



*“Often a branch is broken off the tree by the one who has rested in its shadow”
- Myanmar proverb*

Briefing Paper

Biodiversity, Human Rights and Business in Myanmar

November 2018

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Based in Yangon, it aims to provide a trusted and impartial platform for the creation of knowledge, building of capacity, undertaking of advocacy and promotion of dialogue amongst businesses, civil society, governments, experts and other stakeholders with the objective of encouraging responsible business conduct throughout Myanmar. Responsible business means business conduct that works for the long-term interests of Myanmar and its people, based on responsible social and environmental performance within the context of international standards.

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LIST OF SUPPLEMENTARY BRIEFING NOTES

- The Nexus between Biodiversity, Ecosystem Services and Human Rights: Further Reading
- Biodiversity in Myanmar, including Protected Areas and Key Biodiversity Areas
- Local and international environmental organisations working on biodiversity conservation and ecosystems services in Myanmar
- Sectoral Briefing Notes on Biodiversity, Human Rights and Business in Myanmar
 - » Oil and Gas
 - » Mining
 - » Tourism
 - » Agribusiness

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AHP	ASEAN Heritage Park
ASEAN-WEN	Association of Southeast Asian Nations Wildlife Enforcement Network
ARC	Ayeyarwady River Corridor
ASM	Artisanal and Small-scale Mining
BANCA	Biodiversity and Nature Conservation Association
BBOP	Business and Biodiversity Offset Programme
BMP	Biodiversity Management Plan
CBC	Community Based Conservation
CBD	Convention on Biological Diversity
CBO	Community Based Organisation
CITES	Convention on International Trade in Endangered Species
CR	Critically Endangered
CSBI	Cross Sector Biodiversity Initiative
CSO	Civil Society Organisation
CTF	Conservation Trust Fund
DIHR	Danish Institute for Human Rights
DOF	Department of Fisheries
DZGD	Dry Zone Greening Department
EBI	Energy and Biodiversity Initiative
ECC	Environmental Compliance Certificate
ECD	Environmental Conservation Department
ECL	Environmental Conservation Law
ECR	Environmental Conservation Rules
EDGE	Evolutionary Distinct and Globally Endangered (species)
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPFIs	Equator Principle Financial Institutions
ESIA	Environmental and Social Impact Assessment
ESHIA	Environmental, Social and Health Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
FAO	Food and Agriculture Organisation
FFI	Fauna and Flora International
FDI	Foreign Direct Investment
FPIC	Free, Prior, and Informed Consent
FREDA	Forest Resource Environment Development and Conservation Association

GAD	General Administration Department
GBIF	Global Biodiversity Information Facility
HCV(A)	High Conservation Value (Areas)
HSE	Health, Safety and Environment
IBBA	Important Bird and Biodiversity Areas
IBAT	Integrated Biodiversity Assessment Tool
ICDP	Integrated Conservation and Development Project
ICMM	International Council on Mining and Metals
IHRB	Institute for Human Rights and Business
IFC	International Finance Corporation
IEE	Initial Environmental Examination
IIED	International Institute for Environment and Development
IOGP	International Association of Oil & Gas Producers
IPIECA	International Petroleum Industry Environmental Conservation Association
ITPGR	International Treaty on Plant Genetic Resources for Food and Agriculture
ITTA	International Tropical Timber Agreement
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KESAN	Karen Environmental and Social Action Network
LMMA	Locally Managed Marine Area
MAB	Man and Biosphere Reserve
MCRB	Myanmar Centre for Responsible Business
MECAP	Myanmar Elephant Conservation Action Plan
MERN	Mangrove and Environmental Rehabilitation Network
METT	Management Effectiveness Tracking Tool
MIC	Myanmar Investment Commission
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOECAF	Ministry of Environmental Conservation and Forestry (now MONREC)
MOEE	Ministry of Electricity and Energy
MOLIP	Ministry of Labour, Immigration and Population
MONREC	Ministry of Natural Resources and Environmental Conservation (formerly MOECAF)
MPA	Marine Protected Area
MSP	Marine Spatial Planning
MTE	Myanmar Timber Enterprise
NBCC	National Biodiversity Conservation Committee
NBSAPs	National Biodiversity Strategy and Action Plans
NCA	Nationwide Ceasefire Agreement
NCCAMNRCA	National-level Central Committee for the Administration and Managing of Natural Resources in Coastal Areas
NCEA	National Commission for Environmental Affairs (now NECCCCC)

NECC	National Environmental Conservation Committee (former NCEA)
NECCCCC	National Environmental Conservation and Climate Change Central Committee (former NECC)
NEP	National Environmental Policy
NGO	Non-governmental Organisation
NLD	National League for Democracy
NLUP	National Land Use Policy
NP	National Park
NWCD	Nature and Wildlife Conservation Division (MONREC)
OECD	Organisation for Economic Cooperation and Development
OMM	One Map Myanmar
PA	Protected Area
PES	Payment for Ecosystems Services
PMP	Popa Mountain Park
POP	Persistent Organic Pollutants
PS	Performance Standard (IFC)
RSPO	Roundtable on Sustainable Palm Oil
SWIA	Sector Wide Impact Assessment
TBC	The Biodiversity Consultancy
TNRP	Tanintharyi Nature Reserve Project
TRAFFIC	Trade Record Analysis of Fauna and Flora in Commerce
UMEHL	Union of Myanmar Economic Holdings
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNGPs	United Nations Guiding Principles on Business and Human Rights
UNREDD	United Nations Reducing Emissions from Deforestation and Forest Degradation
UNSDGs	United Nations Sustainable Development Goals
UNSR	United Nations Special Rapporteur
UNWTO	United Nations World Tourism Organisation
VFV	Vacant, Fallow and Virgin Land
VPSHR	Voluntary Principles on Security and Human Rights
WB	World Bank
WCS	Wildlife Conservation Society
WHO	World Health Organisation
WHS	World Heritage Site
WWF	World Wide Fund for Nature
ZSL	Zoological Society of London

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

This briefing paper explores the relationship between biodiversity, human rights, society and business in Myanmar, with particular reference to the oil and gas, mining and tourism industries using the protect-respect-remedy framework of the UN Guiding Principles on Business and Human Rights.

It aims to assist businesses which want to understand how their activities may adversely impact on biodiversity, and how this may in turn undermine their responsibility to respect human rights. It also aims to build awareness of how the loss of biodiversity has significant implications for the duty of the Government of the Republic of the Union of Myanmar to protect human rights and its parallel obligations under international biodiversity conventions.

The Briefing Paper is structured as follows:

- **Section 1** explains the 'nexus' between business, biodiversity and human rights, and the business case for addressing biodiversity and ecosystem services
- **Section 2** provides an overview of biodiversity in Myanmar, with emphasis on the biodiversity resources that are likely to be affected by private sector activities and the major threats to them
- **Section 3** provides an overview of the policy and legal framework and institutional arrangements related to biodiversity and addresses compliance with biodiversity aspects of Myanmar's environmental laws and regulations, including Environmental Impact Assessment (EIA)
- **Section 4** looks at how Myanmar's EIA process can be used by companies to improve outcomes for biodiversity and related human rights
- **Section 5** provides an overview of international standards, practice and tools and application of international good practice on biodiversity protection by business, including in EIAs

The Briefing Paper is supplemented by additional material on:

- The Nexus between Biodiversity, Ecosystem Services and Human Rights: Further Reading
- Biodiversity in Myanmar: including Protected Areas and Key Biodiversity Areas
- Local and international environmental organisations working on biodiversity conservation and ecosystems services in Myanmar
- Sectoral Briefing Notes on Biodiversity, Human Rights and Business in Myanmar
 - » Oil and Gas
 - » Mining
 - » Tourism
 - » Agribusiness

These supplements cover potential biodiversity/human rights impacts, and links to sources of more detailed guidance.

The nexus between Biodiversity and Human Rights

In early 2017, in a report to the UN Human Rights Council, the UN Special Rapporteur on Human Rights and the Environment (John Knox) described the importance of biodiversity and related ecosystem services for human rights. Knox asserted that the full enjoyment of human rights depends on ecosystem services (i.e. the benefits provided by ecosystems that contribute to making human life both possible and worth living). These ecosystem services in turn, depend on biodiversity. Therefore, the loss of biodiversity and ecosystem services threatens a broad spectrum of rights, including the rights to life, health, food, water, culture and non-discrimination. Consistent with the UN Guiding Principles on Business and Human Rights, states have an obligation to safeguard biodiversity to protect those rights from infringement. This includes a duty to protect against environmental harm caused by private enterprise. In addition, businesses have a responsibility to respect the rights relating to biodiversity. In practice, this means that businesses have a responsibility to understand and mitigate the potential impacts of their activities on biodiversity, ecosystem services and related human rights. Knox elaborated further on his thinking in his final report to the Human Rights Council in March 2018, where he outlined Framework Principles on Human Rights and the Environment, as a basis for states and companies to understand and implement human rights obligations relating to the environment.

Since 2011, when the Government of Myanmar initiated a progressive political and economic reform agenda, the conditions for investment have improved and investment has increased. Increased investment in sectors such as agribusiness, tourism, mining and oil and gas will inevitably lead to significant additional pressures on biodiversity and risk a further deterioration in biodiversity-related human rights. It is therefore timely and urgent to explore the relationship between biodiversity, human rights, society and business in Myanmar in anticipation of accelerated economic activity.

Overview of biodiversity in Myanmar

Myanmar is rich in biodiversity. Almost all the country lies within the Indo-Burma Biodiversity Hotspot. This supports an extraordinary array of ecosystems, with mountains, permanent snow and glaciers, extensive forests, major rivers, a large river delta, a dry plateau, a long coastline with offshore islands, and valuable coastal and marine habitats. It occupies the transition zone between three biogeographic regions, which produces unique and diverse assemblages of flora and fauna, including species that are not found outside of Myanmar. Forest is the dominant vegetation type in Myanmar, covering 43% of the land area, although half of this is degraded, and the rate of loss is one of the highest globally. Limestone karst formations are also important for biodiversity as they support restricted range species. Freshwater ecosystems and wetlands include major river systems notably the Ayeyarwady River Corridor and Inle and Indawgyi Lakes. Coastal ecosystems are also very important for biodiversity including wet evergreen forest, intertidal mud and sand flats, coral reef, mangrove and seagrass.

As of 2018, Myanmar has 42 Protected Areas, but the area currently under protection is less than 6% of the total land area. This compares with a global average of almost 15% and a global target under the Convention on Biological Diversity - which Myanmar is a signatory to - of 17%. Marine areas are especially vulnerable, with just one marine area under protection (the Lampi Marine National Park). Funding for Protected Areas is also inadequate, with many Protected Areas lacking management plans, adequate numbers of staff and basic infrastructure.

The biodiversity of Myanmar is however increasingly at risk due to factors such as unsustainable land use practices, unplanned and uncoordinated development, illegal wildlife trade and overfishing. While the loss of this biodiversity is problematic in terms of the intrinsic value of the species at risk, it is also of concern to the people who are dependent on the ecosystem services that biodiversity supports. These benefits contribute to making human life both possible and worth living. The subtitle of this Briefing Paper ("Often a branch is broken off the tree by the one who has rested in its shadow") is derived from a Myanmar proverb, which speaks to the ability of humankind to degrade the environmental features we are most dependent on. The degradation and deterioration of these services is a significant factor influencing several challenges now facing Myanmar, such as climate variability, water scarcity, the decline of agricultural productivity and energy insecurity.

Policy and legal framework

Myanmar has a set of policies and laws relating to environmental protection in general, and biodiversity conservation specifically. The country has also signed and ratified several regional and international instruments that relate to biodiversity protection. These disparate commitments mostly come together through the process to develop National Biodiversity Strategies and Action Plans for biodiversity, which is a requirement for signatories to the Convention on Biological Diversity. A detailed overview of the policies, laws and strategies linked to environmental or biodiversity protection, as well as some of their limitations is provided in Section 3. This includes a lack of provision for community participation in co-management of forests, as well as shortcomings with the EIA Procedure. Advice on how companies can use this more effectively is in Section 4.

Overview of international standards, practice and tools

To assist with these challenges however, there is a wealth of international standards, good practice guides, and tools for the management of biodiversity and ecosystem services for Government and companies. These offer guidance on how to prevent, minimise, manage and offset residual impacts on biodiversity. The reasons for companies to mitigate the impacts of their operations on biodiversity, which are also briefly discussed in Section 5 and form the basis for the following recommendations.



RECOMMENDATIONS TO COMPANIES

Essential

- Be aware of, and compliant with, all Myanmar environmental regulation on the protection of the environment, and ensure that all business partners do the same (see **Section 3**)
- Ensure that Initial Environmental Examinations (IEE)/Environmental Impact Assessments (EIA) and Environmental Management Plans (EMPs) meet the requirements of the EIA Procedure and incorporate biodiversity considerations (**Section 4**)
- Address biodiversity aspects at the EIA Screening stage, including whether the project is located in, or will impact, any legally designated Protected Areas (see Biodiversity Supplement) as well as other sites of international importance for biodiversity such as Key Biodiversity Areas (KBAs), highlighting this in the documentation submitted for Screening
- Take account of relevant information or requirements from Strategic Environmental Assessments (SEA)
- Ensure that the Scoping Study fully addresses potential biodiversity impacts and assesses 'alternatives'¹ so that adverse impacts on biodiversity can be **avoided** wherever possible, consistent with the 'mitigation hierarchy' (Avoid, Minimise, Mitigate/Restore, Compensate/Offset) (**Section 5**)
- Use the Scoping Study to identify and engage stakeholders likely to be affected by business activities, so that the company can begin to understand community dependence on biodiversity and ecosystem services, and the potential for business activities to adversely infringe on any related human rights
- Make full use of existing data sources, consulting government officials in the Nature and Wildlife Conservation Division (NWCD) and other experts, and undertake appropriate surveys to fill gaps in baseline data
- Do not assume that degraded Natural Habitats have no biodiversity value
- Ensure that biodiversity/human rights impacts are addressed fully in the Assessment phase, drawing on local knowledge and that they are covered in all public consultation
- Incorporate mitigation measures into environmental and social management systems or plans, in partnership with communities, to ensure that potential impacts identified through the EIA process can be effectively mitigated for the benefit of both biodiversity and communities
- Ensure that project infrastructure and workers do not contribute to illegal trafficking in wildlife

¹ Definition of 'Alternatives' in Myanmar EIA Procedure (2015) Article 2 (l) **Alternatives** in relation to a proposed Project, means different realistic and feasible means of meeting the general purpose and requirements of the Project, which may include lower-impact alternatives to: i) the property on which or location where it is proposed to undertake the Project; ii) the type of Project to be undertaken; iii) the design or layout of the Project; iv) the technology to be used in the Project; v) the operational aspects of the Project, and vi) any other substantive characteristic or aspect of the Project as deemed; necessary or appropriate by the Ministry.

- Publish on the company website all draft EIAs once submitted to the Ministry of Natural Resources and Environmental Conservation (MONREC) for consideration, in line with the legal requirement in the EIA Procedure. Publish all Monitoring Reports

Desirable

Operations

- Anticipate likely changes in Myanmar's National Environment Policy (NEP) and Strategic Framework, and to the EIA Procedure (see **Section 3**), as a means of ensuring that projects will not be subject to further restrictions that may impact on key operating parameters in the future
- Where there are gaps in the Myanmar regulatory framework, use international standards, for example International Finance Corporation (IFC) Performance Standards (PSs), including PS6
- Consider whether techniques and assessments such as Valuing Natural Capital, High Conservation Value (HCV) Assessments, and Community mapping would be useful (see **Section 5**)
- Plan and implement offsets according to good practice (**Section 5**)

Policy engagement

- Contribute to the development of Myanmar frameworks for offsets and payment for ecosystem services
- Bring a private sector perspective and engage in discussions on the implementation of the new Environmental Strategic Framework 2018 and enhancing the effectiveness of Myanmar's regulatory framework including incorporation of international standards
- Contribute to the work of the Sectoral Coordination Group on Environment and any subgroups which bring together government, development partners, NGOs/civil society, and business.

Capacity Building

- Support training initiatives for national and state/regional authorities on good EIA practice and biodiversity conservation, drawing on examples from outside of Myanmar
- Provide financial and technical support to the implementation of Myanmar's National Biodiversity Strategy and Action Plan (NBSAP), including support for Protected Areas and other KBAs

Information sharing

- Share biodiversity data derived from the EIA and monitoring, and other company activities, on appropriate public platforms (see **Section 4**)
- Develop and share case studies, both nationally and for international audiences
- Develop partnerships with NGOs, Government, Myanmar and international academics to build capacity and baseline diversity data, and ensure that this is publicly available

1

THE NEXUS, AND THE BUSINESS CASE, FOR BUSINESS TO PROTECT BIODIVERSITY AND RESPECT HUMAN RIGHTS

- 1.1. The Nexus between Biodiversity, Business and Human Rights
- 1.2. UN Guiding Principles on Business and Human Rights (UNGPs)
- 1.3. Connecting Biodiversity to the UN Guiding Principles
- 1.4. Why Should Companies Care about Biodiversity in Myanmar?
- 1.5. Biodiversity and Ecosystem Services Terminology
- 1.6. Indigenous Peoples' Rights and Biodiversity

1.1. The Nexus between Biodiversity, Business and Human Rights

Myanmar is the largest country in mainland Southeast Asia with a land area of 676,577 km². Because of its size, its large latitudinal range of 2,100 km, and the diversity of its topography and habitats, the country is rich in biological diversity (biodiversity)². Myanmar supports unique and diverse assemblages of flora and fauna, including species that are endemic to Myanmar (i.e. not found outside of the country).

