental use for SBMP reporting purposes;
- vi. undertake assessments or evaluations as required related to biodiversity and any other matter deemed necessary for biodiversity mainstreaming purposes;
- vii. review the SBMP for purposes of updating, augmenting, or refining the SBMP and its components.



CHAPTER

4

Credit: Sarawak Forestry Corporation
• Seduku, among the Orang Utans that roam around the forests surrounding Semenggoh Wildlife Centre

4.1 SBMP Monitoring And Evaluation Framework

Implementation, Monitoring and Evaluation Framework: Possible Indicators and Suggested Activities

Governance in the context of this SBMP is detailed under the implementation framework and involves two key components described in Part A and B respectively.

Part A

The monitoring and evaluation of progress of the SBMP implementation; with the identification of possible indicators and suggested activities.

(See detailed table below).

Part B

The development of criteria-based reporting frameworks



• Credit: Sarawak Forestry Corporation

• A pair of Clownfish hiding among the tentacles of a sea anemone off the coast of Sarawak.

Part A (Indicator Framework)

All suggested activities and possible indicators are co-related to the actions and measures identified in accordance with each Thematic Area detailed in Chapter 2.

In accordance with mainstreaming aspects, several indicators are focused on 'outcomes' but may also involve: -

- **policy and outputs-based indicators**
- **input-based indicators (such as financing and mobilisation of resources)**

For better coherence, some actions and measures from the Thematic Areas are grouped together. The 'suggested activities followed by possible indicators' which are listed and described are guidance based and non-exhaustive in nature. The non-exhaustive factor also applies to the agency identification.

The comprehensive 'table-based' framework (Thematic Area Table) is provided to assist and guide the delivery of the SBMP. Additionally, the items in the Thematic Area Table assist towards facilitating early and mid-phase initial monitoring and evaluation of the progress of implementation.

'Key Agencies' are identified to connote that a specific mandate, administrative power, capacity, or feasibility exists to institute or initiate an action or measure. Such an agency may 'lead' the action in an appropriate manner.

'Relevant Agencies' are all parties expected to undertake the actions and measures in their respective capacities.

Amendments to this table will be made as the implementation phase of the SBMP is underway. Reiterations, refinements and additions or supplementary indicators and activities will be added over time in the Master Plan review processes.



SBMP & Agencies Interpretation

Key Agency

where specific mandate, capacity and administrative power exists to lead the process of implementation but not solely responsible for complete implementation



Relevant Agency



where all parties that are responsible and expected to undertake actions and measures





Thematic Area 1 Table

Economic Planning and Economic Measures





Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
1. Develop and promote a ‘natural capital-based approach’ & a ‘business case’ perspective for Sarawak	i) To identify the relevant ecosystem services that are relevant to Sarawak’s economy ii) To estimate the benefits that these vital ecosystems provide & the cost of replacing these services (value-based estimations) iii) To conduct wide awareness building activities and communication of natural capital values to the public and private sector iv) To develop fact sheets on natural capital value and the business case nexus	<ul style="list-style-type: none"> • Trends in the understanding of the monetary, environmental and social values of Sarawak’s biodiversity amongst government and the private sector • New or enhanced activities reflecting natural capital importance through sustainability and conservation practices • Trends in corporate embodiment of natural capital protection and conservation in company policy. • Company policies reflect mechanisms to reduce risk and impacts on biodiversity • Biodiversity restoration efforts by private and public enhanced 	<div>  Key Agency </div> <ul style="list-style-type: none"> • Ministry of Natural Resources and Urban Development (MUDeNR) • Natural Resources and Environment Board (NREB)
			<div>  Relevant Agencies </div> <ul style="list-style-type: none"> • Sarawak Forestry Corporation (SFC) • Forestry Department Sarawak (FDS) • Land and Survey Department (L&S) • Sarawak Biodiversity Centre (SBC) • Economic Planning Unit Sarawak (EPU)

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
2. Assessment of biodiversity and vital ecosystems conducted and a biodiversity accounting system developed	i) To map all ecosystems and their services in Sarawak based on values, species, habitat representation, connectivity and other criteria ii) To conduct baseline assessment to provide information about the status of biodiversity at the beginning of the accounting period iii) To identify relevant biodiversity indicators that provide information about the status and trends of biodiversity developed and endorsed (species richness, health of ecosystems) ¹² iv) To set quantitative and qualitative targets to guide the conservation and management of biodiversity	<ul style="list-style-type: none"> • Trends showing improved understanding of socio-economic dependencies in Sarawak • Compendium of Sarawak Ecosystems Accounting¹³ Published • Trends in increased policy or legal references to ecosystems value and services and associated safeguards across sectors • Increase in Totally Protected Areas with vital ecosystems • Expansion of current Totally Protected Areas (TPAs) Networks 	<div>  Key Agencies </div> <ul style="list-style-type: none"> • Ministry of Natural Resources and Urban Development (MUDeNR) • Ministry of Education, Innovation and Talent Development (MEITD)
			<div>  Relevant Agencies </div> <ul style="list-style-type: none"> • Sarawak Forestry Corporation (SFC) • Forestry Department Sarawak • Sarawak Biodiversity Centre (SBC) • Land and Survey Department (L&S) • Sarawak Research and Development Council (Sarawak RDC) • The Sarawak Tropical Peat Research Institute (STROPI) • Department of Fisheries DOF) • NGOs and Academia as necessary

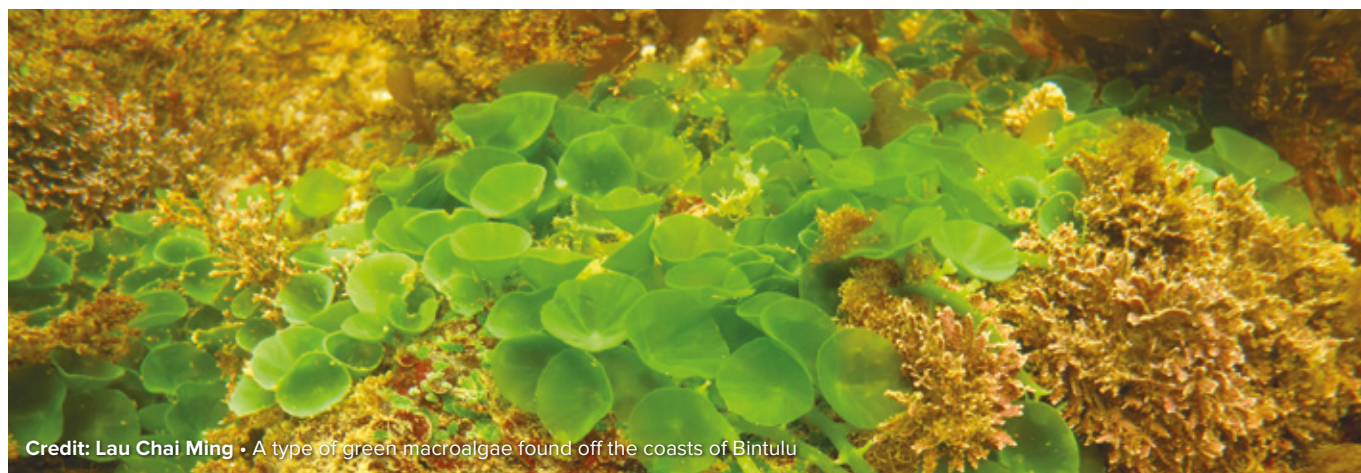
12. See Chapter 2

13. Ecosystem Accounting can take several approaches. Spatial, assets or services-based approaches can be utilised. A compendium can consist of various types of data, maps charts and tables and other ecosystem accounting expression



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
<p>3. Addressing the supply side of the economy through administrative and policy measures.</p> <p>This includes the use of financial instruments so that the private sector adopt sustainable production practices.</p>	<p>i) To determine policy levers for incorporation of sustainable production practices</p> <p>ii) To release a strong ESG policy framework</p> <p>iii) To test financial instruments in pilot programmes</p>	<ul style="list-style-type: none"> • Trends in voluntary and mandatory certification schemes • Number of financial instruments implemented • Increased in credible and sustainable ESG related initiatives • increase in areas under certification from a baseline (to be set or determined or collated) 	<div>  Key Agency <ul style="list-style-type: none"> • Economic Planning Unit (EPU) Sarawak </div> <div>  Relevant Agencies <ul style="list-style-type: none"> • Natural Resources and Environment Board (NREB) • State Financial Secretary Office (SFS) • Ministry of Public Health, Housing and Local Government Sarawak (MPHLG) • Ministry of Finance & New Economy • Ministry of International Trade, Industry and Investment (MINTRED) • All other sectoral agencies </div>

Thematic Area 2 Table




Sustainable Financing for Biodiversity and Biodiversity Mainstreaming



Credit: Lau Chai Ming - A type of green macroalgae found off the coasts of Bintulu

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
1. New market based financial instruments are promoted and identified for sustainable financing including taxes, charges, fees, fiscal transfers, PES etc.	i) To conduct feasibility studies on newer financial mechanisms	<ul style="list-style-type: none"> EFT¹⁴ and other newer financial mechanisms earmarked for biodiversity 	<div>  Key Agencies </div> <ul style="list-style-type: none"> Economic Planning Unit (EPU) Sarawak State Financial Secretary (SFS) Office Ministry of Natural Resources and Urban Development (MUDeNR) Ministry of Tourism, Creative Industry and Performing Arts Sarawak (MTCP) Ministry of International Trade, Industry and Investment MINTRED)
	ii) To provide legal advice to determine imposition and implementation of newer instruments	<ul style="list-style-type: none"> Budgeting Lines for biodiversity and mainstreaming created 	
	iii) To develop guidance material and best practices identification for new market-based instruments	<ul style="list-style-type: none"> Multiple sources of biodiversity finance emerge 	
	iv) To expand capacity on framework design for financial instruments or arrangements; negotiation and implementation	<ul style="list-style-type: none"> Increased level of projects that finance biodiversity 	
	v) To establish policy basis and rationale for each instrument	<ul style="list-style-type: none"> Increased EFT allocation for Sarawak based on performance 	
	vi) To introduce Green Procurement, Finance and Fiscal Policies	<ul style="list-style-type: none"> Increased percentage of procurement to take into account environment criteria and standard, percentage of borrowing to fund sustainable project and percentage of budget provided for biodiversity programs/projects 	
			<div>  Relevant Agencies </div> <ul style="list-style-type: none"> Sarawak State Attorney General's Chamber (SAG) Sarawak Forestry Corporation (SFC) Forest Department Sarawak (FDS) Sarawak Biodiversity Centre (SBC)

14. Ecological Fiscal Transfer from the Federal Government on a yearly basis.

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
2. Develop review-systems to detect biodiversity related expenditure and means of addressing any gaps	i) To institute a BIOFIN ¹⁵ type exercise to determine public expenditure for biodiversity ii) To develop guidelines on biodiversity spending and reporting	<ul style="list-style-type: none"> • Number of successful projects and the achievement of conservation targets and objectives • Increased variety and number of biodiversity projects • Outcome based budgeting improves 	 Key Agencies <ul style="list-style-type: none"> • Sarawak Financial Secretary (SFS) Office • Ministry of Natural Resources and Urban Development (MUDeNR)
3. Explore, identify, and implement various incentives for the private sector that contribute towards Sarawak's biodiversity and promote public-private-partnerships that boost financing opportunities	i) To compile from international experience types of incentives feasible for the Sarawak private sector (sector appropriate) ii) To develop 'Due Diligence' policies pertaining to private sector and 3 rd party investment. iii) To develop robust templates (contractual frameworks) for funding agreements iv) To conduct surveys related to private sector funding interest	<ul style="list-style-type: none"> • Increase in the total amount of biodiversity financing overall • Increase in the number of public-private partnerships for biodiversity conservation (number of partnerships, MoUs signed etc) 	<div>  Key Agency <ul style="list-style-type: none"> • Sarawak Financial Secretary (SFS) </div> <div>  Relevant Agencies <ul style="list-style-type: none"> • All Ministries and Line Agencies • Sarawak State Attorney General's Chambers (SAGC) </div>



15. BIOFIN – A Biodiversity Finance Solution Mechanism involving these steps:

Step 1: Finance Policy and Institutional Review: Assess the policy, institutional and economic context for biodiversity finance and map existing finance solutions.

Step 2: Biodiversity Expenditure Review: Measure and analyze current biodiversity expenditures from the public and private sectors, donors and non-governmental organizations (NGOs).

Step 3: Biodiversity Financial Needs Assessment: Make a reliable estimate of the finances needed to achieve a country's biodiversity goals and compare this to current biodiversity expenditures and other resources available.



Step 4: Biodiversity Finance Plans: Develop a Biodiversity finance plan that identifies and mobilizes the resources and policies required to implement the most suitable finance solutions.


Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
4. Create a framework of options and opportunities through ‘nature-based solutions’ for financing such as credible Carbon and Biodiversity Offsets Schemes	i) To undertake nature-based solutions feasibility evaluations ii) To develop a Sarawak Biodiversity Offsets Policy iii) To develop a Sarawak Net Zero policy iii) To develop Guidelines for nature-based solution schemes	<ul style="list-style-type: none"> • Trends in areas under a credible nature-based solution schemes or projects • Trends in less reliance on natural resources exploitation for revenue • Trends in financial support for rehabilitation, restoration, and community involvement • Number of areas under high quality carbon project schemes 	<div>  Key Agencies </div> <ul style="list-style-type: none"> • Ministry of Natural Resources and Urban Development (MUDeNR) • Ministry for Energy and Environmental Sustainability (MESSTY) • Natural Resources and Environment Board (NREB) • Forest Department Sarawak (FDS)
			<div>  Relevant Agency </div> <ul style="list-style-type: none"> • Sarawak Forestry Corporation (SFC)




Thematic Area 3 Table

Effective Communication and Information on Biodiversity



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
A. Communicating on Biodiversity Generally 1. The development of an overarching 'Biodiversity Conservation and Communication Strategy' for Sarawak	i) To commission communications experts on Strategy Development ii) To socialize the Strategy and its objectives iii) To set up Multi Stakeholder Groups-contributing towards technical veracity in communication aspects iv) To conduct Stakeholder consultations on messaging and use of terminology v) To translate the Strategy into Multiple languages	<ul style="list-style-type: none"> Enhanced understanding of biodiversity and conservation objectives (based on surveys, feedback etc.) Number of available materials related to biodiversity Rise in awareness levels across government on biodiversity efforts 	<div>  Key Agencies <ul style="list-style-type: none"> Ministry of Natural Resources and Urban Development (MUDeNR) Ministry of Education, Innovation and Talent Development (MIETD) Unit Komunikasi Awam Sarawak (UKAS) </div> <div>  Relevant Agencies All ministries and their agencies </div>


Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
2. Mechanisms for effective two-way communication and beneficial sharing of institutional information between agencies and mechanisms for the purposeful dissemination of biodiversity related information to stakeholders	i) Enhance or strengthen the framework for biodiversity information dissemination ii) Devise a system of regular information updates and circulars on key developments related to biodiversity iii) Conduct surveys to determine bottlenecks on receiving, gathering, or finding information on biodiversity	<ul style="list-style-type: none"> Trends in less bureaucracy in information gathering seen Reporting frameworks on conservation, environmental treaties and audits improve Trends in uniformity in messaging on biodiversity at all levels of government and society Trends in context specific¹⁶ information availability 	 Key Agencies <ul style="list-style-type: none"> Unit Komunikasi Awam Sarawak (UKAS) Sarawak Multimedia Authority (SMA)
			 Relevant Agencies <ul style="list-style-type: none"> All ministries and their agencies
3. Engage with entities with influence be it the mainstream media, social media, and other public platforms for the widespread communication of biodiversity matters (progress, commitments, achievements etc.)	i) To appoint high-profile Ambassadors on biodiversity for Sarawak ii) To enter into joint ventures or partnership with mainstream and social media iii) To refine policy commitment messaging and officially adopt standard definitions to avoid misquotation	<ul style="list-style-type: none"> Trends in media, where they become agents of information dissemination on behalf of Sarawak government Trends in international and national understanding of Sarawak's heritage and conservation achievements Number of media generated collection of resources on biodiversity Upward trends in eco-tourism 	 Key Agencies <ul style="list-style-type: none"> Unit Komunikasi Awam, Sarawak (UKAS) Ministry of Tourism and Environment Sarawak (MTCP) Sarawak Tourism Board
			 Relevant Agencies <ul style="list-style-type: none"> TV Sarawak & Sarawak Media Group Sarawak Tourism Board Credible Social Media Entities



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
B. Institutional Biodiversity Information (Data) Sharing 1. Create biodiversity information sharing guidelines (or protocols or handbooks as the case may be) between all government agencies and 3rd parties and in conjunction, establish a digital communication platform between government and non-state actors related to biodiversity data sharing	i) To develop and circulate Biodiversity Information Sharing guidelines ii) To develop a comprehensive definition of 'Biodiversity Information' that is subsequently adopted in relevant Ordinances iii) To hire experts to create or enhance digital security iv) To establish Ad-Hoc Committee	<ul style="list-style-type: none"> Trends in improved publication of Guidelines Trends in less bureaucracy in information sharing and usage 	 Key Agencies <ul style="list-style-type: none"> Sarawak Multimedia Authority (SMA) Ministry of Natural Resources and Urban Development (MUDeNR)
2. Establish a central depository or a clearing house for biodiversity related information and data and the development of biodiversity information systems	i) To formalise a suite of biodiversity information for depository purposes ii) To conduct an options study for depository or clearing house mechanisms to determine institutional feasibility iii) To officially create portals for information and officially appoint gatekeepers	<ul style="list-style-type: none"> Trends where natural resource managers and policy makers practice informed decision making Trends showing less reliance on institutional memory and more on digitized information Trends in biodiversity related research due to information technology 	<div>  Key Agencies <ul style="list-style-type: none"> Ministry of Natural Resources and Urban Development (MUDeNR) Forest Department Sarawak (FDS) Sarawak Forestry Corporation (SFC) Sarawak Biodiversity Centre (SBC) </div> <div>  Relevant Agencies <ul style="list-style-type: none"> All relevant ministries and their agencies holding biodiversity information. </div>



Thematic Area 4



Sectoral Aspects - Policy and Legal Reforms



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
A. Policy Reforms 1. Update sector policies and strategies in line with current biodiversity mainstreaming principles and objectives	i) To conduct policy alignment processes with mainstreaming aspects ii) To identify negative incentives within the sector driving biodiversity loss iii) To undertake capacity development towards mainstreaming in sectoral policy iv) To identify stakeholders including financing needs for policy review consultation exercises	<ul style="list-style-type: none"> • Trends in reduction of key pressures on biodiversity • Trends in sustainable use of biodiversity • Rate of loss of biodiversity, pollution, degradation, and land conversion is reduced 	 Relevant Agencies Respective sectoral agencies

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
2. All sectors develop management plans governing the sector and formally recognize the need for an ecosystem approach	<ul style="list-style-type: none"> i) To determine direct pressures to biodiversity from respective sectors ii) To conduct sector level natural resource assessments or carrying capacity studies iii) To develop, revise and adapt all management plans in line with mainstreaming and sustainability aspects 	<ul style="list-style-type: none"> • Trends in ecosystem health • Trends in rebound of natural resources and improved livelihood and environmental resilience • Recovery of degraded habitats and ecosystems • Trends in food and water security • Improvements in sustainable management practices 	 <p>Relevant Agencies</p> <p>Respective sectoral ministries and agencies</p>
3. Introducing management best practices within particular sectors	<ul style="list-style-type: none"> i) To build capacity on management best practices within a sector ii) To establish partnerships with advanced institutions and other agencies on best practice guidance iii) To commission or conduct relevant studies on management best practices (pilot studies included) iv) To publish relevant guidelines arising from any study 	<ul style="list-style-type: none"> • Evidence of transformative change within the sector • Positive changes in sector's perception • Trends in a particular sector's sustainability outlook 	 <p>Relevant Agencies</p> <p>All respective sectoral agencies</p>