Myanmar has a wealth of **natural capital**: evergreen and deciduous forests, major river systems, one of the largest deltas in the world, lakes, marine habitats and numerous marine, freshwater and terrestrial species, all of which underpin economic activity and human well-being. The interactions between biodiversity and non-living natural capital provide benefits to people known as **ecosystem services**. In 2013, an assessment of the value of services provided by forest ecosystems alone in Myanmar was estimated to be more than US\$7bn.³

Ecosystem services include:

- **Provisioning services** such as medicines, timber for construction and fuel, fish and bush-meat.
- **Cultural services** such as the spiritual enrichment, cultural heritage, recreation and tourism and aesthetic benefits.
- **Regulating services** such as climate regulation, pollination, and regulation of water.
- **Supporting services** such as nutrient cycling, water cycling and primary production. For example,

² Forest Department (2015). [National Biodiversity Strategy and Action Plan \(2015-2020\)](#). The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

³ WWF, MONREC, Natural Capital Project, (2016) "Natural Connections: How Natural Capital Supports Myanmar's people and economy," and Emerton, L. and Min Aung, Y. (2013). The Economic Value of Forest Ecosystem Services in Myanmar and Options for Sustainable Financing. 10.13140/2.1.1896.0968.

aside from regulating carbon dioxide levels in the atmosphere, forests play an important role in retaining sediment and maintaining clean water for downstream populations that rely on rivers and streams for their drinking water. They are also important in helping maintain dry-season base flows. Mangroves and other coastal habitats play an important role in protecting people who live along the coast from storms which may be exacerbated by climate change.⁴

However, the biodiversity of Myanmar is increasingly at risk due to factors such as unsustainable land use practices, unplanned and uncoordinated development, wildlife trade and overfishing. While the loss of this biodiversity is problematic in terms of the intrinsic value of the species at risk, it is also of concern to the people who are dependent on the ecosystem services that biodiversity supports. The degradation and deterioration of these services is a significant factor influencing several challenges now facing Myanmar, such as climate variability, water scarcity, the decline of agricultural productivity, and energy insecurity.

The links between biodiversity, ecosystem services and human rights have become an increasing part of the international discourse on environmental protection, and vice versa, not least due to tensions which have occasionally arisen - including in Myanmar - between activities focussed on biodiversity protection, and local communities' right to livelihoods.

1.2. UN Guiding Principles on Business and Human Rights (UNGPs)

The UN Guiding Principles on Business and Human Rights (UNGPs)⁵ provide the relevant international standard concerning the respective human rights obligations of the private sector and the Government (see Box 1 overleaf).

1.3. Connecting Biodiversity to the UN Guiding Principles

Neither the Protect, Respect and Remedy Framework nor the UNGPs explicitly mention biodiversity. However, in a 2017 report to the UN Human Rights Council, the UN Special Rapporteur on Human Rights and the Environment, John Knox, described the importance of biodiversity and related ecosystem services for human rights. Knox asserted that the full enjoyment of human rights depends on ecosystem services (i.e. the benefits provided by ecosystems that contribute to making human life both possible and worth living) that in turn depend on biodiversity. Therefore, the loss of biodiversity and ecosystem services threatens a broad spectrum of rights, including the rights to life, health, food, water, culture and non-discrimination.

Knox elaborated further on his thinking in his final report to the Human Rights Council in March

⁴ The links between ecosystem services and human well-being and development needs was originally developed in the [Millennium Ecosystem Assessment](#). By examining the environment through the framework of ecosystem services, it becomes much easier to identify how changes in ecosystems influence human well-being and to provide information in a form that decision-makers can weigh alongside other social and economic information.

⁵ A/HRC/17/31. UN Human Rights Council (2011). [Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework](#). Report of the Special Representative of the Secretary General on the issue of human rights and transnational corporations and other business enterprises, John Ruggie. ([Burmese translation](#))

BOX 1 - UN GUIDING PRINCIPLES ON BUSINESS & HUMAN RIGHTS

The Protect, Respect, and Remedy Framework was developed by Professor John Ruggie, Special Representative of the UN Secretary General, following three years of research and worldwide consultations with businesses, civil society, governments and victims of corporate human rights abuses. The framework sets out the distinctive yet complementary responsibilities of States and businesses with respect to human rights. While not establishing new international standards or requirements, they do remind governments of their existing obligations under human rights law and set out globally accepted norms for business. The UNGPs have a three-pillar structure:

- **Pillar I: Governments (states)** have a **duty to protect** against human rights abuses by third parties, including business enterprises, through regulation and other actions. This includes protecting communities from environmental harm caused by businesses, including impacts that may disrupt ecosystem services on which communities rely.
- **Pillar II: Businesses** have a corporate **responsibility to respect human rights**. This means that a business should not infringe, or have adverse impacts on, human rights. This covers the full range of human rights, including the rights relating to biodiversity and ecosystem services. In practice, this means that businesses have a responsibility to understand, prevent and mitigate the potential impacts of their activities on biodiversity, ecosystem services and related human rights ('human rights due diligence').
- **Pillar III: Victims** of corporate human rights violations and abuse should have **access to remedies** through judicial and non-judicial mechanisms.

2018, where he outlined a set of 16 Framework Principles on Human Rights and the Environment, as a basis for States, international organisations, companies, civil society organisations and indigenous peoples to understand and implement human rights obligations relating to the environment. Of particular relevance is Principle 8 which encourages States to "require the prior assessment of the possible environmental impacts of proposed projects and policies, including their potential effects on the enjoyment of human rights" so as to "avoid undertaking or authorizing actions with environmental impacts that interfere with the full enjoyment of human rights". Principle 12 is also highly relevant and encourages States to "ensure the effective enforcement of their environmental standards against public and private actors".

Consistent with the UNGPs, States have an obligation to safeguard biodiversity to protect those rights from infringement. This includes a duty to protect against environmental harm caused by private enterprise. In addition, businesses have a responsibility to respect the rights relating to biodiversity. In practice, this means that businesses have a responsibility to understand and mitigate the potential impacts of their activities on biodiversity, ecosystem services and related

human rights.⁶ The respective roles of the Government of Myanmar, and business enterprises operating in Myanmar, with respect to biodiversity are therefore as follows:

Pillar I: The Government of Myanmar has a duty to adopt legal and institutional frameworks that effectively protect against adverse impacts on biodiversity and ecosystem services that interfere with the enjoyment of human rights. That obligation includes a duty to protect against environmental harm by private companies that might impact the enjoyment of human rights. In his 2017 report to the Human Rights Council, Knox has highlighted that this means "assessing the environmental and social impacts of the proposal, providing information about its possible effects, facilitating informed public participation in the decision-making process and providing access to effective legal remedies for those who claim that their rights have been violated." In his 2018 report to the Human Rights Council, Knox's Principle 2 calls on States to "respect, protect and fulfil human rights in order to ensure a safe, clean, healthy and sustainable environment", which would include taking "effective steps to ensure the conservation and sustainable use of the ecosystems and biological diversity on which the full enjoyment of human rights depends". Myanmar has adopted a process for EIA to support this, but the real challenge is in its implementation in providing access to justice as highlighted below.

Pillar II: Businesses enterprises operating in Myanmar have a responsibility to respect human rights that may be affected by their impacts on biodiversity and related ecosystem services, to understand their actual or potential impacts through the conduct of due diligence, to prevent and mitigate abuses, and address adverse impacts with which they are involved. In complete alignment with the logic of the Protect, Respect and Remedy Framework and UNGPs, Knox's 2017 report states that "businesses have a responsibility to respect the rights relating to biodiversity". They can do this through applying the approaches and tools highlighted throughout this Briefing Paper. In his 2018 report, Knox states that "in accordance with the Guiding Principles on Business and Human Rights, the responsibility of business enterprises to respect human rights includes the responsibility to avoid causing or contributing to adverse human rights impacts through environmental harm, to address such impacts when they occur and to seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships. Businesses should comply with all applicable environmental laws, issue clear policy commitments to meet their responsibility to respect human rights through environmental protection, implement human rights due diligence processes (including human rights impact assessments) to identify, prevent, mitigate and account for how they address their environmental impacts on human rights, and enable the remediation of any adverse environmental human rights impacts they cause or to which they contribute".

Pillar III: Local community members or others who have been impacted by a loss of access to ecosystem services or biodiversity should have some form of recourse for loss of access or other impacts. A key priority for the convergence between environmental conservation and human rights has been in seeking to strengthen the protection of environmental rights, including providing remedy where people have been harmed by environmental damage or loss of access to ecosystem

⁶ A/HRC/37/59. UN Human Rights Council (2018). [Framework Principles on Human Rights and the Environment](#). Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John Knox.

services. While the state has a role in providing judicial and non-judicial remedies, businesses are also expected to provide for, or cooperate in, remedies where they have been involved in the adverse impacts. The Knox 2017 report also highlights the plight of human rights defenders, and notes that in 2015 there were 185 confirmed killings of environmental and land defenders around the world, including two victims from Myanmar.⁷

More information on the evolution of this debate on the nexus between biodiversity and human rights, international and national legislative frameworks and case studies is available in the Supplementary Briefing Note "The Nexus between Biodiversity, Ecosystem Services and Human Rights: Further Reading".

1.4. Why Should Companies Care about Biodiversity in Myanmar?

In addition to the intrinsic benefits of protecting biodiversity, and international human rights law, there are sound business reasons why companies should take a proactive approach to avoiding and mitigating the impacts of their operations on biodiversity. All businesses depend and impact on ecosystems and their services at some level, either as part of their core operations or through their value chain. Table 1 identifies five broad areas of both risk and opportunity for business.⁸

1.5. Biodiversity and Ecosystem Services Terminology

Box 2 (page 21) sets out key terms and concepts used in the Briefing Paper. They are also cross-referenced to relevant further information in the Annexes.

1.6. Indigenous Peoples' Rights and Biodiversity

Indigenous peoples can be particularly at risk of impacts on their biodiversity-related rights. Although everyone depends on ecosystem services, some people depend on them more closely than others. For example, forest-dwellers and fisherfolk rely directly on the products of forests, rivers, lakes and oceans for their food, fuel and medicine. Indigenous peoples also often have profound and special connections to, and identification with, lands and waters, and these are tied to their physical, spiritual, cultural and economic well-being. They may also have valuable traditional knowledge and experience in managing the environment in a sustainable manner.

In Myanmar such communities are often ethnic minorities⁹ who might be considered Indigenous Peoples in the context of the 2007 UN Declaration on the Rights of Indigenous Peoples (UNDRIP).¹⁰The definition of indigenous people in the Myanmar context is yet to be clearly established although Myanmar's 2015 EIA Procedure (see **Section 4**) defines Indigenous People as "people with a social or cultural identity distinct from the dominant or mainstream society, which makes them

⁷ In 2017, Global Witness released an updated report on [Defenders of the Earth](#) for 2016, which recorded at least 200 land and environmental defenders being murdered. Two of the victims were from Myanmar. The sectors associated with the most deaths were mining and oil (33 deaths) and logging (23 deaths).

⁸ See World Business Council for Sustainable Development, [Business Ecosystems Training course](#), Module 1.

⁹ MRGI (2007). [Minorities in Burma](#). Minority Rights Group International, London.

¹⁰ See UN (2008). [Declarations on the Right of Indigenous People](#). United Nations.

vulnerable to being disadvantaged in the processes of development".¹¹ These definitional and contextual issues are discussed further in MCRB's 2016 Briefing Paper [Indigenous Peoples' Rights and Business in Myanmar](#).

However, as in many areas of the world, it is certain that ethnic minorities in Myanmar have suffered historical disadvantages and may often still experience discrimination, high levels of poverty and other forms of political and social disadvantage. This vulnerability puts the biodiversity-related rights of indigenous peoples at risk. Not only may environmental degradation cause material consequences, there are often grave cultural effects for these populations as well. Their presence should require companies to exercise greater due diligence, including in consultations and EIA processes. The Myanmar EIA Procedure requires projects that involve indigenous peoples to follow international good practice in line with the standards of the World Bank Group, including the IFC, and the Asian Development Bank (ADB).¹²

TABLE 1: THE BUSINESS CASE FOR BIODIVERSITY AND ECOSYSTEM PROTECTION

	RISKS	OPPORTUNITIES
Operational	<ul style="list-style-type: none"> Increased scarcity and cost of ecosystem services: businesses whose operations are likely to have the biggest impact on biodiversity are likely to be those that most rely on ecosystem services (access to water, access to productive soils, access to plants and animal species for production). Diminished "social license to operate" by creating competition, and potentially conflicts, with local communities over access to ecosystem services. 	<ul style="list-style-type: none"> Improved operational efficiencies and savings cost, for example through water stewardship. Investment in the future success of own operations. Improved relationships with stakeholders by demonstrating a systematic approach to managing biodiversity, reinforced by participation in dialogue and partnerships with biodiversity organisations.

¹¹ For details see MCRB (2015). [EIA Procedure](#) (in English and Burmese), Myanmar Centre for Responsible Business. (Accessed 27-09-2018)

¹² See IFC (2012). [Performance 7 - Indigenous Peoples](#), World Bank (2016). [Environmental and Social Standard 7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities](#). and Asian Development Bank (2009). [Safeguard Policy Statement](#).

	RISKS	OPPORTUNITIES
Regulatory and Policy	<ul style="list-style-type: none"> Adoption of public policies and laws that affect access to biodiversity and ecosystem services (e.g. taxes, subsidies and moratoria on extractive activities). 	<ul style="list-style-type: none"> Compliance with legal requirements: adopting a systemic approach to the management of biodiversity risks can reduce risks and liabilities of non-compliance with Myanmar’s environmental protection requirements. Getting ahead of forthcoming changes in Myanmar laws
Reputational	<ul style="list-style-type: none"> Damaged relationships with customers and other stakeholders based on real or perceived harms to nature Damage to the company’s brand, image, “goodwill”, public image 	<ul style="list-style-type: none"> Implementing and communicating sustainable purchasing, operating or investment practices in order to differentiate the company from others
Market	<ul style="list-style-type: none"> Consumer preferences and other market factors that shift towards sustainable production 	<ul style="list-style-type: none"> Potential new revenue streams when participating in emerging environmental markets
Financing	<ul style="list-style-type: none"> Reduced access to finance: many potential lenders, both public and private, to business operations in Myanmar, require companies to assess and address impacts to biodiversity and ecosystems.¹³ 	<ul style="list-style-type: none"> Possibility of obtaining more favourable lending terms on the basis of reduced risk Access to new “green” funds available on potentially favourable terms

¹³ Many international lenders (including development banks and private sector banks applying the Equator Principles III (2013) require companies to apply the IFC Performance Standards, which includes Performance Standard 6 (PS6) **Biodiversity Conservation and Sustainable Management of Living Natural Resources** and its accompanying PS6 Guidance (see **Section 4** below).

BOX 2 - BIODIVERSITY AND ECOSYSTEM SERVICES KEY TERMS¹⁴

- Biodiversity:** 'Biological diversity' means the variability among living organisms from all sources including 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.
- Ecosystem services:** Benefits people obtain from ecosystems. These include [provisioning services](#) such as food and water; [regulating services](#) such as regulation of floods, drought, land degradation, and disease; [supporting services](#) such as soil formation and nutrient cycling; and [cultural services](#) such as recreational, spiritual, religious and other non-material benefits.

Legally Protected Areas

- Protected Area:** A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.
- Ramsar site:** Wetlands protected by national governments to fulfil their obligations under the Convention on Wetlands of International Importance (commonly called the Ramsar Convention).

Classification of other areas of international importance for biodiversity

- High Conservation Value Area (HCVA):** An area designated on the basis of High Conservation Values (HCVs), these are biological, ecological, social or cultural values considered outstandingly significant at the national, regional or global level.
- Key Biodiversity area (KBA):** A site of global significance with clearly defined boundaries. They are nationally identified using globally standardized criteria and thresholds and represent the most important sites for biodiversity conservation worldwide.
- Important Bird and Biodiversity Area (IBA):** Globally important site for the conservation of bird species. They are the sites needed to ensure the survival of viable populations of most of the world’s bird species. The IBA network also holds a large and representative proportion of other biodiversity. IBAs are a subset of [Key Biodiversity Areas \(KBAs\)](#).
- Alliance for Zero Extinction site:** Global list of sites containing 95% or more of the remaining population of one or more species listed as endangered or critically endangered on the [IUCN Red List of Threatened Species](#).

¹⁴ For details see UNEP-WCMC (2014). Biodiversity A-Z. UNEP-WCMC, Cambridge, UK (Accessed 27-09-2018)

2

BIODIVERSITY IN MYANMAR

- 2.1. Overview of Myanmar's Biodiversity
- 2.2. Major Threats to Biodiversity in Myanmar
- 2.3. Habitat Clearance and Degradation
- 2.4. Illegal Trade in Endangered Species
- 2.4. Unsustainable Use of Natural Resources
- 2.5. Vulnerability to Climate Change and Related Changes to Ecosystems
- 2.6. How do Threats to Biodiversity Cause Impacts on Human Rights?