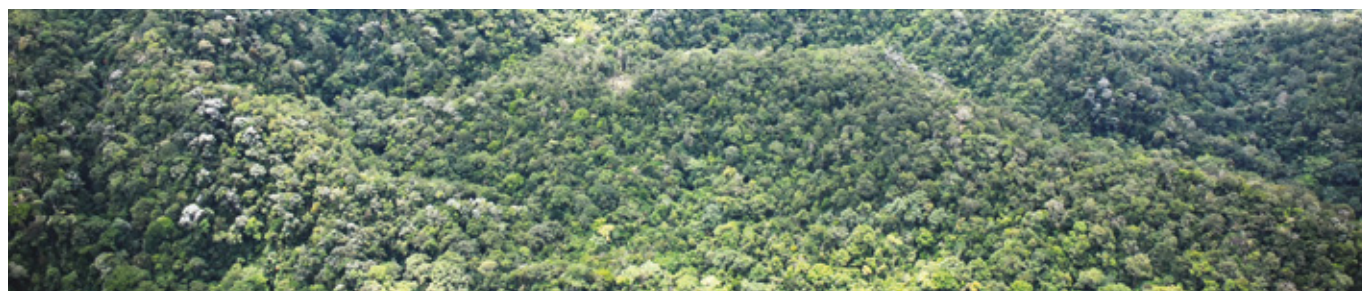
Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
4. The identification and use of voluntary instruments such as certification and eco labelling supporting sustainability efforts	<ul style="list-style-type: none"> i) To identify and create awareness around various schemes suitable in the Sarawak context ii) To undertake studies to determine preparedness for certification and labelling schemes iii) To establish knowledge platforms on relevant schemes iv) To increase products to be certified and compliance toward international and domestic certifications and ecolabelling 	<ul style="list-style-type: none"> • Trends in uptake of various certification/ labelling schemes • Demonstrable rise in market value and demand for Sarawak's sustainable products • Increase in certified products originating from Sarawak 	 <p>Relevant Agencies</p> <p>All respective sectoral agencies</p>
5. The use of science and technology-based biodiversity tools towards evidence-based decision making	<ul style="list-style-type: none"> i) To determine feasibility of relevant tools in the Sarawak context ii) To conduct field testing of tools and publish relevant findings iii) To estimate and budget the costs related to the use of biodiversity tools iv) To design and develop capacity building programmes on biodiversity tools 	<ul style="list-style-type: none"> • Trends in biodiversity data collection and reliability • Biodiversity monitoring show improvements • Records of evidence-based decision making 	 <p>Relevant Agencies</p> <ul style="list-style-type: none"> • Forest Department Sarawak (FDS) • Sarawak Forestry Corporation (SFC) • Sarawak Biodiversity Center (SBC) • Ministry of Education, Innovation and Talent Development (MEITD) • Ministry of Urban Development & Natural Resources (MUDeNR) • Natural Resources and Environment Board (NREB) • Public Works Department Sarawak (PWD) • Department of Drainage & Irrigation Sarawak (DID)

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
B. Legal Reforms 1. Conduct legal assessments related to biodiversity are harmonized with sustainable development principles, biodiversity mainstreaming and governance paradigms	i) To assess sectoral legislation (i.e. forestry, land use, fisheries, mining etc.) against sustainability and environmental principles ii) To identify and appoint experts to assist in strengthening sectoral legislation iii) To conduct and create awareness on how new legal aspects are to be implemented in practice iv) To seek legal opinions and present it to policy makers to enhance understanding of requirements v) To review and identify areas lacking clarity in several aspects including mandate to address overarching biodiversity relevant issues vi) To conduct public consultations on proposed legal reforms	<ul style="list-style-type: none"> • Trends in overall governance of biodiversity in economic sectors • Trends in governance as they relate to ESG • Trends in integrity of natural resource use • Roles, mandates, responsibility and authority are amended for clarity and coherence 	<div>  Key Agencies </div> <ul style="list-style-type: none"> • Ministry of Urban Development & Natural Resources (MUDeNR) • Respective Ministries/ agencies governing sectoral laws with advice by the State Attorney General's Chambers (SAGC) <div>  Relevant Agencies </div> <p>All respective sectoral agencies</p>



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
2. Legal reviews of legislations to determine its adequacy in safeguards, protection, management and governance provisions	i) To prepare Regulatory Impact Statement (IRS) (e.g., on wildlife, protected areas, pollution based, rivers and forests) ii) To appoint legal experts to assist in legislation strengthening iii) To create awareness on how new legal aspects are to be implemented in practice iv) To seek legal opinions and present the same to policy makers to enhance understanding v) To conduct public consultations on proposed legal reforms	<ul style="list-style-type: none"> • Trends in higher governance for biodiversity conservation and protection • Enforcement trends improve • Trends in reduction of offences and violations • Trends in wildlife population • Trends in degradation of habitats and biodiversity loss • Trends in protection of genetic resources 	 Key Agencies i) Respective Ministries/ agencies governing sectoral laws with advice by the State Attorney General's Chambers (SAGC)
			 Relevant Agencies <ul style="list-style-type: none"> • Agencies with governing conservation legislation or conservation-based provisions in sectoral laws
3. Propose amendments to respective laws where gaps are found and in necessary instances, develop subsidiary legislation that enable operational and procedural aspects of biodiversity mainstreaming	i) To prepare legal opinions or proposals on justification for the amendments to the laws ii) To draft amendment Bills iii) To draft subsidiary legislation	<ul style="list-style-type: none"> • Trends in legal precedent within Malaysia (new areas of law and governance) • Number of local legal expertise in biodiversity, mainstreaming, natural resources and environment management • Good Governance related outcomes 	 Key Agencies <ul style="list-style-type: none"> • Respective Ministries/ agencies governing sectoral laws with advice by the State Attorney General's Chambers (SAGC)



Thematic Area 5

Institutional Collaboration on Biodiversity Related Matters



Credit: Forest Department Sarawak • The dense forest of Batang Ai National Park

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
1. Strengthen or create cooperative and supportive linkages between all levels of government (to reduce duplicity and enhance cooperation)	i) To review of balance score card, Key Focus Areas (KFAs) and <i>Kumpulan Inovasi dan Kerja's</i> (KIKs) efforts ii) To create proper templates for collaboration on projects, initiatives and programmes iii) To establish mandatory information circulation methodology on current and pipeline projects, plans and initiatives etc. iv) To establish mediation avenues v) To develop collaboration instruments such as MOUs and Bilateral Agreements (BAs) that facilitate joint projects and ventures	<ul style="list-style-type: none"> • Trends in redundancy and duplicity • Collaborative and coordinated programmes • Trends in enhanced outcomes for programmes and projects • Higher levels of sophistication on collaboration initiatives • Trends in reduction of conflict • Efficient use of financial resources through joint exercises 	 Relevant Agencies All Agencies
2. Review existing mechanisms to determine if these instruments can be better utilized for delegation of rights, authority and responsibility towards facilitating mainstreaming	i) To compile list of legislation containing delegation of authority ii) To complete surveys in areas where barriers to mainstreaming may exist iii) To conduct consultations on areas for expanded delegation of powers and functions	<ul style="list-style-type: none"> • Decentralization trends emerge • Trends in shared responsibilities • Uptake in joint enforcement arrangements 	 Relevant Agencies Relevant ministries and their agencies



Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
3. Establish alliances including collaboration and cooperation-based platforms on biodiversity between government and non-government entities such as scientific researchers, NGOs, corporations and local and indigenous communities	<ul style="list-style-type: none"> i) To prepare lists of collaboration areas (e.g., science, technology, research, enforcement and traditional knowledge) ii) To establish biodiversity-based Roundtables, Forums, Advisories etc., consisting of multiple stakeholders (at regional, national and international levels) iii) To establish rosters of various technical and science-based experts iv) To undertake exchange of expertise or capacity development programmes v) To establish incentives for Sarawak biodiversity related research 	<ul style="list-style-type: none"> • Trends in multistakeholder involvement in biodiversity • Level of implementation of policies increase • Trends in science and policy linked decision making 	 Relevant Agencies All related ministries and their agencies
4. Undertake exercises to clarify the roles, mandates, responsibility and authority as the case may be, of all government agencies in order to facilitate coherency and cogency in undertaking and implementing related biodiversity conservation and mainstreaming actions	<ul style="list-style-type: none"> i) To review and identify areas lacking clarity, mandate to address overarching biodiversity relevant issues 	<ul style="list-style-type: none"> • Number of ministerial or departmental charter on public interaction, protocol and mandate 	 Relevant Agencies All related ministries and their agencies




Thematic Area 6

Biodiversity Mainstreaming Tools



Credit: Forest Department Sarawak

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
1. Review Environmental Impacts Assessments (EIAs) for gaps, loopholes and grey areas	i) To convene task force of EIA experts (government and non-government actors) ii) To initiate review of EIA laws and regulation iii) To undertake amendments recommended	<ul style="list-style-type: none"> Enhanced project level mitigation of environmental impacts Cumulative impacts reduced from large scale projects reduced Enhanced informed decision making in development projects Trends in degradation and pollution 	 Key Agencies <ul style="list-style-type: none"> Natural Resources and Environment Board (NREB) Division and District Offices in Sarawak with advice by the State Attorney General's Chambers (SAGC)
2. The standards (technical and professional) for Environmental Impact Assessment Reports are robust and of higher quality	i) To develop new guidelines for EIA reporting consistent with higher technical standards ii) To benchmark EIA against robust and higher international standards	<ul style="list-style-type: none"> Reduction of EIA rejection due to poor standards and technical quality 	 Key Agencies <ul style="list-style-type: none"> Natural Resources and Environment Board (NREB) Other Technical Agencies related to EIAs and EMP

Actions and Measures	Suggested Activities	Possible Indicators	Key and Relevant Agencies
3. Determine more biodiversity criteria, cumulative impacts and remedial action to be incorporated into Environmental Management Plans where relevant	<ul style="list-style-type: none"> i) To identify and prepare a list of potential biodiversity criteria ii) To prepare feasibility reports as necessary and identify interventions within EMP iii) To carry out capacity assessments towards monitoring biodiversity related criteria 	<ul style="list-style-type: none"> • Wider biodiversity elements covered in mitigation aspects against the impacts • Robust Environmental Management Plans (EMPs) 	 Key Agencies <ul style="list-style-type: none"> • Natural Resources and Environment Board (NREB) • Other Technical Agencies related to EIAs and EMP
4. To integrate key biodiversity data into existing land use database systems and review existing land use and other plans	<ul style="list-style-type: none"> i) To conduct reviews that determine the adequacy of biodiversity related data in relevant plans ii) To summarize and update the Sarawak Land Use Master Plan 	<ul style="list-style-type: none"> • Trends in forest and habitat degradation • Trends in river pollution, sedimentation and other pollution aspects • Trends in spatial planning shows demarcation of biodiversity and high ecosystems areas 	 Key Agencies <ul style="list-style-type: none"> • State Planning Authority (SPA)  Relevant Agencies <ul style="list-style-type: none"> • Ministry of Natural Resources and Urban Development (MUDeNR) • Economic Planning Unit (EPU) Sarawak • Ministry of Utility and Telecommunication Sarawak • Ministry of Food Industry, Commodity and Regional Development Sarawak (M-FICORD)

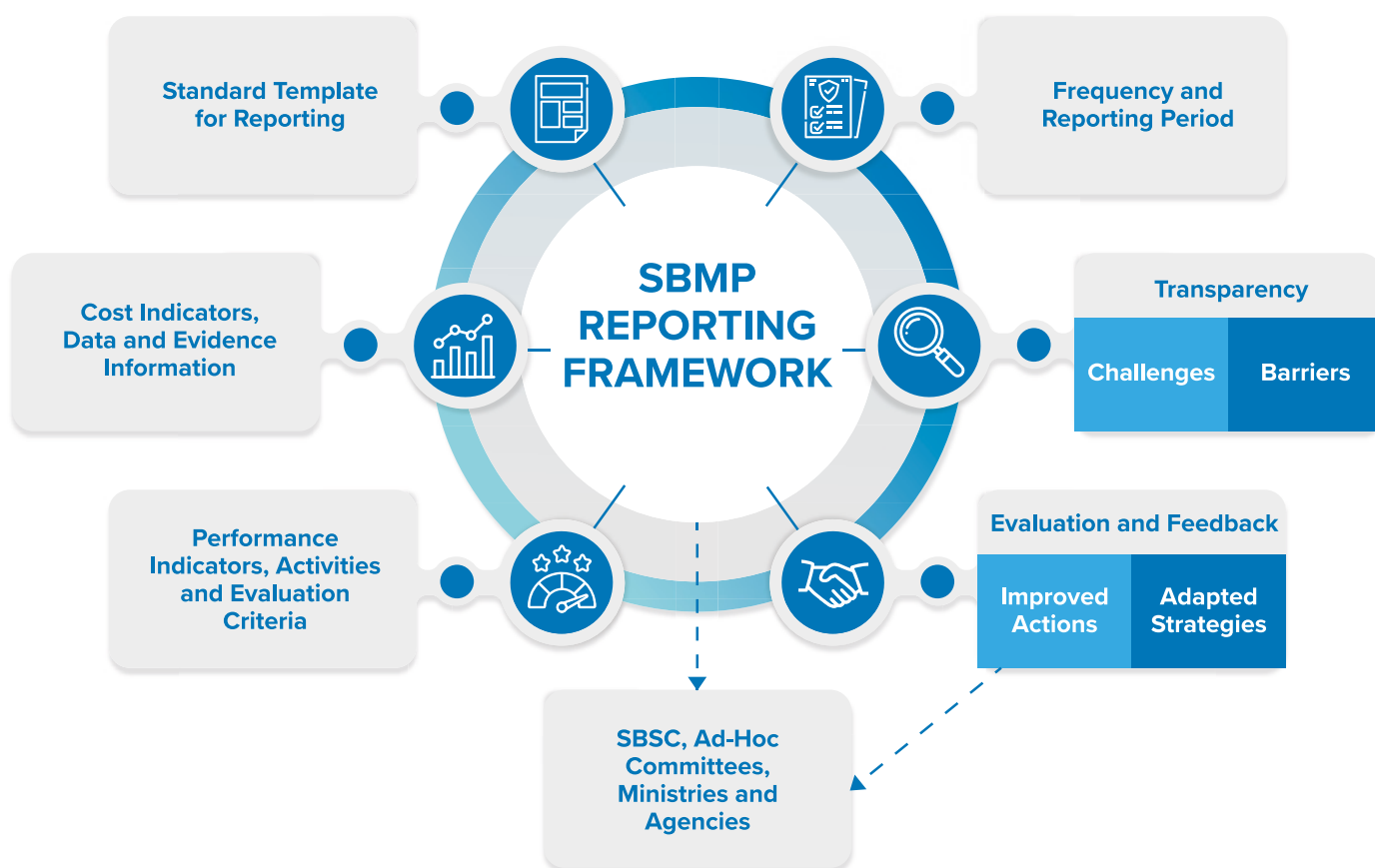
Part B (Developing a Reporting Framework)