2.1. Overview of Myanmar's Biodiversity

Myanmar is the largest country in mainland Southeast Asia with a land area of 676,577 km². Because of its size, large latitudinal range of 2,100 km, and diversity of topography and habitats from the eastern extremity of the Himalayas in the far north to the Sundaic forests in the far south.¹⁵

Almost all of Myanmar lies within the Indo-Burma Biodiversity Hotspot, one of 35 global hotspots that support high levels of biodiversity and endemism.¹⁶ The Indo-Burma hotspot ranks in the top 10 hotspots globally for irreplaceability and in the top five for threats. Myanmar supports an extraordinary array of ecosystems, with mountains, permanent snow and glaciers, extensive forests, major rivers, a large river delta, a dry plateau, and a long coastline with offshore islands with valuable coastal and marine habitats. It occupies the transition zone between three biogeographic regions, which produces unique and diverse assemblages of flora and fauna, including species that are not found outside of Myanmar.

Myanmar has 14 major ecoregions, or relatively large areas of land or water which each contain characteristic, geographically distinct assemblages of plants and animals (see [Supplement on Biodiversity in Myanmar, including Protected Areas and Key Biodiversity Areas](#)).¹⁷ More than half the country is covered by 3 of the 14 ecoregions - Irrawaddy moist deciduous forest (20.6%), Northern Indochina subtropical forest (20.5%) and Mizoram-Manipur-Kachin rain forests (10.5%). Overall, 8 of the forest ecoregions (and 72% of Myanmar's forest areas) were classified as either **vulnerable** or critically endangered some years ago. In this context, the 4 ecoregions classed as vulnerable (61%) are likely to become endangered unless the factors threatening their survival improve. The 4 ecoregions classed as **Critically endangered** (11%) are facing an extremely high risk of extinction,

¹⁵ Forest Department (2015). [National Biodiversity Strategy and Action Plan \(2015-2020\)](#). The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

¹⁶ Mittermeier, R. et al. (2004). [Hotspots Revisited: Earth's Biologically Richest and Most Endangered Ecoregions](#). Mexico City: CEMEX

¹⁷ Reproduced from IFC (2017). [Strategic Environmental Assessment of the Hydro Sector in Myanmar: Baseline Assessment, Chapter 4, Biodiversity](#).

as the assemblage is extremely fragmented and continuing to decline in area and quality. Less than 1% of these ecoregions is within Protected Areas.

Forest is the dominant vegetation type in Myanmar, covering 43% of the land area, although half of this is degraded, and the rate of loss is one of the highest globally. Freshwater ecosystems and wetlands include major river systems, notably the Ayeyarwady River Corridor and Inle and Indawgyi Lakes. Coastal ecosystems are also very important for biodiversity including wet evergreen forest, intertidal mud and sand flats, coral reef, mangrove and seagrass.

Protected Areas are one of the most important tools for biodiversity conservation, through safeguarding ecosystems services and preserving cultural landscapes. As of 2018, Myanmar has 42 Protected Areas, but the area currently under protection is less than 8% of the total land area. This compares with a global average of almost 15% and with a global target under the Convention on Biological Diversity - to which Myanmar is a signatory of - 17%. Marine areas are especially vulnerable, with just one marine national park (the Lampi Marine National Park). The Myanmar Marine Biodiversity Atlas notes six coastal/marine Protected Areas, including reserved mangrove forests and wildlife sanctuaries. Funding for Protected Areas is also inadequate, with many Protected Areas lacking management plans, and adequate numbers of staff and basic infrastructure. As Myanmar expands its Protected Areas network, it is important to adequately assess the likely impacts on local people and design measures to ensure that they benefit from the presence of National Parks and other Protected Areas.

Myanmar has 132 Key Biodiversity Areas (KBA). These are sites that are of global significance for biodiversity and are identified using standardised criteria. They represent the most important sites for biodiversity conservation worldwide.¹⁸ In Myanmar, KBAs have no legal standing as an official form of land tenure except where they overlap with formally established Protected Areas. Of these, thirty-five are in existing Protected Areas and a further six are proposed Protected Areas. However, the majority have no legal status. Nevertheless, KBAs assist countries to identify priority areas for future conservation efforts and protection; support development planning by highlighting the value of areas so that impacts on biodiversity can be avoided, and are being increasingly being targeted as potential areas for offsets sites. Currently, KBAs cover 17% of the country.

Further information about Myanmar's biodiversity, including maps, is available in the '[Supplement on Biodiversity in Myanmar, including Protected Areas and Key Biodiversity Areas](#)'.

2.2. Major Threats to Biodiversity in Myanmar

The biodiversity of Myanmar is increasingly at risk due to factors such as unsustainable land use practices (notably land clearing for agri-business projects) and unplanned and uncoordinated development. The illegal trade in endangered species to China and Thailand is of particular concern for certain species such as tiger and elephant. While the loss of this biodiversity is problematic in terms of the intrinsic value of the species at risk, it is also of concern to the people who are dependent on the ecosystem services that biodiversity supports. The degradation and deterioration of these services is a significant factor influencing several challenges now facing Myanmar, such as climate variability, water scarcity, the decline of agricultural productivity and energy insecurity.

¹⁸ See IUCN (2016). [A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0](#). First edition. Gland, Switzerland: IUCN.

There are four principle threats to biodiversity in Myanmar (see below) and a range of underlying factors that exacerbate these threats. These underlying factors include poverty; economic growth and increasing consumption; increased demand on natural resources, both domestically and from neighbouring countries; limited environmental safeguards; lack of comprehensive land-use policies and planning that leads to unplanned and uncoordinated development; undervaluation of ecosystems, ecosystem services and biodiversity (particularly in development planning); and limited grassroots support for conservation. These same threats and underlying factors are reiterated in a recently produced overview of biodiversity conservation in Myanmar.¹⁹

Although poverty in Myanmar has declined from 44.5% in 2004/05 to 26.1% in 2015, poverty still poses an underlying threat to the maintenance of biodiversity. Despite improvements in living conditions, many individuals live just above the poverty line and are considered near-poor or vulnerable. Some 70% of the population of Myanmar is rural and many communities are still heavily dependent on subsistence agriculture and ecosystem services for fuel, construction, food and medicines. As Myanmar opens up and there is an increase in development, and FDI, these threats will continue. The major categories of impacts as summarised in **Table 2** (page 28) below and the threats associated with specific, expanding sectors are covered in the sectoral supplements.

2.3. Habitat Clearance and Degradation

As noted earlier, forest constitutes the dominant vegetation type, yet Myanmar ranks in the top three countries globally in terms of forest lost between 2010 and 2015 (1.8%/year). Mangroves have been particularly hard hit, with over 42% of the total mangrove forest area cleared from 2001-2010, with the highest annual deforestation rate of 4.68%.²⁰ The highest deforestation and carbon release rates were in Ayeyarwady Region and Rakhine State. The major causes of mangrove deforestation included agricultural expansion, aquaculture development, logging, and industrial and urban development. Deforestation in Rakhine was mainly due to agricultural growth, excessive fuel-wood exploitation, and illegal mangrove forest logging activities. Yangon had the third-highest deforestation and carbon release rates, mainly due to urbanisation and urban sprawl.

One of the greatest threats is forest clearing and conversion for agri-business concessions for rubber, oil palm, betel nut and other agro-forestry plantations and also, to a lesser extent, the expansion of smallholder agriculture.²¹ Myanmar is a largely agricultural county, with 70% of the population living in rural areas. Most cultivation employs techniques that can significantly degrade habitats, particularly shifting cultivation in upland areas, over-abstraction of ground water, and uncontrolled pesticide and herbicide use which all negatively affect ecosystems and biodiversity. Large areas of forest are reported to have passed through a 'degradation continuum' where they have been logged over so many times that conversion to plantation or agriculture, combined with substantial insecurity of tenure and in some cases conflict, is the likely next step.

¹⁹ See Forest Department (2017). *Biodiversity Conservation in Myanmar: An overview*. The Republic of the Union of Myanmar, MONREC and Prescott et al (2017). *Political transition and emergent forest-conservation issues in Myanmar*

²⁰ Wang, C. and Myint, S. (2016). Environmental Concerns of Deforestation in Myanmar 2001-2010. *Remote Sensing*, 2016, 8, 728

²¹ MOCAF (2015). National Biodiversity Strategy and Action Plan (2015-2020). The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

BOX 3 - EXAMPLE OF DEGRADATION DUE TO DISPLACEMENT

An example is the Upper Paunglaung Dam, where largescale displacements of the population have occurred due to inattention to land use planning issues. These poorly managed displacements inevitably threaten important biodiversity areas. Immediate attention and funding for remedial watershed and spatial planning therefore becomes necessary as a matter of urgency, even before the initial project begins. This biodiversity rich area and other areas similarly affected could be recovered. For many areas, it is too late.

2.4. Illegal Trade in Endangered Species

Myanmar has a National Wildlife Law Enforcement Taskforce intended to promote coordination among the government departments to combat illegal wildlife trade. Nevertheless, trade remains widespread and Myanmar is struggling to fulfilling its obligations under CITES (see 3.10.2). This is because there is still a strong demand for products, especially from China and Thailand. As commercially valuable wildlife species have been wiped out in neighbouring countries, Myanmar has increasingly become a source of wildlife products. The illegal trade is difficult to control in the border areas especially as some of these are in conflict zones and, due to the value of some products, traders benefit from strong financial backing. Local trade is also a significant issue, with wildmeat increasingly being sold in Mandalay and Yangon for domestic use.

By monitoring wildlife products in Mong La in Shan State since 2006, TRAFFIC, the NGO wildlife trade monitoring network, has documented the significant trade in elephants, Asiatic bears, sun bears, tigers, leopards, snow leopards, cloud leopards, turtles, tortoises, and pangolins from Myanmar to its neighbours.²³ The illegal killing and capture of elephants for trade represents a major cause of decline for Myanmar's wild Asian Elephant populations.²⁴ The trade in native wild cats (including tiger, clouded leopard, marbled cat and Asiatic golden cat) is thought to be enabled by a serious lack of enforcement.²⁵ The country's endemic species are particularly at risk, especially freshwater turtles and tortoises.

In 2006, TRAFFIC surveyed 14 markets in Myanmar and three border markets in Thailand and China and found 9000 pieces of ivory and 16 whole tusks for sale, representing the ivory of an estimated 116 bulls.²⁶ Aside from the trade in ivory there has also been a dramatic increase in the trade of skin, meaning that not only bulls are affected but females and calves. Elephant skin is reportedly even traded in Yangon and reported cases of elephants killed in Myanmar have increased dramatically since 2010. In 2016 alone, 36 wild elephants were killed, according to official figures from the Ministry of Natural Resources and Environmental Conservation.²⁷

²² Cornish, G. (2017). [Women and Resettlement: A case study on gender aspects at the upper Paunglaung Hydropower Dam](#). Spectrum SDKN Brief

²³ NWCD (2017). Biodiversity Conservation in Myanmar: an overview. The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation, Forest Department

²⁴ Shepherd, C. and Nijman, V. (2008). [Elephant and Ivory Trade in Myanmar](#). TRAFFIC Southeast Asia, Petaling Jaya, Selangor, Malaysia

²⁵ Shepherd, C. and Nijman, V. (2008). [The Wild Cat Trade in Myanmar](#). TRAFFIC Southeast Asia, Petaling Jaya, Selangor, Malaysia

²⁶ Shepherd et al (2008). [Elephant and Ivory Trade in Myanmar](#). TRAFFIC Southeast Asia

²⁷ The Guardian, [Demand for elephant skin, trunk and penis drives rapid rise in poaching in Myanmar](#). 07-06-2017

The Myanmar Government is trying to strengthen coordination and collaboration with other countries in the region and is also participating in global and regional initiatives such as ASEAN Wildlife Enforcement Network, Operation Cobra, Operation Paws, and Wildlife Crimes Working Group of the INTERPOL. It is enhancing patrolling in Protected Areas. Regarding elephants, the Department of Forestry and Myanmar Timber Enterprise (MTE), which is the largest owner of elephants in the country, supported by local and international NGOs, has recently developed the Myanmar Elephant Conservation Action Plan (MECAP), which outlines 10-year strategy to protect elephants.²⁸ MECAP includes engaging the public in the control of illegal poaching, trade and consumption of elephants and their parts.

Wildlife trade can be exacerbated by large projects such as mines, roads and dams. Even if companies control hunting by their own staff, migration into the area can have significant impacts on the demand for local wildlife, as can the presence of large numbers of construction workers. The increase in tourism to Myanmar has also exacerbated problems due to the market for traditional medicine.

2.5. Unsustainable Use of Natural Resources

Myanmar's natural resources have been increasingly put under pressure following the military coup in 1988. This was followed by an increase in logging and fishing concessions, including to foreign companies, leading to clear-cutting of forests by companies and overfishing, with little or no oversight by an under-resourced government. The ceasefires in ethnic areas which were agreed between the military government and ethnic armed groups in the 1990s also opened up areas of forest and natural resources, including jade, gems and gold mining, and oil palm in Tanintharyi Region. Military companies, and those connected to them, and ceasefire groups were all granted concessions, again without any consideration of environmental impacts or sustainability. From the mid-2000s, an increasing number of contracts were signed with Chinese and Thai companies for major hydropower projects on undammed rivers including the Thanlwin/Salween, and the Ayeyarwady and their tributaries.²⁹ While a dawning realisation of the unsustainability of some logging, fishing and mining concessions have resulted in moratoria or changes in government policy, this has generally been too late, or poorly enforced. Some of the larger hydropower projects were halted as a result of public protests, particularly after the transition to a nominally civilian regime in 2011, and remain suspended.³⁰

2.6. Vulnerability to Climate Change and Related Changes to Ecosystems

With the largest standing forests on mainland South East Asia, Myanmar currently absorbs more greenhouse gases than it emits, thereby already making a contribution to global efforts to tackle climate change. However, according to the Germanwatch *Global Climate Risk Index*,³¹ Honduras, Myanmar and Haiti were the countries most affected by extreme weather events between 1995 and 2014. In addition, climate models predict further sustained impacts from climate change in

28 The Irrawaddy. [10-Year Plan Aims to Save Myanmar's Wild Elephants from Poachers](#). 20-02-2018

29 Heinrich-Böll-Stiftung, The Green Political Foundation (2013). [Myanmar's Natural Resources: Blessing or Curse?](#) (Accessed 26/09/2018)

30 From IFC, MOEE and MONREC, [Strategic Environmental Assessment \(SEA\) of the Hydropower Sector: Baseline Assessment Report, Chapter 1](#), Yangon and Nay Pyi Taw, Myanmar, 2017.

31 Kreft et al (2016). [Global Climate Risk Index Who Suffers Most From Extreme Weather Events?](#) Germanwatch e.V., Bonn

future.³² Myanmar has already observed changes in the prevalence of drought events, intensity and frequency of cyclones/strong winds, rainfall variability, occurrence of flooding and storm surge. Aside from the obvious social and economic implications, climate change will affect the coastal and marine environment, causing deterioration of mangroves, coral reefs and sea-grass beds, which are vital breeding and feeding grounds for fish. There could also be a shift in the range and migration patterns of species and changes in the flowering and fruiting seasons/times of plant species. Climate change could also impact freshwater biodiversity and distribution of vegetation types.

Myanmar is designing and implementing policies to address climate change. Those relevant to biodiversity include developing a coastal zone management plan to effectively conserve terrestrial and marine resources including mangrove forests; the rehabilitation of degraded forests and restoration of local ecosystems for people affected due to extreme weather events; and reducing the use of wood from natural forests for cooking. The maintenance and expansion of protected areas and forests in general should be an important component of climate mitigation and there are likely to be financing opportunities for Protected Areas associated with these types of measures.

2.7. How do Threats to Biodiversity Cause Impacts on Human Rights?

Table 2 (overleaf) summarises the ways in which broad categories of biodiversity impact can occur and the related human rights impacts.

In addition, these more **direct** impacts on human rights can lead to **secondary** level impacts on human rights. Project-induced development or in-migration can intensify competition over already scarce resources, such as land and water, and lead to further environmental degradation which in turn leads to further competition for scarcer resources. Diminishing access to biodiversity and ecosystem services can contribute to tensions that can escalate into violent conflict, or feed into and exacerbate pre-existing conflict dynamics that can spill over into further impacts on human rights.



32 MOECA (2015). [Myanmar's Intended Nationally Determined Contribution-INDC](#). The Republic of Union of Myanmar, Minister of Environmental Conservation and Forestry

TABLE 2: TYPES OF BIODIVERSITY AND ECOSYSTEM IMPACT, AND RELATED HUMAN RIGHTS IMPACTS

IMPACT ON BIODIVERSITY	HOW CAN THIS IMPACT ON HUMAN RIGHTS?
Impacts on Terrestrial Biodiversity	
Loss or degradation of ecosystems and habitats	<p>Direct loss can result from land clearing for projects or related infrastructure (e.g. transport, power supply, etc.). In addition, indirect impacts can result from habitat fragmentation due to the presence of several projects or activities in close proximity to one another. Encroachment from nearby communities for provisioning services, such as fuel wood, can degrade remaining habitats.</p> <p>Loss and degradation of forests can adversely affect local populations who depend on:</p> <ul style="list-style-type: none"> the ecosystem services they provide, especially where they are an important part of the local diet (<i>right to food</i>).
Loss of threatened and restricted range species	<p>Loss of highly threatened species on the IUCN Red List or those that occur in a small area (restricted range) can arise as a direct result of the loss of habitats, or due to fragmentation of habitats which makes populations of these species unviable.</p> <ul style="list-style-type: none"> the provisioning services they provide (<i>right to water</i>).
Effects on sensitive or migratory species	<p>Some animal species are especially sensitive to the presence of people. In addition, the presence of physical infrastructure can deter or impede the migration patterns of other species (e.g. impoundments on rivers preventing upstream migration of fish to spawning grounds, occupying feeding grounds of migratory birds such as the Spoon-billed Sandpiper).</p> <p>Areas of importance for biodiversity can also be an important source of forage crops or seasonal grazing for livestock, which may be lost due to land clearing (<i>right to food</i>).</p>
Altered groundwater regimes	<p>Some habitat and species are dependent on surface springs. Altered groundwater can significantly affect the availability of water to plants, thereby threatening the viability of habitats and the animal species that depend on them for survival.</p> <p>Overstressing of biodiversity and ecosystem services can reduce the quality and quantity of food sources available (<i>right to food, right to an adequate standard of living</i>).</p>
Opening access to previously unaltered habitats	<p>Where developments involve upgrades to infrastructure (especially roads), this can open up access to other forms of development that in turn can adversely impact biodiversity and the ecosystem services it provides.</p>
Induced migration adding additional stresses	<p>Where developments result in people moving into an area seeking employment or other economic opportunities, this can intensify existing pressures on biodiversity and the ecosystem services it provides.</p>

Impacts on Aquatic Biodiversity

Altered hydrologic regimes (may be due to reduced groundwater)	<p>Species are typically adapted to certain flow regimes and any long-term modification of the flow regimes of rivers (e.g. as a result of over-abstraction of surface water or groundwater that supports base-flow) can alter the composition of plant and animal species.</p>	<p>Impacts on freshwater or marine fish species can adversely affect local populations who depend on:</p> <ul style="list-style-type: none"> fish as a food source, through reductions in both the quantity of food and the quality of food (<i>right to food</i>) fisheries or harvesting seafood or plants from the sea as a source of livelihood (<i>right to an adequate standard of living</i>)
Increased heavy metals, acidity or pollution	<p>Heavy metals are typically toxic to aquatic invertebrates and fish and may bioaccumulate in the tissues of predator species and people. Most aquatic species tolerate a narrow pH range and are adversely impacted by acidity or other forms of pollution.</p>	
Increased turbidity (suspended solids)	<p>Often arising from runoff due to land clearing activities, suspended solids can irritate the gills of fish, impede their movement, disrupt food sources (invertebrates) and adversely impact spawning grounds.</p>	
Dredging of sediments or disruption of the seabed	<p>This may directly impact species that live in marine, estuarine or riverine sediments, or prey species that depend on them such as migratory water birds. It can also adversely affect seagrasses or coral reefs.</p>	<p>Local and national populations who eat seafood containing toxic substances may become ill (<i>right to health</i>).</p>

Air Quality and Noise Related Impacts on Biodiversity

Increased ambient particulates (TSP)	<p>Dust deposition on vegetation can reduce photosynthesis and affect plant productivity, especially in dry areas. Some invertebrates that are important in food chains are intolerant of increased dust levels.</p>	<p>Local populations who rely on local food resources may experience a reduction both in the quality and quantity of food, and risk exposure to harmful substances causing illness (<i>right to food, right to health</i>).</p>
Increased ambient sulphur dioxide (SO2) or oxides of nitrogen (NOx)	<p>Emissions of SO2 and NOx deposit in water, on vegetation and on soils as 'acid rain', with increased acidity adversely affecting flora and fauna. Acidification affects ecosystem services, such as nutrient cycling, carbon cycling, and water provision.</p>	<p>Reduction in access to water in sufficient quality and quantity due to changes in the water cycle (<i>right to water</i>).</p>
Increased ambient heavy metals	<p>As noted above, heavy metals are typically toxic to aquatic invertebrates and fish and may bio-accumulate in the tissues of predator species and people.</p>	
Increased noise or blasting	<p>Many species are affected by noise and tend to move away from areas affected by increased noise. This can result in reduced food availability and disrupt reproductive patterns.</p>	

3

POLICY AND LEGAL FRAMEWORKS FOR BIODIVERSITY CONSERVATION,
AND RELATED INSTITUTIONS IN MYANMAR

3.1. Policy Framework for Biodiversity Conservation

3.2. Existing Policy Framework

3.3. Forthcoming Policies Reinforcing Protection of Biodiversity and Ecosystem Services

- 3.3.1. Draft National Environment Policy (NEP)
- 3.3.2. Draft Environmental Strategic Framework
- 3.3.3. Climate Change

3.4. Strategic Environmental Assessment

3.5. Legal Framework for Biodiversity Conservation

- 3.5.1. Myanmar Constitution
- 3.5.2. The 2012 Environmental Conservation Law
- 3.5.3. Environmental Conservation Rules
- 3.5.4. Environmental Impact Assessment Procedure
- 3.5.5. Environmental Quality (Emission) Guidelines

3.6. Laws relating to Terrestrial Biodiversity

- 3.6.1. Forest Law
- 3.6.2. Forest Rules
- 3.6.3. Community Forest Instructions
- 3.6.4. Forest Department Notification No. 583/94

3.7. Legal Framework related to Aquatic and Marine Biodiversity

3.8. Legal Framework Governing Protected Areas

- 3.8.1. The Conservation of Biodiversity and Protected Areas The Biodiversity and Conservation of Protected Areas Law (2018)
- 3.8.2. Protection of Wildlife and Protected Areas Rules

3.9. Institutional Arrangements for Biodiversity Protection

- 3.9.1. Ministry of Natural Resources and Environmental Conservation (MONREC)
- 3.9.2. Department of Fisheries
- 3.9.3. Institutional constraints and tensions
- 3.9.4. National Environmental Conservation and Climate Change Central Committee (NECCCCC)
- 3.9.5. National Biodiversity Conservation Committee (NBCC)
- 3.9.6. National-level Central Committee for the Administration and Managing of Natural Resources in Coastal Areas (NCCAMNRCA)

3.10. Myanmar's International Biodiversity Commitments

- 3.10.1. Convention on Biological Diversity (CBD)
- 3.10.2. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

3.1. Policy Framework for Biodiversity Conservation

Overall, the policy and legal framework for biodiversity conservation in Myanmar is reasonably robust. The legal framework has been built out in the past two decades, accompanied by institutional reforms. In part these developments have been designed to give effect to, and are supported by, Myanmar being party to a number of multilateral agreements with a focus on biodiversity protection. The country has signed and ratified several regional and international instruments that relate to biodiversity protection. These disparate commitments mostly come together through the process to develop a National Biodiversity Strategies and Action Plan (NBSAP) for biodiversity, which is a requirement for signatories to the Convention on Biological Diversity (see **Section 3.9**).

3.2. Existing Policy Framework

The main policies Myanmar has adopted to safeguard the environment are summarised below:

- The **National Environmental Policy (1994)**³³ aims to integrate environmental considerations into the development process to enhance the quality of life of all citizens and states that environmental protection should always be the primary objective of development.
- The **Forest Policy (1995)**³⁴ is designed to ensure that Myanmar's forest resources and biodiversity are managed sustainably to provide a wide range of social, economic and environmental benefits. It aims to maintain 30% of the country's total land area as Reserved Forests and Public Protected Forest and 5% of total land area as Protected Areas. It also identifies policy imperatives related to regulating and provisioning ecosystem services.³⁵
- **Myanmar Agenda 21 (1997)** is a blueprint for all natural resource management and environmental conservation work. The pursuit of the activities contribute to biodiversity conservation throughout the country.
- The **National Forestry Sector Master Plan (2000)** outlined a 30-year goal (2001-2030) of expanding Protected Areas to 10% of the country's total land area.
- The **National Sustainable Development Strategy (2009)** supports the goals of sustainable management of natural resources, integrated economic development and sustainable social development.

3.3. Forthcoming Policies Reinforcing Protection of Biodiversity and Ecosystem Services

Myanmar is expected to approve a new Environmental Policy and Strategic Framework by the end of 2018, and this gives an indication of future direction in policy and law that businesses should seek to align with.

3.3.1. Draft National Environment Policy (NEP)

This is expected to be issued in late 2018, superseding the existing National Environmental Policy of 1994. This policy will be supported by a strategic framework and relevant master plans and action

³³ (NCEA) (1994). National Environmental Policy of Myanmar. Ministry of Natural Resources and Environmental Conservation, The Republic of the Union of Myanmar, National Commission for Environmental Affairs

³⁴ Forest Department (1995). [Myanmar Forest Policy 1995](#). The Republic of Union of Myanmar, Minister of Forestry

³⁵ Section 3.1 refers to the importance of forests in "safeguarding soils, water catchments, ecosystems, biodiversity and plant and animal genetic resources, scenic reserves and national heritage sites" and section 3.3 refers to the basic needs of "providing fuel, water, fodder shelter, food and recreation from the forest".

plans. The draft NEP reaffirms and builds on the 1994 National Environmental Policy.³⁶ It recognises Myanmar's commitment to the UN Sustainable Development Goals (SDGs) and integrates these goals into the nation's environmental policy objectives. It articulates a vision for 2030 where Myanmar actively protects and manages the environment in ways that maintains biodiversity, supports inclusive social and economic progress, respects human rights, and enhances the quality of life for current and future generations. The draft contains 23 policy principles that can be grouped into three broad categories: (i) a clean environment and healthy functioning ecosystems; (ii) sustainable economic and social development; and, (iii) mainstreaming environmental protection and management. Of particular relevance to the issues of private sector development, biodiversity and ecosystem protection and human rights, the Policy:

- Recognises intangible values of the environment, including economic values of ecosystem services, and calls for integrating them in development planning (principle 2 and principle 12);
- Calls for sustainable management of natural resources and ecosystems (principle 3, 4, and 5); and
- Declares the rights of individuals and groups to natural resources and access to a clean environment (principle 1, 6).³⁷

3.3.2. Draft Environmental Strategic Framework

Also expected to be adopted before the end of 2018, this will guide the implementation of the National Environmental Policy and facilitate the achievement of its vision of "a clean environment, with healthy and functioning ecosystems, ensuring inclusive development and wellbeing for all people in Myanmar."

The draft Framework was subject to consultation in 2017. *Inter alia*, it proposes a moratorium on new concessions in potentially ecologically significant areas or where legitimate tenure rights are yet to be recognised, registered or protected. These KBAs are not currently protected as an official form of land tenure under Myanmar law except where they overlap with formally established Protected Areas. Identifying any potential overlap between a project and project area of influence with existing KBAs as part of the EIA process, as suggested above, it is therefore a step that developers should take to address anticipated policy and legal changes. The Framework also indicates that the EIA Procedure will be updated to include required application of the mitigation hierarchy (see below).

The protection of biodiversity is listed as the first key priority under the draft Framework.³⁸ The draft Framework specifically notes that it is of relevance to the private sector and anticipates the development of sector-based environmental master plans for key sectors.³⁹ The key sectors of focus are: agriculture; fisheries; forestry; livestock; mining; and transport. There are nine policy priorities including:

- Update land and resource management laws, in harmony with wildlife and biodiversity

³⁶ MoNREC (2016). [National Environmental Policy of Myanmar](#) (draft for discussion). The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

³⁷ From IFC, MOEE and MONREC, [Strategic Environmental Assessment \(SEA\) of the Hydropower Sector: Baseline Assessment Report, Chapter 1](#), p. 42, Yangon and Nay Pyi Taw, Myanmar, 2017.

³⁸ MONREC (2017). *Strategic Framework for the National Environmental Policy of Myanmar*, Draft for consultation. The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

³⁹ It specifically highlights compliance with environmental policy and regulation, promotion of sustainable development and green business practices, *Id.* at p. 4.

conservation objectives and strategies, while ensuring that resource benefits are shared equitably among multiple stakeholders;

- Incorporate biodiversity conservation targets and strategies into environment and natural resources planning processes;
- Require best practice approaches to minimising the risk of habitat fragmentation in infrastructure development planning;
- Develop strategies to support local populations help maintain natural ecosystems, including through payments for ecosystem services;
- Implement a moratorium on new concessions in areas of potentially ecologically significant areas or where legitimate tenure rights are yet to be recognised, registered or protected;
- Develop and implement a national restoration and recovery plan for degraded ecosystems.

The Framework also contains relevant policy priorities on:

- Integrated land use planning, including indicating the intention to include areas to be protected (or subject to dedicated management arrangements) to maintain ecosystem services, environmental assets and natural resources into spatial planning and development zoning processes.
- Protection of marine and coastal ecosystems including through ensuring that licenses and permits for economic activities in coastal and marine ecosystems require the prevention and mitigation of potential environmental impacts, and adequately compensate people who depend on fisheries for any negative livelihood impacts.

3.3.3. Climate Change

The Draft National Climate Change Policy acknowledges the importance of sustainable natural resource management and protection of biodiversity and related ecosystem services to enhance the resilience of Myanmar to climate change adaptation and mitigation.⁴⁰ This will be supported by a Draft Myanmar Climate Change Strategy and Action Plan 2016-2030.⁴¹ The plan states that Myanmar aspires to manage its natural resources to enhance the resilience of its biodiversity and ecosystem services that support social and economic development and to deliver carbon sequestration. Both policy documents are expected to be launched before the end of 2018.

Norway provided funding to support the development of a REDD+ Readiness Roadmap in 2013, with technical support from UN-REDD (United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation) and RECOFTC.⁴² Subsequently, a funding proposal to support implementation of the Roadmap was prepared and submitted to the UN-REDD Programme. Initial implementation activities began in January 2015 with "targeted support" funding. Subsequently, a UN-REDD National Programme was approved in 2016, and began implementation

⁴⁰ See MONREC (2017). [Myanmar Climate Change Policy \(Draft 1\)](#). The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

⁴¹ See MONREC (2017). [Myanmar Climate Change Strategy and Action Plan \(MCCSAP\) 2016-2030](#). The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

⁴² See UN-REDD (2018). [UN-REDD National Programme, Myanmar](#). UN-REDD Programme Collaborative Online Workspace

at the end of that year, with a duration of 4 years.⁴³ The UN-REDD National Programme will develop the capacities necessary to implement REDD+ in Myanmar as a major contribution to Myanmar's NDC. This includes the development of a National REDD+ Strategy, NFMS, FREL/FRL, and Safeguards Information System.

3.4. Strategic Environmental Assessment

Strategic Environmental Assessments (SEA) can be carried out at the level of assessing the impacts of policies, programmes or a series of projects to look at the broader environmental impacts of planned developments in an area or sector. These are broader assessments that are at a higher level than project-related EIAs (see below). These can also take the form of more specialised assessments such as State of (River) Basin Assessments or regional plans.⁴⁴

Project-level EIAs do not effectively address the cumulative impacts of multiple projects across different sectors on the environment, local communities or biodiversity. There is increasing support for the idea that conservation is best accomplished using an integrated, strategic landscape approach. SEAs can be a powerful tool that enable the integration of social, environmental, and economic considerations as well as specific biodiversity considerations to be factored into plans and programmes for whole sectors, or larger areas such as Special Economic Zones.

Until Myanmar develops more effective land use planning as set out in the Land Use Policy (2016), SEAs provide a way to make more balanced decisions around different types of land use for additional sectors. An SEA also provides broader, contextual information on environmental and social risks in the country and enables better understanding of stakeholders' environmental and social priorities and concerns. This should enable companies to build upon this data to conduct cumulative impact assessments and project-level EIAs.⁴⁵ EIAs for future private sector projects in the area or sector should take account of and comply with any conditions set out in a relevant SEA.

Myanmar law mentions SEA in Chapter X of the EIA Procedure (see below), but there are no guidelines yet as to how these should be conducted. The first SEA in Myanmar was conducted on the hydropower sector by the Ministry of Electricity and Energy (MOEE), MONREC, and IFC between 2016 and 2018.⁴⁶ The SEA contains a baseline assessment of biodiversity that can provide a rich source of information; the baseline for the hydropower sector also includes a comprehensive list of Protected Areas and KBAs in the country.⁴⁷

43 UN REDD (2016). [UN-REDD Programme National Programme, Myanmar](#). UN Collaborative Programme on Reducing Emissions From Deforestation And Forest Degradation In Developing Countries National Programme Document

44 International Centre for Environmental Management (ICEM). [AIRBM Project, State of the Basin Assessment \(SOBA\), Package 5 - Sectoral Development and Macroeconomics Assessment](#). 2017. (Accessed 2018 - 09 - 25)

45 ASIANPOWER. [How the private sector can use Myanmar's strategic environmental assessment](#). 2017. (Accessed 2018 - 09 - 25)

46 See IFC 2018. [SEA of the Hydropower Sector in Myanmar Resources Page](#). (Accessed 25-9-2018)

47 From IFC, MOEE and MONREC, [Strategic Environmental Assessment \(SEA\) of the Hydropower Sector: Baseline Assessment Report](#), Yangon and Nay Pyi Taw, Myanmar, 2017.