Part A above maps out the suggested activities and provisions for an indicator framework towards implementation action including monitoring progress of the SBMP. A complete governance system of the SBMP will require a reporting framework.

A full and complete reporting framework design is expected to be led by MUDeNR in its position and capacity as Secretariat to the SBSC.

In developing any SBMP reporting framework, the following components shall be factored into the design: -

- a standard format or template is designed for the use of all agencies in reporting;
- report on challenges and barriers faced by implementors;
- prescribes the frequency and reporting period;
- states the purpose and the potential recipients of such reports (e.g. the Cabinet, SBSC, relevant Ministries or any SBMP related Ad Hoc Committee);
- a system for feedback submission on related matters (e.g. where SBMP implementation actions can be improved, remedied, adapted etc.);
- a method of evaluation of whether key mainstreaming objectives are met (including performance indicators and other criteria); and
- cost indicators including any other content the Secretariat deems relevant for reporting purposes.



The SBMP Reporting Framework in a Nutshell

CHAPTER

5



Credit: Sarawak Forestry Corporation • A beautiful Lantern Bug (*Pyrops intricatus*) found in the Gunung Mulu National Park.

5.1 Moving Forward

As alluded to in the earlier parts of this Master Plan, this is a priming and aspirational policy document. Essentially it is an action-oriented Plan and cannot be deemed as an all-encompassing or an exhaustive framework for biodiversity mainstreaming.

Other collateral efforts which are not embedded fully in this Master Plan will need to be instituted in order to make biodiversity mainstreaming implementation holistic.

Two stand-alone outputs that are expected to aid implementation of this Master Plan and support further biodiversity mainstreaming include the development of: -

- i) A Capacity Development Plan consistent with a whole of government implementation; and**
- ii) A suitable framework of Biodiversity Indicators for Sarawak**

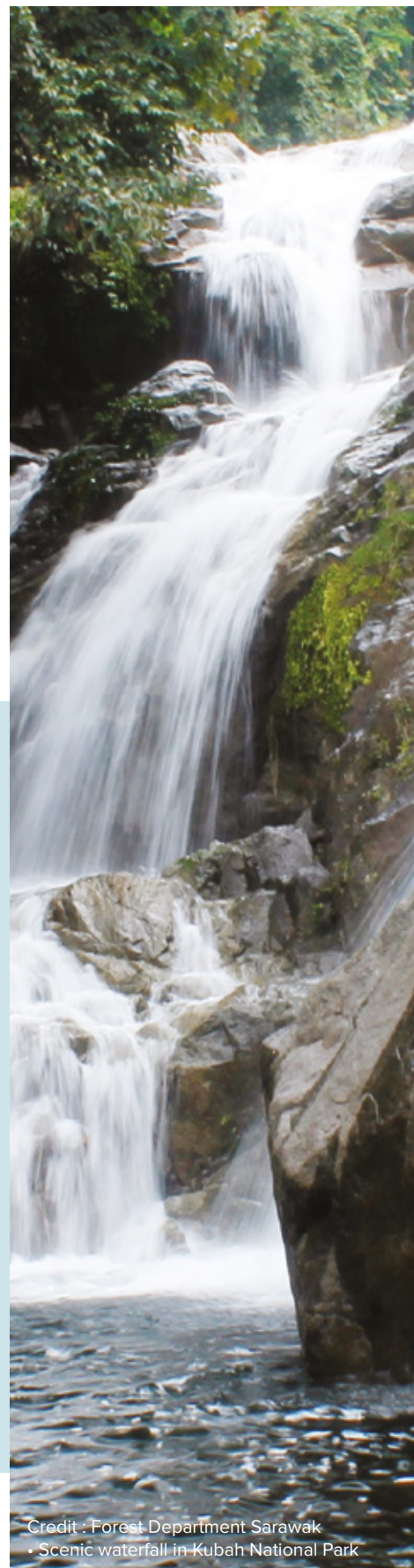
Components of A Capacity Development Plan

Capacity Development in the above context is defined as “the process of developing and strengthening the skills, abilities, processes and resources that agencies require to adapt, transform, thrive and be efficient in carrying out duties, roles and the implementation of any policy, plan or program.”

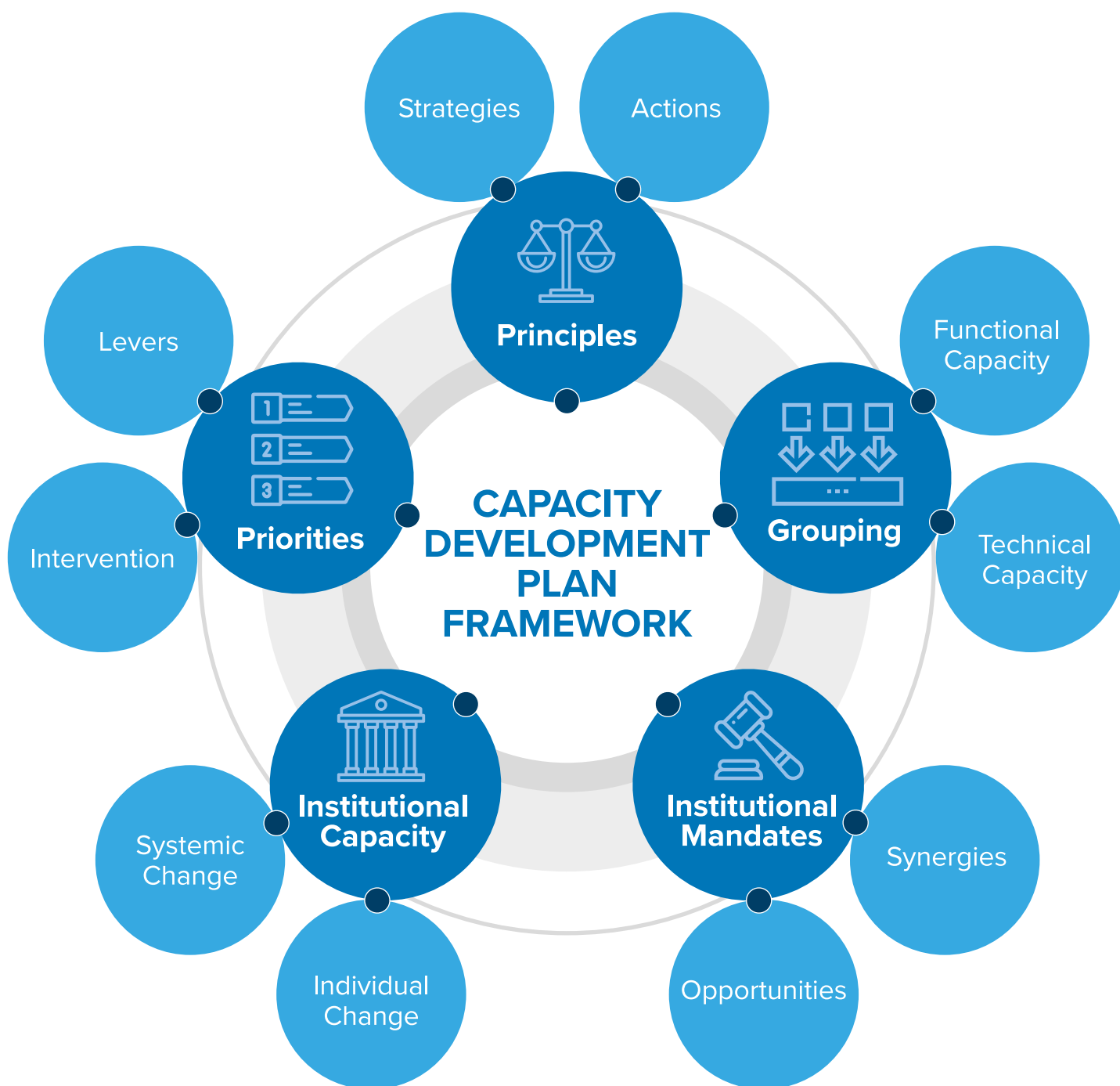
Preliminary assessments on capacity to mainstream biodiversity have been conducted. These assessments and relevant baseline data are expected to be utilized by any incoming relevant Ad Hoc Committee that would oversee or develop a ‘SBMP and Biodiversity Mainstreaming Capacity Development Plan’.

At minimum such a plan is expected to contain these elements:

- i. adoption of the **definition** of ‘Capacity Development’ provided above (for context and clarity on scope)
- ii. a set of **overarching principles** that would guide capacity building actions, strategies and related interventions
- iii. a **grouping** or organization of capacity requirements into functional and technical aspects towards SBMP implementation
- iv. a compilation of a full list of **mandates** of all Ministries and agencies under their purview (to build synergy and identify opportunities)
- v. a **list of areas** where systemic, institutional, or individual capacity development would produce a specific desired effect in relation to the SBMP
- vi. a consolidated list of possible capacity development **levers** and **interventions**
- vii. **priority setting** for capacity building programmes and financial aspects based on the SBMP



Credit : Forest Department Sarawak
• Scenic waterfall in Kubah National Park



Snapshot of the Capacity Development Framework

Biodiversity Indicators Development

As with capacity development, the furtherance of a biodiversity mainstreaming agenda cannot be meaningfully considered complete without the existence of Sarawak specific biodiversity indicators. In addition to indicators that monitor the progress of this Master Plan, a separate set of indicators is still required to monitor biodiversity at large.

Why are these indicators this important?

If Sarawak is to successfully mainstream biodiversity and meet policy commitments made or expected to be made on biodiversity, biodiversity indicators act to provide crucial information and guidance on biodiversity health and therefrom, necessary actions.

This Master Plan is not premised on the basis on setting quantitative targets¹⁸ for biodiversity and as such numerical biodiversity indicators are not reflected in any of the actions. However, as Sarawak enhances its commitment to sustainability, a biodiversity target setting exercise will need to be undertaken eventually, as the Kunming-Montreal Global Biodiversity Framework (KMGBF 2030) calls for the need to conserve at least 30 percent of the world's terrestrial and marine biodiversity collectively. Sarawak is in a good position to contribute meaningfully to these global targets.

Additionally, such indicators will assist statewide assessment and monitoring of Sarawak's biodiversity status. A stand-alone Sarawak specific consolidated 'biodiversity indicator framework' connected to 'targets for biodiversity' is eventually the aim. Biodiversity indicators and the indicators identified in this Master Plan may ultimately overlap, but this is not a problem as common or generic indicators can be used to determine multiple policy objectives. Such indicators which are based on specific biodiversity aspects (including science-based ones) i.e. species abundance, genetic diversity and resources, habitat connectivity, ecosystem health, trends in water pollution and land use changes. Together, these indicators assist to monitor biodiversity related trends in Sarawak.



By no means is the above a simple task but Sarawak will embark on an exercise to determine a Sarawak level suite of indicators. These indicators will ultimately provide the pathway towards determining two matters; how well we have mainstreamed biodiversity and how well Sarawak fares in conservation efforts.

CONCLUSION

This Master Plan spans over 7 years, aligning with the PCDS timeframe. The plan aims for a whole-of-government approach to not just succeed but to eventually excel with the actions, measures and institutional procedures outlined in this Plan and through implementing high-level policy interventions. The plan will continue to be refined and improved as needed to ensure its effective implementation. This calls for unwavering and continuous effort from all levels of government in Sarawak to embark on this journey toward successful implementation of the Sarawak Biodiversity Master Plan, thus preserving Sarawak's rich biodiversity for future generations.