3.5. Legal Framework for Biodiversity Conservation

3.5.1. Myanmar Constitution

The 2008 Constitution⁴⁸ of the Republic of the Union of Myanmar sets a clear policy direction on environmental conservation. Article 45 of the Constitution states that "The Union shall protect and conserve the natural environment" and Article 390 states that "Every citizen has the duty to assist the Union in carrying out the following matters: ... the preservation and safeguarding of cultural heritage ... and ... environmental conservation."

3.5.2. The 2012 Environmental Conservation Law

Myanmar's main regulatory framework for environmental protection is the 2012 Environmental Conservation Law (ECL)⁴⁹ and associated secondary and tertiary regulation. *Inter alia*, this regulates private sector impacts on biodiversity and ecosystems and provide a framework for permitting processes. The objectives of ECL, include enabling: the implementation of the National Environmental Policy; the conservation of natural and cultural heritage for the benefit of current and future generations; the reclamation of degraded ecosystems; the sustainable use of natural resources; and cooperation between Government and international organisations, non-government organisations and individuals on environmental conservation. Section 7(m) provides for the Ministry of Environmental Conservation and Forestry ((MOECAF) now MONREC) to establish an EIA system (see below).

3.5.3. Environmental Conservation Rules

The 2014 Rules (ECR)⁵⁰ build upon the Environmental Conservation Law and clarify the responsibilities of MOECAF (now MONREC) and the National Committee. They set out in Chapter XII the requirement for all projects which 'may cause an impact on the environmental quality' to obtain 'prior permission'. However, what 'prior permission' means in practice has not yet been clarified. In the case of those projects requiring an Environmental Compliance Certificate (ECC), it might be assumed that the ECC constitutes prior permission.

3.5.4. Environmental Impact Assessment Procedure

Although the EIA Procedure⁵¹ (issued as a MOECAF Notification 616/2015 under the ECL and ECR) does not refer to social impacts in its title, it makes clear throughout the document that 'environmental impact' means both environmental and social impacts. The EIA Procedure:

- Defines 'Environmental Impact' as the probable effects or consequence on the natural and built environment, and people and communities of a proposed Project or businesses or activities or undertaking. Impacts can be direct or indirect, cumulative, and positive or adverse or both.

48 See the [Constitution of the Republic of Union of Myanmar](#) (2008). The Republic of Union of Myanmar, Ministry of Information (Accessed 26-09-2018)

49 See MOECAF (2012). [The Environmental Conservation Law](#). The Republic of Union of Myanmar, Ministry of Environmental Conservation and Forestry

50 See MOECAF (2014). [The Environmental Conservation Rules](#). The Republic of Union of Myanmar, Ministry of Environmental Conservation and Forestry

51 For details see MCRB (2015). [EIA Procedure](#) (in English and Burmese), Myanmar Centre for Responsible Business. (Accessed 26-09-2018)

For purposes of this Procedure, Environmental Impacts include occupational, social, cultural, socio-economical, public and community health, and safety issues. Moreover, social impacts include Involuntary Resettlement and relating to indigenous peoples.

- Defines Adverse Impact as "any adverse environmental, social, socio-economic, health, cultural, occupational safety or health, and community health and safety effect suffered or borne by any entity, natural person, ecosystem, or natural resource, including, but not limited to, the environment, flora and fauna, where such effect is attributable in any degree or extent to, or arises in any manner from, any action or omission on the part of the Project Proponent, or from the design, development, construction, implementation, maintenance, operation, or decommissioning of the Project or any activities related thereto".
- Provides in Chapter X for SEA – see above.
- Outlines in detail the requirements for projects that “may cause impact on environmental quality” to undergo impact assessment, either in the form of a full EIA or a simpler Initial Environmental Examination (IEE)
- Requires EIAs to include scoping (not required for IEE); undertaking an analysis of alternatives; considering cumulative impacts; and conducting public consultation throughout the process.
- Requires IEE and EIA projects to have Environmental Management Plans (EMP) covering implementation, monitoring and management measures to avoid and mitigate negative environmental impacts.
- In approving projects, the Ministry issues an Environmental Compliance Certificate (ECC) valid for five years (as of 2018 few ECCs have been issued⁵²). The ECC may prescribe a range of conditions including:

Article 91e: Nature conservation and management: (i) protection and rehabilitation of sites, environments or species, (ii) effectiveness of environmental measures to prevent or minimize Adverse Impacts on certain environments or species; and (iii) biodiversity offsets;

3.5.5. Environmental Quality (Emission) Guidelines

These 2015 Guidelines⁵³ were issued as a MOECAAF Notification at the same time as the EIA Procedure. The Guidelines provide the basis for regulation and control of noise and vibration, air emissions, and effluent/liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health and set parameters for a number of sectors/industries. The limits and parameters are a reference for conducting EIAs and establishing EMPs.

Several sets of Guidelines on the implementation of EIAs are being worked on by MONREC and development partners including:

- General Guidelines
- Sectoral Guidelines on hydropower, oil and gas, mining
- Guidelines on Public Participation

⁵² Myanmar Times. [Ministry issues first ECC but online database urged](#). 27-09-2017; for more details see also the [Woodside's ECC \(2018\)](#)

⁵³ Myanmar [National Environmental Quality Emissions Guidelines \(Burmese\)](#), December 2015, [unofficial English translation](#)

Section 4.1 identifies gaps in the EIA Procedure concerning biodiversity, and **Section 4.2** covers how to conduct an EIA that addresses biodiversity impacts effectively.

3.6. Laws relating to Terrestrial Biodiversity

The two main pieces of legislation protecting **terrestrial biodiversity** are the 1992 Forest Law⁵⁴ and the 2018 Biodiversity and Conservation of Protected Areas Law⁵⁵ (replacing the 1994 Protection of Wildlife and Conservation of Natural Areas⁵⁶) and implementing legislation.

3.6.1. Forest Law

In September 2018, the Myanmar parliament enacted a revised Forest Law, which replaces the 1992 Forest Law. The updated Law espouses principles and outlines practices to support the protection of forests, related biodiversity and ecosystems services, conservation initiatives, and sustainable management of forests, and more emphasis is put on managing community forests in a sustainable matter.⁵⁷ The updated Law also imposes tougher penalties for offenders, who now face up to 15 years in prison.

3.6.2. Forest Rules

The 1995 Rules⁵⁸ build upon the 1992 Forest Law and deal with reserved forests (off-limits to development), the declaration of areas as protected public forest, the management of forest land, the establishment of forest plantations, and the procedures for obtaining permission to extract forest produce. Of note is the shift away from treating forests as a purely commercial resource, to recognising the value of the ecosystem services they provide: their important contribution to the food, clothing, and shelter needs of the public (provisioning services), and for the perpetual enjoyment benefits that forests provide. The rules also recognise the importance of forests for watershed protection (regulating services) and environmental and biodiversity conservation.

3.6.3. Community Forest Instructions

To support the shift evident in the Forest Rules, prior to their enactment, the Forest Department issued the 1995 Community Forestry Instructions to promote community participation in forestry. This gives legal backing for rural communities to co-manage forests, to support economic development in rural areas, and provide basic needs to local communities, while encouraging active participation of rural populations and greater environmental conservation. It also recognises the rights of communities to have equitable use of forest adjacent to their villages because of its

⁵⁴ See MONREC (2018). [The Forest Law](#). The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

⁵⁵ See MONREC (2018). [Biodiversity and Conservation of Protected Areas Law](#). The Republic of the Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

⁵⁶ See Forest Department (1994). [Protection of Wildlife and Conservation of Natural Areas Law](#) The Republic of the Union of Myanmar, Minister of Forestry

⁵⁷ Although the term ‘ecosystem services’ is not referred to, the link between forests and watershed and soil protection is clearly made

⁵⁸ See Forest Department (1995). [Myanmar Forest Policy](#). The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

importance to their livelihoods.

The Forest Rules and related Community Forestry Instructions were important in shifting the emphasis away from a primary focus on commercial exploitation of forests to balancing economic, conservation and community interests. While the establishment of Community Forest User Groups and area under management has proceeded slowly⁵⁹ (roughly 4000ha/yr, compared to an annual target of 26,000ha/yr), the limited evidence available suggests that they have resulted in improved ecosystem services (e.g. water supply and soil condition) and biodiversity habitat.⁶⁰

However, these do not allow for community participation in the co-management of forests (which would offer a potential avenue of employment for some local people and therefore an incentive to protect biodiversity). Nor do they provide for revenues obtained from Protected Areas to be directed to managing the Protected Areas Network.

3.6.4. Forest Department Notification No. 583/94⁶¹

This Notification lists protected species, which are summarised in **Table 3** overleaf.

3.7. Legal Framework related to Aquatic and Marine Biodiversity

The following laws are relevant to the **protection of marine biodiversity**:

- **Conservation of Water Resources and Rivers Law (2017).**⁶² The law, amending the 2006 *Conservation of Water Resources and Rivers Law*, aims to conserve and protect water resources and rivers for use by the public and to protect against industry, vessels or local people polluting the environment or damaging ecosystems.
- **Freshwater Fisheries Law (1991).**⁶³ The law is mainly concerned with the exploitation of freshwater fish resources and prohibits the pollution of waters important for freshwater fisheries.
- **Myanmar Marine Fisheries Law (1990⁶⁴, amended in 1993).**⁶⁵ The 1990 law provided for the establishment of conditions, prohibitions, orders, and directives relating to the conservation and protection of the fishery. The amendment mainly covers the offences and related penalties related to the prohibitions outlined in the 1990 law.

⁵⁹ Maung, T. (2015). Leaflet No.27. Ministry of Environmental Conservation and Forestry Forest Department

⁶⁰ Tint, K. et al. (2011). [Community Forestry in Myanmar: Progress & Potentials](#). Ecosystem Conservation and Community Development Initiative, Yangon, Myanmar

⁶¹ Forest Department (1994). [Forest Department Notification No.583/94\(1994\)](#).

⁶² See DWIR (2017). [The Conservation of Water Resources and Rivers Law](#). The Republic of the Union of Myanmar, Directorate of Water Resources and Improvement of River Systems

⁶³ See the Minister of the Livestock and Fisheries (1991). [The Freshwater Fisheries Law \(1991\)](#). The Republic of the Union of Myanmar, The State Law and Order Restoration Council, Minister of the Livestock and Fisheries

⁶⁴ See the Ministry of the Livestock and Fisheries (1990). The [Myanmar Marine Fisheries Law \(1990\)](#). The Republic of the Union of Myanmar, The State Law and Order Restoration Council, Minister of Livestock Breeding and Fisheries

⁶⁵ See the Minister of Livestock Breeding and Fisheries (1993). Law Amending the Myanmar Marine Fisheries Law. The Republic of Union of Myanmar, The State Law and Order Restoration Council, Minister of Livestock Breeding and Fisheries

TABLE 3: PROTECTED SPECIES OF MYANMAR UNDER THE PROTECTION OF WILDLIFE AND CONSERVATION OF NATURAL AREAS LAW (1994)

CATEGORY 1	COMPLETELY PROTECTED WILDLIFE	SPECIES
	Mammals	39
	Birds	50
	Reptiles	9
CATEGORY 2	NORMALLY PROTECTED WILDLIFE	SPECIES
	Mammals	12
	Birds	43
	Reptiles	6
CATEGORY 3	SEASONALLY PROTECTED WILDLIFE (PROTECTED FROM 15 JUNE TO 30 SEPTEMBER)	SPECIES
	Mammals	2
	Birds	13

3.8. Legal Framework Governing Protected Areas⁶⁶

3.8.1. The Biodiversity and Conservation of Protected Areas Law (2018)⁶⁷

The Nature and Wildlife Conservation Division (NWCD) of MONREC leads on this Law and administers the Protected Areas System (see below).

This law replaces the Law on Protection of Wildlife and Conservation of Natural Areas (1994). The objectives of the Law are to:

- Implement the Government’s biodiversity strategy and policy; implement the Government’s policy on Protected Areas
- Protect wild animals, plants, ecosystems and migratory animals in accordance with International Conventions
- Regulate trade of wild animals, plants and their derivatives or products
- Protect geo-physically unique areas, endangered plants and animals and their natural habitats

⁶⁶ FFI Tanintharyi Conservation programme Report 39, ‘[Blueprint For A Network Of Marine Protected Areas In The Myeik Archipelago, Myanmar](#)’, Dr Phil Dearden, November 2016

⁶⁷ MONREC (2018). [Biodiversity and Conservation of Protected Areas Law](#). The Republic of Union of Myanmar, Ministry of Natural Resources and Environmental Conservation

- Protect wild animals and plants through the establishment of zoological and botanical gardens
- This law establishes seven categories of PAs: scientific reserve, national park, marine national park, nature reserve, wildlife sanctuary, geo-physically significant reserve, and local community Protected Areas.

Chapter III describes how the Government will set up a national level Supervisory Committee for Biodiversity and Conservation of Nature Areas. The Committee will give guidance on implementation of the objectives of the law and establish strategies and policies related to conservation of Protected Areas and the protection of endangered species.

Chapter IV outlines requirements for designation and management of Protected Areas, including a requirement for provisions to be made for customary rights and privileges for people in an area where a protected area is being proposed (Section 9c). The law also allows of payments for ecosystem services to be made within a protected area and for co-management of PAs between local communities and other bodies (Section 13e). The law enables entrance fees or other tourism related fees to be collected and for the establishment of buffer zones where community forests, community-based tourism and locally managed marine areas may be permitted (Sections 13f-g). The Ministry may allow or reject businesses from operating ecotourism projects within Protected Areas (Section 13h). Chapter VI states that hunting licences may be granted under certain conditions.

3.8.2. Protection of Wildlife and Protected Areas Rules

These 2002 Rules⁶⁸ establish a procedural framework for implementing the 1994 Protection of Wildlife and Conservation of Natural Areas Law. They specify that the Department shall carry out the following duties and functions in a Scientific Nature Reserve (Section 23a):

- conducting scientific research in land or marine areas where there are significant living and non-living organisms, geophysical characteristics and species; and
- studying and scrutinizing continuously the natural evolutionary system.

The Nature Reserve category also contains an explicit allowance for ecotourism activities and benefit sharing where duties include "Making plans and carrying out eco-tourism and reinvesting part of the income for the development of the Nature Reserve." (Section 23g) There are also provisions under the Law (Section 11) and the Rules (Sections 7-11) to protect the rights of people adversely affected by reserves, although these are quite perfunctory (make provisions for reasonable rights and benefits," Section 11).

There is also provision for creation of a buffer zone around Protected Areas (Section 22e) and "administering effectively in the buffer area for the development of interest of the local people without adversely affecting the nucleus conservation area of the nature reserve." (Section 25a). The Act also provides that the Minister shall "form and assign duties to a Preliminary Scrutiny Body to inquire into and determine in the manner prescribed the affected rights of the public in the relevant area within which it is proposed to determine and establish under sub-section a and to carry out the work of demarcation." (Section 8e). It appears that no such body has yet been established.

Draft Biodiversity and Conservation of Protected Areas Rules (2019 tbc)

The Draft Biodiversity and Conservation of Protected Areas Rules (2019 tbc) were undergoing

⁶⁸ MOECAAF (2002). *Rules Relating to the Protection of Wildlife and Conservation of Natural Areas*. The Republic of Union of Myanmar, Ministry of Environmental Conservation and Forestry

a final round of consultations at the time of writing. Discussion focused on the importance of changing the existing definition of 'Local Community' to 'Indigenous Peoples' and a proposed definition of stakeholders/beneficiaries of Protected Areas as well as inheritance rights and revenue management.

3.9. Institutional Arrangements for Biodiversity Protection

Institutional arrangements for environmental protection and biodiversity conservation in Myanmar have been modified extensively in recent years and are currently believed to be as in **Figure 1** (overleaf).

The main Ministry with responsibility for environmental and biodiversity protection is the Ministry of Natural Resources and Environmental Conservation (MONREC). There are also various high-level cross-departmental Committees including the National Environmental Conservation and Climate Change Central Committee, under the patronage of the Vice President (1) of the Republic of the Union of Myanmar, which sets the strategic direction on environmental policy. Information about the work of these Committees is scarce and usually found in reports of their meetings in state media or the website of the President's Office (www.president-office.gov.mm).

With all government committees, there is no direct participation of private sector representatives. However occasional opportunities arise for the private sector to participate in multi-stakeholder workshops involving committee members, or even to initiate them, and invite Committee members to participate.

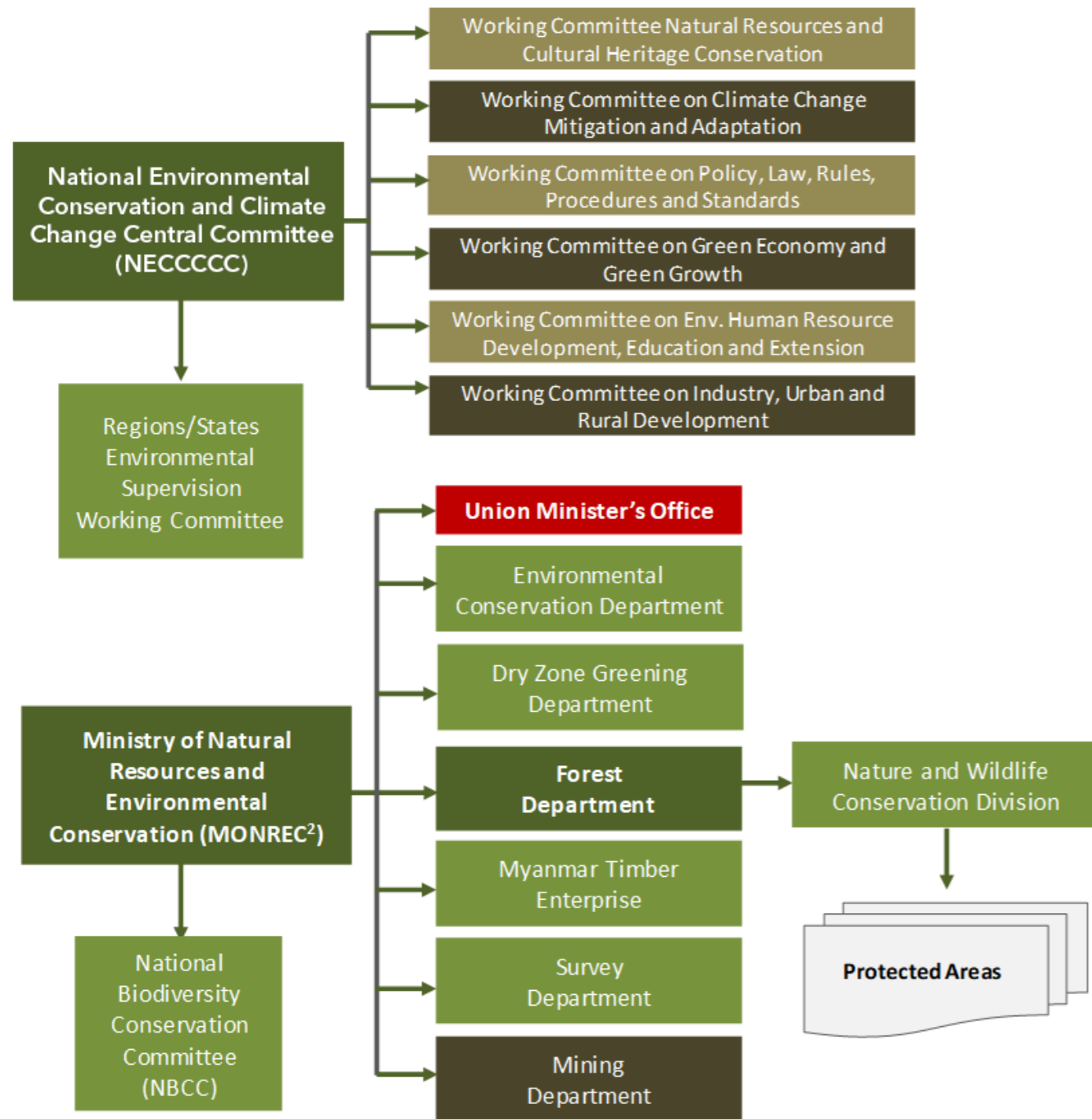
3.9.1. Ministry of Natural Resources and Environmental Conservation (MONREC)

Between 2011 and 2016, the Ministry was known as the Ministry of Environmental Conservation and Forestry (MOECAAF), which was formed from the Ministry of Forestry in September 2011. MONREC is the focal ministry for environmental protection and biodiversity related matters.

- The **Forest Department** has responsibility for biodiversity protection and for timber production, based upon a policy of the sustainable utilisation of valuable forest resources. It works to promote the economic development of forests, while ensuring that people's basic needs for timber, fuelwood, bamboo and other forest products can be met in a manner that does not adversely affect the natural environment. The **Nature and Wildlife Conservation Division** (NWCD) of the Forest Department is responsible for biodiversity protection and is the focal organisation for Myanmar's efforts to meet its obligations under the Convention on Biological Diversity (CBD), and sponsor of the NBSAP. It is developing management plans for Myanmar's Protected Areas (this includes Lampi Marine National Park).
- The **Environmental Conservation Department (ECD)** is responsible for implementing Myanmar's National Environmental Policy, strategy, framework, planning and integrating environmental consideration into the national sustainable development process. It is also responsible for: managing natural resources conservation and sustainable utilisation; pollution control of water, air and land; and for a sustainable environment. It serves as a focal point for cooperation with other government organisations, civil society, private sectors and international organisations concerned with environmental management. The ECD is the focal organisation for Myanmar's efforts to meet its obligations under the UN Framework Convention on Climate Change (UNFCCC). It is also the agency responsible for the EIA process, and for reviewing EIA/EMP and issuing ECCs.

- The **Dry Zone Greening Department (DZGD)** is responsible for implementing the greening of Myanmar's central dry zone. The DZGD is the focal organisation for Myanmar's efforts to meet

Figure 1: Institutional Arrangements for Biodiversity Protection in Myanmar



Note 1: Until 2011, this was named the National Commission on Environmental Affairs (NCEA), it was then the National Environmental Conservation Committee (NECC), and as of June 2016 became the NECCCC
Note 2: Until 2016, this was named the Ministry of Environmental Conservation and Forestry (MOECF).

its obligations under the UN Convention to Combat Desertification (UNCCD).

- The other departments in MONREC are the **Survey Department** (responsible for topographic mapping throughout the whole country), the **Myanmar Timber Enterprise (MTE)** (with responsibility for commercial forestry), and the **Department of Mines** tasked with promoting investment in the sector, ensuring mine safety through inspections and regulation and enforcing mining laws and regulations. The mining, gems and pearls state-owned enterprises are also part of MONREC.

Other ministries that the NBSAP identifies as having a role in conservation, management and utilisation of natural resources and biodiversity are:

- Ministry of Agriculture, Livestock and Irrigation (MOALI) which includes Fisheries (see below)
- Ministry of Education
- Ministry of Planning and Finance
- Ministry of Health and Sports

3.9.2. Department of Fisheries

The Department of Fisheries (DoF), under MOALI is responsible for fisheries resources, fisheries products, aquatic living organisms, and aquatic endangered species. The DoF has the ability to make area restrictions under Section 23 of the Marine Fisheries Law: "The DG may, for the purpose of carrying out the fishery systematically and for the conservation and protection of the fish, issue conditions, prohibitions, orders, and directives relating to fishery."

Although this section conveys very broad powers, it is directed towards the "fishery" as opposed to biodiversity conservation. Fishery is further defined (Section 2h) as "carrying out operations relating to fish in a systematic manner, production on a commercial scale, conservation of seeds and for development. This expression also includes catching, breeding, exploring, researching, seeding, propagating, processing, transporting, storing and selling of fish etc." This section has been used for area protection through notifications, and to prohibit fishing within the 2-mile buffer zone around Lampi Island Marine National Park.

The DoF is responsible for oversight of the Locally Managed Marine Areas (LMMAs), established to prevent over-exploitation of coastal fisheries; has also been an active supporter of marine Protected Areas; and has worked closely with FFI to establish the new LMMAs in the Myeik Archipelago. However, they have no experience in PA management. International best practice recommends against housing a small conservation unit within a larger resource development ministry.

3.9.3. Institutional constraints and tensions

The scope of the remit of MONREC is diverse and potentially contradictory. This creates some risk of intra-institutional tension in balancing the various roles and responsibilities within the Ministry. In particular, the Forest Department must balance economic exploitation of Myanmar's forest resources with forests' ecosystem services and livelihood value to local communities. There are also tensions between environmental conservation and mining objectives.

A similar tension exists in the Department of Fisheries, which is responsible for overseeing the

commercial exploitation of fisheries while establishing Locally Managed Marine Areas (LMMAs). While not inherently unworkable, it does require clear divisions of responsibility and guarding against actual or implied hierarchies. It has no experience of Protected Areas management but is responsible for LMMAs.

While NWCD of the Forest Department operates with a degree of autonomy and has extensive and growing experience with Protected Areas, it has less experience with marine Protected Areas (although the Lampi Marine National Park is under its jurisdiction).

The trend towards **decentralising** powers, such as for issuing small and subsistence mining licences to state and region administrative structures and local governments in line with the 2008 Constitution while conceptually sound, can also risk a degree of policy (and practice) incoherence between the central and regional/local Government, complicated by capacity constraints especially at the regional or local level. While the NECCCCC might be expected to help guard against such disconnects with the support of the Regions/States Environmental Supervision Working Committee, this is often difficult to achieve in practice. The executives at state and region level are still dominated by a top-down appointment process and ministers have little control over the administrative apparatus, limiting the effectiveness of the sub-national governments.⁶⁹

3.9.4. National Environmental Conservation and Climate Change Central Committee (NECCCCC)

The NECCCCC is the latest institutional incarnation of what was originally the National Commission for Environmental Affairs (NCEA), which was established in 1990. The original role was to advise Government on environmental policies, act as a coordinating body for environmental affairs, and promote environmentally sound sustainable development. The NCEA was reorganised as the National Environmental Conservation Committee (NECC) in 2011 and assigned responsibility for guiding national activities to tackle climate change-related problems. It also is responsible for promoting international collaboration and cooperation relating to environmental conservation. As of June 2016, it became the NECCCCC. The Committee submits reports to the Cabinet when appropriate.

The NECCCCC has a goal of achieving harmony and balance between economic development and environmental conservation across multiple sectors. It is under the patronage of the Vice President (1) (U Myint Swe) and chaired by the Minister for Natural Resources and Environmental Conservation. The composition of the Committee includes the Deputy Ministers of several other ministries (Home Affairs, Foreign Affairs, Health, Energy, etc.) and the Director Generals of a number of related departments. As of January 2017, the work of the NECCCCC is supported by the following six working committees highlighted in **Figure 1** above. The Committee extends to the regional and state level (and to district and township level), with the support of the Regions/States Environmental Supervision Working Committee.

NECCCCC held its sixth coordination meeting in September 2018. The Vice President emphasised that conservation of nature and the environment was the main priority work of the State. Therefore, the government was focusing on strengthening environmental policy, law and procedures to coordinate sector-specific work processes on preserving the natural environment and combating climate change.

⁶⁹ Nixon, H. et al. (2013). [State and Region Governments in Myanmar](#). MDRI-CESD and The Asia Foundation

3.9.5. National Biodiversity Conservation Committee (NBCC)

The NBCC was formed in February 2017 and is chaired by the Minister of MONREC. The NBCC is responsible for implementing the NBSAP (2015-2020). This inter-departmental Committee involves several Departments from various Ministries referred to below. It is responsible for negotiation and collaboration among the various Ministries working on nature conservation and for providing guidance related to biodiversity related policies and practices.

3.9.6. National-level Central Committee for the Administration and Managing of Natural Resources in Coastal Areas (NCCAMNRCA)

This Committee was formed in 2017, chaired by Vice President (1) (U Myint Swe) together with the Union Minister of MONREC and six Chief Ministers of coastal States/Regions, including Tanintharyi, seven Permanent Secretaries of Union Ministries and a representative from the Navy. The Permanent Secretary for MONREC is Secretary, and the Forest Department provides the Secretariat.

The NCCAMNRCA Terms of Reference are to:

1. Play a leading role in development of the national coastal resources policy, legal and institutional frameworks;
2. Encourage related government institutions to collect information and implement an information management system as a basis for coastal resource management of the country;
3. Play a leading role in development of the Integrated Coastal Resource Management Programme at the national level and, based on it, formulate State/Regional level coastal management action plans.
4. Facilitate amongst Union and State/Regional government institutions to strengthen existing coastal and marine protected area systems while expanding the systems with representative marine and coastal ecosystems of the country.
5. Promote coordination and cooperation with neighbouring countries through trans-boundary cooperation in coastal and marine biodiversity conservation and research and technology exchange.
6. Facilitate among related stakeholders in implementation of international commitments such as UN Convention on Biological Diversity, UN Framework Convention on Climate Change, UN Agenda 21 and etc. by means of effective conservation and management of coastal and marine ecosystems.
7. Supervise establishment of coastal research centres and development of human resources in coastal resource management sector.
8. Develop and activate programs that promote broader community participation and private sector engagement to protect against illegal fishing, encroachment of foreign vessels, use of prohibited fishing methods and discharging pollutants into coastal and marine areas of Myanmar.
9. Organise State/Regional Coastal Management Committees and technical working groups as appropriate to improve the performance of the National Committee.
10. Promote cooperation with international conservation communities for technical and logistic support in sustainable coastal and marine area development.

The fourth meeting of the Committee (May 2018) focused on the importance of ensuring that all development work in coastal areas conformed to the existing policy and legal frameworks for biodiversity conservation, highlighting the need for EIAs for projects in all coastal areas. Participants also discussed measures being taken based on the resolutions made in the previous meetings, including conservation of coastal areas, research, illegal fishing and conservation of mangrove forests.

3.10 Myanmar's International Biodiversity Commitments

Myanmar is a signatory to several international and regional environmental agreements, treaties and protocols relevant to the protection of biodiversity (see **Table 4**). This includes the UNFCCC; UNCCD; CITES; Ramsar Convention; WHC; and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR). Treaties are typically incorporated into national policy and law that may then have implications for private sector operations. The two most important of these for this Briefing Paper are discussed in more detail below.

3.10.1. Convention on Biological Diversity (CBD)

The CBD is the key multilateral treaty relating to the protection of biodiversity. All UN member states have ratified the treaty, except the United States, which has signed but not ratified it. Myanmar signed the CBD in 1992 and ratified the convention in 1994.

The three main goals of the Convention relate to:

- i) the conservation of biodiversity;
- ii) the sustainable use of its components; and
- iii) the fair and equitable sharing of benefits arising from genetic resources.

Article 6 requires States to develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity, and to integrate conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies. All signatories to the CBD are required to produce and periodically update National Biodiversity Strategies and Action Plans (NBSAPs).

The Myanmar Government adopted its first NBSAP in 2011 and a revised NBSAP (2015-2020) in 2015.⁷⁰This provides a strategic framework for the conservation of Myanmar's biodiversity to address new and emerging challenges arising from political, economic and social reform in Myanmar, as well as to take into account new opportunities, and align targets and actions with the CBD's Strategic Plan for Biodiversity 2011-2020 and 20 related targets, known as the Aichi Biodiversity Targets (2010).⁷¹

The 2015-2020 NBSAP is a comprehensive piece of work that faithfully establishes targets in all key areas required. It also helpfully illustrates how implementation of the NBSAP can advance implementation of several other multilateral environmental agreements Myanmar is party to. However, as section 5.2 of the NBSAP acknowledges, a major challenge for its effective implementation in Myanmar is limited capacity and resources. The NBSAP identifies the capacity needs of different thematic areas under individual national targets. It also commits to the conduct of a technology needs assessment and the preparation of a capacity development plan implementing the NBSAP.

⁷⁰ For more information see The Convention on Biological Diversity (2018). [National Biodiversity Strategies and Action Plans - Myanmar](#). UN Environmental. (Accessed 27-09-2018)

⁷¹ Ibid.

TABLE 4: MULTILATERAL ENVIRONMENTAL AGREEMENTS, TREATIES AND PROTOCOLS SIGNED BY MYANMAR

AGREEMENTS/TREATIES/ PROTOCOLS	DATE OF SIGNATURE / RATIFICATION / ACCEDED
Regional	
Plant Protection Agreement for the Southeast Asia and the Pacific Region	4 November 1959
ASEAN Agreement on the Conservation of Nature and Natural Resources	16 October 1997
ASEAN Agreement on Trans-boundary Haze Pollution	13 March 2003
International	
United Nations Framework Convention on Climate Change (UNFCCC)	25 November 1994
Convention on Biological Diversity (CBD)	25 November 1994
International Tropical Timber Agreement (ITT A)	31 January 1996
Vienna Convention for the Protection of the Ozone Layer	24 November 1993
Montreal Protocol on Substances that Deplete the Ozone Layer	24 November 1993
London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer	24 November 1993
Convention for the Protection of the World Culture and Natural Heritage (WHC)	29 April 1994
United Nations Convention to Combat Desertification (UNCCD)	2 January 1997
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	13 June 1997
Cartagena Protocol on Biosafety	11 May 2001
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR)	4 December 2002
Kyoto Protocol to the Convention on Climate Change	13 August 2003
Stockholm Convention on Persistent Organic Pollutants (POPs)	18 April 2004
Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)	17 March 2005
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity	9 January 2014

Source: Myanmar National Biodiversity Strategy and Action Plan 2015-2020

The latter will cover all stakeholders, such as central government, NGOs, CBOs, local government, and communities.