18. Quantitative indicators are normally set based on percentages, hectares and other relevant status and trends.

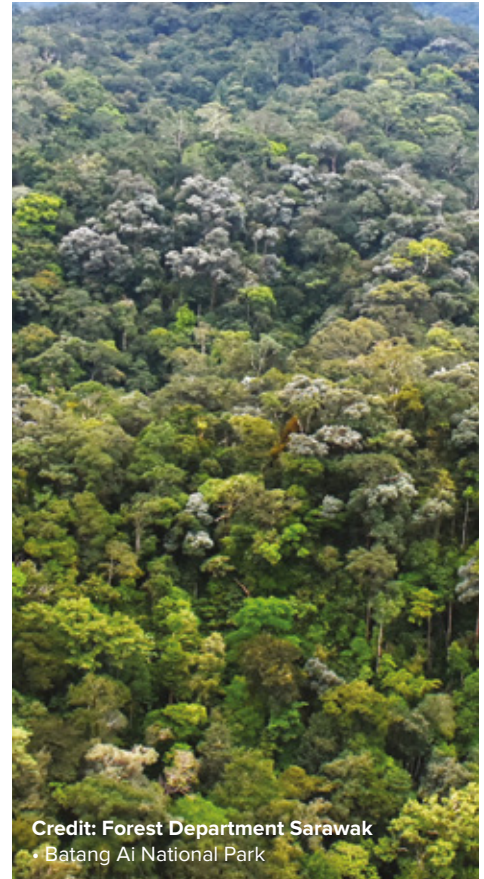
Annexures

Annexure 1 : Examples of Sectoral and Area Based Tools

1. Sectoral and area based tools

1.1. Climate Change Vulnerability Assessment Tools for Coastal Ecosystems - recommended for addition

Using climate change vulnerability assessment (VA) tools that consider the local context and data availability, is important first step in climate change adaptation and mitigation process that can be lengthy. The VA encourages application of a participatory approach and this ensures ownership of the results by the community and local governments, which then eases adaptation actions. Climate hazards can negatively impact coastal ecosystems and communities. These hazards include increasing air temperature, increasing sea-surface temperature, sea-level rise, changes in amount and pattern of rainfall, and ocean acidification. Four coastal VA tools were developed under the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) which allow participation of coastal communities in assessing their vulnerability followed by developing adaptation measures to increase their resilience towards climate change.



Credit: Forest Department Sarawak
• Batang Ai National Park

The four coastal VA tools are:

- i. Integrated Coastal Sensitivity, exposure and Adaptive Capacity to Climate Change Vulnerability Assessment tool (ICSEA-C-Change)
- ii. Coastal Integrity Vulnerability Assessment Tool (CIVAT)
- iii. Tool for Understanding Resiliency of Fisheries (TURF)
- iv. Climate change vulnerability Assessment and Local Early Action Planning (LEAP)

The ICSEA-C-Change offers scoping and rapid reconnaissance of the vulnerabilities of integrated ecosystem services to synergistic climate change impacts. It adopts a relative scoring system, which allows users to generate a vulnerability ranking for several simultaneously assessed sites. The CIVAT measures the vulnerability of the physical coast by analysing natural and anthropogenic factors driving beach processes. The TURF analyses the vulnerability of fisheries by incorporating variables from three major components, which are fisheries, reef habitat and socio-economic conditions. The climate change vulnerability assessment and LEAP tool measures the vulnerability of ecological and social resources depended by coastal communities and provides steps in developing a robust action plan for adaptation.

Such tools have been widely used in the Philippines as well as the Pacific Islands. These tools have not been applied in Sarawak and could be considered by interested stakeholders that intend to develop adaptation action plans specific to a district or coastal village through a participatory approach.

1.2 Locally Managed Marine Area (LMMA)

A Locally Managed Marine Area (LMMA) is a policy instrument where LMMA is an area of nearshore waters and its associated coastal and marine resources that is largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area.

An LMMA differs from what is commonly known as a Marine Protected Area (MPA) in that LMMAs are characterized by local ownership, use and/or control, and in some areas follows the traditional tenure and management practices of the region. MPAs on the other hand, in the formal sense are typically designated via a top-down approach with little if any local input. Establishment of an LMMA enables communities to make decisions on which fishing methods and other activities can or cannot be carried out in their waters. Typically, a community also designates a portion of their marine area as a no-take zone where no fishing is allowed, providing additional protection and an increase of marine life in many cases.

An LMMA can vary widely in purpose and design with two important aspects which are:

- i. A well-defined or designated area
- ii. Substantial involvement of communities and/or local governments in decision-making and implementation.

Such LMMA as an instrument has been used in Fiji, Kenya and other countries in Asia and Africa. Such a tool can be used if there is an interest by coastal communities and the tool integrates concerns about the current state of degradation and ensures that ecological services of these resource systems are sustainably managed in the future by community driven efforts.



Credit: Forest Department Sarawak
• Proboscis Monkey resting on the mangrove branches in Bako National Park.

Annexure 2 : Summary of Various Environmental Tools and Mainstreaming Opportunities

No	Environmental Assessment Tool	Function	Mainstreaming opportunity
1	SEA (Strategic Environment Assessment)	High level environmental assessment to guide policy making	Support policy planning for large scale development planning e.g. SCORE, PCDS, Green Economy, Blue Economy and Circular Economy to assess the potential effectiveness of these initiatives to achieve its intended environment and biodiversity targets.
2	Climate change vulnerability assessments	i. Integrated Coastal Sensitivity, exposure and Adaptive Capacity to Climate Change. Vulnerability Assessment tool (ICSEA-C-Change) ii. Coastal Integrity Vulnerability Assessment Tool (CIVAT) iii. Tool for Understanding Resiliency of Fisheries (TURF) iv. Climate change vulnerability Assessment and Local Early Action Planning (LEAP)	The climate change vulnerability assessment and LEAP tool measures the vulnerability of ecological and social resources depended by coastal communities and provides steps in developing a robust action plan for adaptation. Can be considered for integration into e.g. implementation of the Integrated Shoreline Management Plans.
3	LMMA (Locally Managed Marine Areas)	Encourage local stewardship for sustainability in managing marine areas. Management areas and strategies are developed by local communities with other stakeholders e.g. government.	Inclusion of communities into stewardship and management of marine areas important for fisheries, livelihood and biodiversity. Such a tool can be used if there is an interest by coastal communities and the tool integrates concerns about the current state of degradation and ensures that ecological services of these resource systems are sustainably managed in the future by community driven efforts.

No	Environmental Assessment Tool	Function	Mainstreaming opportunity
4	FIP (Fisheries Improvement Plan) and AIP (Aquaculture Improvement Plan)	Certification systems for sustainable production of fisheries and aquaculture	Mainstream protection of marine biodiversity into fisheries and aquaculture activities
5	Tools to support biodiversity monitoring: i. eDNA ii. BOLEH (Biodiversity Observation for Land and Ecosystem Health)	<p>i. An efficient, non-invasive and easy to standardize method; capable of monitoring for terrestrial and aquatic ecosystems. Can assess presence of multiple species in an area through environmental samples such as water and soil.</p> <p>ii. An approach to support the monitoring, reporting and verification (MRV) required to meet requirements of FSC ecosystem-services procedure (Kitayama et al., 2018). It uses tree community composition and forest intactness as index indicators for biodiversity. The method simultaneously evaluates biodiversity and carbon density at a landscape scale.</p>	<p>Alternative approaches to overcome existing challenges to assess biodiversity such as extent of sampling needed, accessibility and funding.</p> <p>Monitoring for biodiversity can be bundled as part of the ecosystem service to be monitored and to be mainstreamed into the MRVs that are set up should the state decide to implement Payments for Ecosystem Services.</p>

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MUDeNR

Ministry of Natural Resources
& Urban Development

Ministry of Natural Resources & Urban Development,

Level 3, 15, 16, Wisma Sumber Alam,
93050 Petra Jaya, Kuching, Sarawak

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