The NBSAP highlights the persistent problem of under-funding for Protected Areas management: the financial resources directed to Protected Areas in Myanmar are very low, and a significant increase in financial and human resources is warranted. Over the period of 2011-2015 an average of \$1.9 million has been spent per year. While self-generated revenues are negligible (less than US\$17,000 in 2013-2014), if the implementation of the Ecotourism Policy and Strategy generates additional revenues, in principle some of these should be earmarked for support to Protected Areas.

Myanmar's NBSAP includes numerous references to the private sector, both in terms of the "massive opportunity" of working with business leaders and investors to build a strong business case for conservation as well as through recognising that biodiversity and ecosystem services need to be better integrated into its management of private sector operations. **Box 4** gives more detail of points in the NBSAP relevant to business, although to date, little has been done by the government to implement them.

Any company involved in, relying on or significantly impacting access to natural resources in Myanmar, such as agriculture, fisheries, forestry, oil, gas and mining, infrastructure etc should therefore consider the implications for its business of the Convention, and its implementation in Myanmar as signalled by the NBSAP.

3.10.2. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES is the main multilateral treaty aimed at protecting endangered plants and animals. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival in the wild. It provides varying degrees of protection to more than 35,000 species of animals

and plants, whether they are traded as live specimens or as the fur/skins, bones or other parts of dead animals. Each signatory to the Convention must designate one or more management authorities to administer a licensing system that governs the import, export, re-export and introduction from the sea of species covered by the Convention. Myanmar became a signatory to CITES in June 1997 and the convention entered into force later that year.

The Convention is particularly relevant to Myanmar, given that the NBSAP identifies the trade in endangered wildlife as one of the greatest threats to biodiversity in Myanmar. As commercially valuable wildlife species have been wiped out in neighbouring countries, Myanmar has increasingly become a source of wildlife products (see **Section 2.4**).

Measures to address wildlife trafficking are included in the NBSAP (2015-2030). These include building the capacity of law enforcement authorities to enforce wildlife trafficking regulations, in part through involvement in the ASEAN Wildlife Enforcement Network (ASEAN-WEN) and implementing alternative livelihood programmes to reduce the dependence of key communities on illegal wildlife trade. Article 12 requires signatory States to submit biennial reports on their work and on the implementation of the Convention. However, Myanmar ((NWCD) of the Forest Department) has so far submitted only two reports - one in 2005 (covering the years 2003 and 2004) and the second one in 2017.

While illegal business is the main driver of the trade, legitimate businesses that open up isolated areas through infrastructure such as roads, railways, and access to mines and hydropower dams will potentially contribute to trafficking of endangered species and bush-meat. This should be addressed in management plans, including codes of conduct for worker camps and provision of adequate catering.

BOX 4 - BUSINESS RELEVANT PROVISIONS OF MYANMAR'S NBSAP

- Creating incentives for investment that will protect biodiversity, as well as creating a national investment framework that minimises unnecessary environmental impacts, including by incorporating environmental values into the cost-benefit analyses that the Myanmar Investment Commission (MIC), MONREC and other relevant national and sub-national institutions should conduct when reviewing proposed investments
- Using policy tools and international standards such as the Equator Principles, EIA, biodiversity valuation, and natural capital accounting that can support more efficient, effective, and equitable use of natural resources
- Using tools such as the Business and Biodiversity Offset Programme (BBOP) tools to assess and avoid or minimise impacts from development
- Legislating to require that Biodiversity Action Plans be prepared for any new large-scale resource extraction or power generation project
- Revising the EIA Procedure, and the Environmental Quality Standards to include adequate protection of biodiversity and ecosystem services



4

HOW THE EIA PROCESS CAN BE USED TO PROTECT BIODIVERSITY/ECOSYSTEM SERVICES

4.1. Biodiversity Related Gaps in the EIA Process

4.2. Ensuring Effective Consideration of Biodiversity when Conducting EIAs

4.3. Screening

4.4. Scoping

4.5. Baseline Study

4.6. Impact Assessment

4.7. Mitigation planning

4.8. Monitoring

An EIA process is a way to identify, predict and assess the type and scale of potential impacts on biodiversity and ecosystem services, and develop prevention and mitigation measures and offset any residual impacts that cannot be avoided or mitigated. The introduction of EIA requirements in 2015 represented an important milestone in Myanmar's regulation of the impacts of the private sector.

Myanmar's EIA Procedure (2015) describes two different environmental assessment options depending on the type of project: (i) those that may have significant adverse impacts are EIA Type Projects; and (ii) those with less significant impacts or those whose impacts can easily be mitigated require Initial Environmental Examination or IEE Type Projects. Annex 1 of the EIA Procedure lists the types and sizes of project.

Furthermore, the biodiversity values of the area of the Project play a role in determining whether a project should conduct an EIA in Myanmar. An EIA is required in all cases where the Project will be "located in or will have foreseeable adverse effects on any legally protected national, regional or state area, including without limitation: (i) a forest conservation area (including biodiversity reserved area); (ii) a public forest; (iii) a park (including marine parks); (iv) a mangrove swamp; (v) any other sensitive coastal area; (vi) a wildlife sanctuary; (vii) a scientific reserve; (viii) a nature reserve; (ix) a geophysically significant reserve; (x) any other nature reserve nominated by the Minister; (xi) a protected cultural heritage area; and (xii) a protected archaeological area or area of historical significance."⁷²

Significantly, the Procedure also states that in addition to these categories, and the project types listed in Annex I, attention will be paid to "biodiversity and conservation" and "fragile ecosystems"⁷³ in making this determination, introducing a low threshold for triggering a full EIA where there may be

⁷² See MOECF (2015). [Environmental Impact Assessment Procedure \(EIAP\)](#) Article 25. The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

⁷³ Ibid. Article 28(j)

impacts on biodiversity. Given the many threats in Myanmar, many ecosystems across the country are now considered fragile. Examples of ecosystems that are typically fragile include wetlands, deserts, mountains, coral reefs and certain coastal areas.

4.1. Biodiversity Related Gaps in the EIA Process

Whilst the EIA Procedure includes many features of good practice, there are some gaps and concerns related to biodiversity and ecosystem services which could usefully be addressed when it is revised and as Guidelines are developed:

- Some activities with potentially significant adverse impacts on biodiversity may not be subject to a full EIA. The distinction between when a brief, Initial Environmental Examination (IEE) needs to be undertaken compared to a more detailed EIA⁷⁴ does not take account of how **cumulative impacts** of such developments in close proximity to one another could be especially damaging for biodiversity and on communities dependent on ecosystem services.
- There is no reference to **assessing ecosystem services**, who depends on them and how the Project will impact on them. The only reference in the Procedure to ecosystem services is in Article 91(p) which allows for the Ministry to prescribe 'contributions to the Environmental Management Fund'⁷⁵ in accordance with Article 30 of the Rules: (i) pollution charges (emissions, waste), and (ii) charges on the use of natural resources and benefits from ecosystem services.
- It is not clear why "**fragile ecosystems**" have been singled out as opposed to "highly threatened or valuable ecosystems supporting threatened or restricted range species," which would normally also be included in this type of standard or procedure.
- Article 25 of the EIA Procedure does not mention **Key Biodiversity Areas**. These have no legal standing as an official form of land tenure except where they overlap with formally established Protected Areas. However, KBAs now cover 17% of the country, comprising 132 sites. That area includes many different forms of land tenure, ownership and use, making their effective management to maintain and enhance biodiversity very important and very challenging.
- The **mitigation hierarchy** is becoming increasingly accepted as the basis for mitigating impacts on biodiversity and other environmental aspects (CSBI, 2015).⁷⁶ Although the mitigation hierarchy (see Section 5) is alluded to in Article 2(j) under Best Available Techniques, these are no further references to BAT, and there is no absolute requirement to apply the hierarchy when conducting an IEE/EIA.
- While the potential for **biodiversity offsets** is mentioned, it is unclear from the Procedure whether offsets are required for residual adverse impacts on biodiversity in line with internationally recognised best practice,⁷⁷ or whether they are optional. There is currently no Myanmar offset policy.
- The current framework provides **little guidance to the private sector or to regulators** about how to apply the requirements in the context of private sector projects impacting biodiversity

⁷⁴ Ibid. Annex I

⁷⁵ Arrangements for the Environmental Management Fund have not yet been defined. Furthermore, a central Fund, as this text appears to imply, would not effectively allow the protection of the ecosystems providing the services to the Project.

⁷⁶ CSBI (2015). A [cross-sector guide for implementing the Mitigation Hierarchy](#). Cross Sector Biodiversity Initiative

⁷⁷ Best practice in this context is [IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources](#)

and ecosystems services, although it is hoped that the forthcoming sectoral EIA guidelines hydropower, oil and gas, and mining, and ideally the cross-sectoral guidelines, will address this.

4.2. Ensuring Effective Consideration of Biodiversity when Conducting EIAs

The EIA Procedure sets out requirements for Screening, Scoping, Consultation, Disclosure, Monitoring and Reporting. Where an EIA is required, more extensive studies and investigations, including a Scoping Study, are required.

Given the Procedure's requirement to address potential impacts on biodiversity, this should receive early and thorough attention in screening. Early attention to biodiversity issues in the EIA process also has important business benefits. Potential impacts can be identified and ideally avoided or at least minimised in the earliest stages of planning which is often the least-cost and most effective stage to do so. Once a project proceeds, the costs of redesigning, re-siting, or offsetting to address impacts can be far more complex and costly.

While there are no additional official guidance from the Myanmar Government concerning how to address biodiversity and ecosystem services in IEE/EIA/EMP, companies can draw on good international practice in designing and carrying out assessments to meet the EIA Procedure requirements, in order to avoid biodiversity impacts to the greatest extent possible.⁷⁸ **Figure 2** shows how biodiversity and ecosystem services should be addressed at different stages of the EIA process.⁷⁹

4.3. Screening

At this stage, a quick, high-level desktop analysis is advisable to determine whether there may be potential red flag biodiversity issues associated with the project. This involves obtaining data on the location of legally designated areas such as Protected Areas and Ramsar sites.

As a matter of good practice and to pre-empt possible future changes in Myanmar policy and law, the assessment should also identify other areas of international importance such as KBAs, IBAs, HCVA's and Alliance for Zero Extinction sites and Intact Forests⁸⁰ to see if there is any overlap with the proposed project area. Sources of information are available in **Box 5** (page 55).

Stakeholders likely to be affected by business activities should be identified at an early stage, and engagement begin so that the company can begin to understand their dependence on ecosystem services and the potential for business activities to adversely infringe on any related rights.

4.4. Scoping

The purpose of this phase is to identify key issues associated with the project to ensure that the EIA focuses on the most significant potential impacts in the project area of influence, to identify data gaps and define the "project area of influence" and to suggest suitable survey methodologies.

78 Hardner, J. et al. (2015). [Good Practices for Biodiversity Inclusive Impact Assessment and Management Planning](#). Cross Sector Biodiversity Initiative

79 See also IPIECA/IOGP (2011) [Ecosystem services guidance. Biodiversity and ecosystem services guide and checklists](#). IOGP Report Number 461. London, IPIECA and IOGP; and Landsberg, F., Stickler, M., Henninger, N., Treweek, J. and Venn, O. (2013). *Weaving Ecosystem Services into Impact Assessment: A Step-by-Step Method*. World Resources Institute. Washington, D.C.

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The "project area of influence" is generally larger than the physical footprint of the project and includes the area within which a project may potentially directly, indirectly, and cumulatively cause impacts to biodiversity values. Scoping involves at least one site visit and consulting with relevant stakeholders, as well as the consideration of project **alternatives**. These may include changes to the design, timing, or technology used by the project, or adjustments to its size and location.

4.5. Baseline Study

A comprehensive baseline study should identify the biodiversity and ecosystem values (both in the immediate and wider area around a project site i.e. 'the area of influence'). Developing the baseline will involve field visits to conduct habitat and species-specific surveys.

A baseline assessment will look at the habitats that will be affected, and the range and status of the main species groups that live in the area. It is also important that a habitat map based on different vegetation types in the project area of influence is prepared, possibly using a geographic information system (GIS) program. The baseline should on its own, or in combination with a social baseline study, also identify priority ecosystem services and their beneficiaries. Particular emphasis should be paid to:

- highly threatened habitats and species and nationally or globally threatened species (e.g., IUCN Red List of Threatened Species, see **Box 5**);
- Species with restricted ranges (e.g. terrestrial fauna with a range < 50,000 km²; marine fauna with ranges < 100,000 km²; expert advice should be sought to identify range-restricted plant species);
- protected species;
- areas that support large numbers of congregatory and migratory species;⁸¹
- areas associated with key evolutionary processes.⁸²

An excellent guide to undertaking biodiversity baselines is contained within the *Good Practices for the Collection of Biodiversity Baseline Data*.⁸³

4.6. Impact Assessment

Impacts are often determined by assessing the **likelihood** of impacts occurring and their **significance**. **Impact significance** in turn is based on the value of habitats and species present and the magnitude, extent, and reversibility of impacts.

Impact analysis requires professional judgment and will require input from relevant experts. This should include a full assessment of the dependence of project-affected communities on ecosystem

81 Species that gather in globally significant numbers at a particular site and at a particular time in their life cycle for feeding, breeding or resting (during migration). For more information see UNEP-WCMC (2014). [Biodiversity A-Z](#). UNEP-WCMC, Cambridge, UK (Accessed 27-09-2018)

82 Sometimes, particular physical features of an area such as topography, temperature, geology can influence the evolutionary processes that give rise to genetically unique populations such as isolated mountain tops. Sometimes they are areas that contain Evolutionarily Distinct and Globally Endangered (EDGE) species.

83 Gullison, R.E., J. Hardner, S. Anstee, M. Meyer. 2015. [Good Practices for the Collection of Biodiversity Baseline Data](#). Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative

Figure 2: Integrating Biodiversity into the EIA process

<p>Screening</p> <ul style="list-style-type: none"> • Identify potential red flag issues e.g. sites designated as important for biodiversity (Protected Areas, Key Biodiversity Areas, others)
<p>Scoping</p> <ul style="list-style-type: none"> • Undertake site visit and consult key stakeholders to identify issues, alternatives, and data gaps
<p>Baseline Studies</p> <ul style="list-style-type: none"> • Field visits and surveys to identify biodiversity and ecosystem services to support impact assessment (direct, indirect and cumulative)
<p>Impact Assessment</p> <ul style="list-style-type: none"> • Determine the nature, temporal and spatial scale, reversibility, magnitude, likelihood, extent and significance
<p>Mitigation Planning</p> <ul style="list-style-type: none"> • Apply the mitigation hierarchy to eliminate or reduce negative impacts on biodiversity and include in EMP
<p>Submit EIA and EMP to authorities</p> <ul style="list-style-type: none"> • Include a clear presentation of priority biodiversity values, related impacts and mitigation measures • Publish EIA on project website
<p>Review</p> <ul style="list-style-type: none"> • Respond to comments from government and other stakeholders • Revise EIA/EMP as required • Discuss ECC Conditions
<p>Monitoring</p> <ul style="list-style-type: none"> • Follow conditions in ECC • Ongoing monitoring of biodiversity to confirm predicted impacts and efficacy of mitigation • Adjust as necessary

services and the potential for business activities to adversely infringe on any related rights.

- **Direct impacts** might include habitat loss and disturbance (noise, light, land or shipping traffic), emissions and effluents, hydrological effects, loss of provisioning services.
- **Indirect impacts** might include the accidental introduction and spread of invasive species, in-migration and associated impacts on resources.
- **Cumulative impacts** are the total impact arising from the project (under the control of the developer), other activities (that may be under the control of others, including other developers,

BOX 5 - SOURCES OF INFORMATION ON AREAS OF IMPORTANCE FOR BIODIVERSITY IN MYANMAR

National Wildlife and Conservation Division (NWCD), Forest Department, MONREC
nwcdfdmof@gmail.com

The Myanmar National Biodiversity Strategy and Action Plan (NBSAP) describes national biodiversity priorities and conservation planning. Myanmar’s obligations under the Convention on Biodiversity required them to enhance data management and in particular the Myanmar Biodiversity Clearing House Mechanism (together with WCS)
http://www.myanmarchm.gov.mm/biodiversity/bio_myanmar

Other Myanmar specific sources:

- Myanmar Marine Biodiversity Atlas (Wildlife Conservation Society) marine.myanmarbiodiversity.org
- Myanmar Biodiversity myanmarbiodiversity.org
- Myanmar Environmental Portal mya.gms-eoc.org/themes/biodiversity
- Wildlife Conservation Society Myanmar programs.wcs.org/myanmar/
- One Map Myanmar <https://www.facebook.com/OneMapMyanmar/>
- GEF/Phandeeya (open data projects) <http://phandeeyar.org/>

MyLAFF is a forum for sharing information about Land, Agribusiness, Forestry issues in Myanmar. Members include staff of donor agencies and NGOs, CSOs, project experts, academics and business people www.mylaff.org

NGOs and other stakeholders in Myanmar may also hold unpublished information

Global biodiversity databases, such as:

- Proteus Partners www.proteuspartners.org
- Integrated Biodiversity Assessment Tool for Business (IBAT) (information on Birdlife International Important Bird Areas, Endemic Bird Areas, Alliance for Zero Extinction sites, World Database of Protected Areas, Key Biodiversity Areas, Biodiversity Hotspots, High Biodiversity Wilderness www.ibatforbusiness.org
- Global Biodiversity Information Facility (GBIF) www.gbif.org
- Areas of Biodiversity Importance www.biodiversitya-z.org
- IUCN Red List of Threatened ecosystems www.iucnrl.org
- IUCN Red List of Threatened Species www.iucnredlist.org
- Conservation gateway, Nature Conservancy www.conservationgateway.org
- WWF Ecoregions, Ecoregions Conservation
- Intact Forest Landscapes, <http://www.intactforests.org/index.html>

local communities, government) and other background pressures and trends which may be unregulated. The analysis of a project's incremental impacts combined with the effects of other projects can often give a more accurate understanding of the likely results of the project's presence than just considering its impacts in isolation.⁸⁴

4.7. Mitigation planning

Mitigation planning aims to eliminate or reduce negative biodiversity impacts. In recent years the **mitigation hierarchy** has become accepted good practice for managing impacts to biodiversity (see **Section 5** below). Residual impacts that remain after mitigation measures have been applied require compensation, usually through offsetting.

As noted above, the EIA Procedure does not refer to the mitigation hierarchy explicitly (see below), but the EIA Procedure does refer to steps within the mitigation hierarchy. It specifically refers to the possibility of requiring biodiversity offsets as a permitting condition.⁸⁵ However it is unclear from the Procedure whether offsets are required for all residual adverse impacts on biodiversity in line with internationally recognised good practice⁸⁶ or are optional. The practice of offsetting is relatively unknown in Myanmar and would require additional Institutional support and possibly a Myanmar Offset Policy to help implement this aspect of the EIA Procedure. Good practice on offsets is addressed in **Section 5**.

Avoidance and mitigation measures should be captured in Environmental Management Plan (EMP) (or specific subplans). The management plan may integrate biodiversity considerations into an overall EMP or include a separate Biodiversity Management Plan (BMP). This should set out the **specific actions** to be taken. It should assign **responsibility**, **resources** and a **time frame** for each action to be taken to ensure that they are clear and can be tracked.

4.8. Monitoring

Once projects are being implemented, ongoing monitoring of biodiversity is required to confirm whether the scale of predicted impacts is as anticipated, review the efficacy of avoidance and mitigation measures, and to enable adjustments to be made as necessary. Monitoring should track whether the actions in the management plan have been taken in a timely and effective manner.

84 UNEP-WCMC (2014). [Biodiversity A-Z](#). UNEP-WCMC, Cambridge, UK (Accessed 27-09-2018)

85 See MOECA (2015). [Environmental Impact Assessment Procedure \(EIA P\)](#), Article 91(e). The Republic of the Union of Myanmar, Ministry of Environmental Conservation and Forestry

86 For good practice in this context see IFC (2012). [Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). World Bank Group

5

INTERNATIONAL STANDARDS, PRACTICE, AND TOOLS

5.1. International Finance Corporation (IFC) Performance Standards

5.2. Alignment with PS6

5.3. Using the Mitigation Hierarchy to Address Biodiversity Impacts

5.4. Biodiversity offsets

5.5. Experience of Offsets in Myanmar

5.6. Additional Sources of Information on Offsets

5.7. Initiatives Beyond Myanmar

Companies and governments should be aware of international standards, good practice, and tools for the management of biodiversity and ecosystem services. These offer guidance on how to prevent, minimise, manage and offset residual impacts on biodiversity. They can be used by companies and their advisers as a reference point where there are gaps or lack of detail in Myanmar law and standards concerning protection of ecosystem services and biodiversity throughout the project cycle. This section provides an overview.

5.1. International Finance Corporation (IFC) Performance Standards

The IFC (the private sector financing arm of the World Bank Group) has a set of eight Environmental and Social Performance Standards (revised 2012)⁸⁷ that define IFC clients' responsibilities for managing the environmental and social risks in private sector projects, accompanied by Environmental Health and Safety Guidelines which provide general and sectoral guidance. They are considered as global good practice in managing a wide range of environmental and social issues in the context of private sector projects in emerging markets, including on biodiversity and ecosystem services, and as such, provide relevant guidance for operating in Myanmar.⁸⁸ They are compulsory for projects in which the IFC invests, and have also been adopted as a financing requirement by the 91 banks and other financial institutions which are signatories to the Equator Principles. Some companies choose to incorporate some of all them in all their activities regardless of funding sources.

Performance Standard 6 (PS6) **Biodiversity Conservation and Sustainable Management of Living Natural Resources** and its accompanying PS6 Guidance Note⁸⁹ provide a framework for ensuring that private sector projects meet three objectives:

87 IFC (2012). [Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). World Bank Group. (Also [translated into Burmese](#))

88 For example, the IFC Performance Standards have been adopted by 91 Equator Principle Financial Institutions (EPFIs), numerous other development banks and OECD export credit agencies.

89 IFC (2012). [Guidance Note 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). World Bank Group

- i. protect and conserve biodiversity
- ii. maintain the benefits of ecosystem services and,
- iii. where relevant, lead to the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

Box 6 provides an overview of PS6.⁹⁰

BOX 6 - MAIN FEATURES OF IFC PERFORMANCE STANDARD 6

- Embodies a risk-based approach to **biodiversity conservation** by classifying habitats into four categories: “Modified,” “Natural” or “Critical” habitat, and Legally protected and internationally recognised areas. Requirements for what can and cannot be done in each area are set according to the type of area (see below). Actions should be taken according to the mitigation hierarchy.
- With respect to **ecosystem services**, PS6 requires a systematic review of “priority ecosystem services” on which the project is most likely to have an impact and, therefore, which can result in adverse impacts on communities and services on which the project is directly dependent on for its operations (e.g., water). Any impacts should be addressed applying the mitigation hierarchy
- With respect to the **sustainable management of natural resources**, projects involving natural and plantation forestry, agriculture, animal husbandry, aquaculture, and fisheries should manage resources in a sustainable manner, through the application of industry-specific good management practices and available technologies

5.2 Alignment with PS6

PS6 embodies a risk-based approach and the requirements depend on whether project impacts will occur in **Modified**, **Natural** or **Critical** habitat. The key steps for aligning a project’s environmental management and biodiversity conservation approach with PS6 are:

- **Critical Habitat Assessment:** needs to be undertaken to assess the biodiversity importance of an area (e.g. threatened and restricted-range species and ecosystems, Protected Areas) in comparison to their global distributions or population sizes;
- **Mitigation Design:** described in a Biodiversity Action Plan, for impacts on Critical Habitat and Natural Habitat;
- **Offset:** only “after appropriate avoidance, minimisation and restoration measures have been applied”;
- **Monitoring and Evaluation Design:** a long-term programme sufficient to assess the status of Critical Habitat and demonstrate biodiversity gain;
- **Stakeholder Engagement should be undertaken throughout.**

⁹⁰ See IFC (2012) PS 6 and the *PS6 Guidance Note* for further explanation and details.

Modified habitats are low risk (with some exceptions) as they have been largely modified and contain a large proportion of species of non-native origin. These sites include agriculture and forest plantations. **Natural habitats** comprise species of largely native origin and original species composition. **Critical habitats** are areas with high biodiversity value, and are:

- of significant importance to Critically Endangered and/or Endangered species;
- of significant importance to endemic and/or restricted-range species;
- supporting globally significant concentrations of migratory species and/or congregatory species;
- highly threatened and/or unique ecosystems;
- areas associated with key evolutionary processes.⁹¹

PS6 requires that:

- projects will not convert Natural Habitat unless there are no viable alternatives for development on Modified Habitat;
- the mitigation hierarchy has been applied to achieve no net loss where possible, and
- there has been stakeholder consultation.

In addition, PS6 requires that projects should not affect Critical Habitat, unless there are no other viable alternatives in Modified or Natural Habitats and the project does not lead to measurable adverse impacts on those biodiversity values or a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time. Mitigation must be designed to achieve net gains.

PS 6 also requires a systematic review of priority ecosystem services. These are services on which the project is most likely to have an impact on and services on which the project is directly dependent on for its operations (e.g., water).

PS6 also states that clients who are engaged natural and plantation forestry, agriculture, animal husbandry, aquaculture, and fisheries, will be expected to manage resources in a sustainable manner, through the application of industry-specific good management practices and available technologies. Where primary production practices are codified in globally, regionally, or nationally recognized standards there should be used.

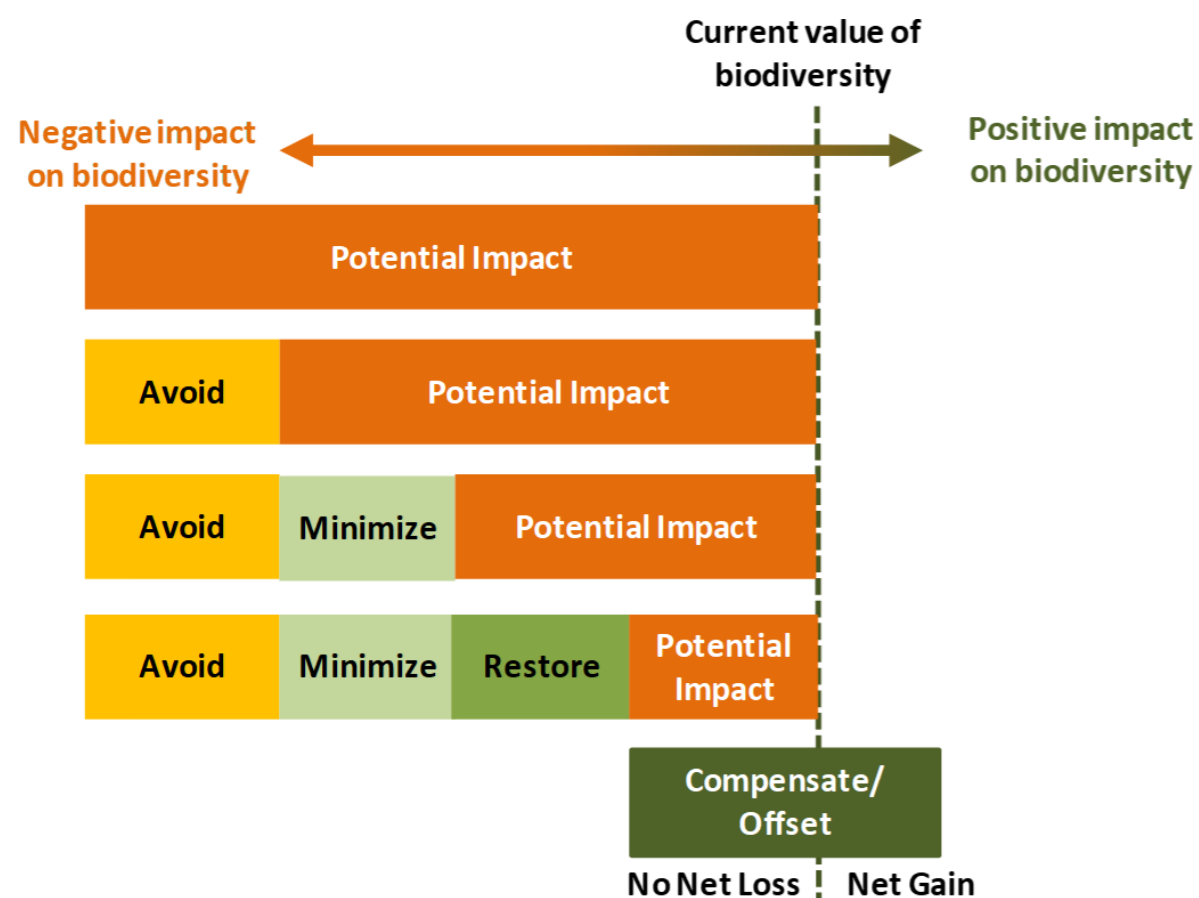
5.3. Using the Mitigation Hierarchy to Address Biodiversity Impacts

Applying the mitigation hierarchy to addressing biodiversity and ecosystem impacts is considered good international practice and is implicit in the EIA Procedure.⁹² It is a simple framework (Avoid-Minimise-Restore-Compensate/Offset) that can be used within the context of an EIA and EMP or Biodiversity Management Plan to limit the negative impacts of projects on biodiversity and ecosystem services, and ideally achieve ‘No Net Loss’ (see **Figure 3**).

⁹¹ See Footnote 68.

⁹² CSBI (2015). [Mitigation Hierarchy Guide](#). Cross Sector Biodiversity Initiative

Figure 3: The Mitigation Hierarchy and the Goal of Biodiversity Offsets: No Net Loss



Adapted from the BPOP - Biodiversity Offsets Handbook

Avoidance is the most effective step because it eliminates impacts on biodiversity and ecosystem services altogether. **Avoidance** can be achieved through for example:

- **Site selection** involving the relocation of the project site or components away from an area recognised for its high biodiversity and ecosystem services values. This type of avoidance involves screening for biodiversity and ecosystem services values very early in the planning process, followed by an analysis of alternative project locations. Avoidance can be through large-scale avoidance of an area or can be through micro siting of infrastructure within the site by changing the layout at the project site.
- **Selection of construction or operational processes** (e.g. surface mining machines instead of blasting, choice of pipelines vs. railways or roads).

Minimisation of impacts can be achieved by implementing:

- **Physical controls** such as installing underground passes on roads, or effluent control to maintain in stream ecology.
- **Changes in operating practices** that might involve reducing the use of water in certain

circumstances or placing restrictions on staff to reduce illegal hunting.,

- **Relocation** of some species may be necessary in a very limited number of circumstances.

Restoration refers to measures taken to repair or restore damage to specific biodiversity features and ecosystem services of concern following project impacts that cannot be completely avoided and/or minimised. Restoration is generally more challenging and uncertain than avoidance and minimisation. It can also be expensive. Some habitats are particularly difficult to restore. Restoration interventions are often labour-intensive but can be a means of local job creation. Restoration can be an opportunity to connect habitats within the landscape or seascape.

Offsets are “measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development and persisting after appropriate avoidance, minimization, and restoration measures have been taken”.⁹³ See next section for more detail.

5.4. Biodiversity offsets

According to international good practice,⁹⁴ the goal of many biodiversity offsets is to achieve “No Net Loss” and preferably a “Net Gain” of biodiversity on the ground (or in the water), in comparison to the baseline situation before the original project is implemented. No Net Loss or Net Gain is typically assessed in terms of the area conserved and its species composition. Offsets are a more structured and consistent approach to mitigating biodiversity loss than certain other approaches such as simply providing financial compensation.

Biodiversity offsets can include securing or setting aside land or water areas for conservation, enhanced management of habitats or species, and other defined activities. They can be used to create, expand or buffer existing Protected Areas; enhance, link or restore habitats and protect or manage species of conservation interest either within a designated conservation area or more broadly across the landscape.

Offsets can be complex, time-consuming and costly. Furthermore, not all biodiversity values can be offset effectively, so it is important that offsets are used as a last resort. Nevertheless, offsets can provide much needed additional finances for an underfunded protected area system.

Appropriate financial management and good governance are important when setting up offsets. Some countries and companies have set up trust funds. Conservation trust funds (CTFs) enable development project sponsors to set money aside up-front to support the recurrent costs of maintaining the biodiversity offset. If enough money is set aside, the CTF can serve as an endowment fund that generates a sustainable (perhaps variable) annual income stream to be used for conservation expenditures.

Stakeholder engagement is the key to successful biodiversity offsets. There are many stakeholders with an interest in biodiversity in Myanmar including international and local NGOs, communities, government, multilateral institutions as well as academic or research institutions. Engagement of potentially affected communities and other stakeholders in biodiversity conservation is fundamental

⁹³ IFC (2012). [Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). World Bank Group

⁹⁴ See George C. Ledec et al (2016). [Biodiversity Offsets A Users Guide](#). World Bank Group

BOX 7 - PRINCIPLES FOR BIODIVERSITY OFFSETS⁹⁵

- **Additional conservation outcomes:** Offsets must deliver conservation gains beyond those that would be achieved by activities already being implemented by others. For examples funding a protected area that is already well financed and managed would not result in additional gains.
- **Equivalence:** In general, biodiversity gains at an offset site should support similar species, habitats, ecosystems or ecological functions as those impacted.
- **Stakeholder participation and transparency:** The effective participation of stakeholders is important as is communication of its results to the public.
- **Equity:** A biodiversity offset should be designed and implemented in an equitable manner. Special consideration should be given to respecting the rights of indigenous peoples and local communities.
- **Permanence:** Offsets should be permanent or endure for as long as the impacts last, which for many projects, is permanent.

to the success of biodiversity initiatives. Some of the best ways of implementing offsets are to develop partnerships with NGOs in collaboration with government. See **Table 5** for a list of issues to consider when planning offsets.



⁹⁵ See George C. Ledec et al (2016). [Biodiversity Offsets A Users Guide](#). World Bank Group

TABLE 5: CHECKLIST OF ISSUES TO CONSIDER FOR PLANNED OFFSETS

Technical and ecological aspects	<ul style="list-style-type: none"> • Have the biodiversity and ecosystem values to be offset been listed and described? • Has the full mitigation hierarchy (first avoid, then minimize, then restore, and only then offset) been duly considered, with adequate documentation? • Have potential offset sites and activities been screened against selected criteria (ecological, social, implementation feasibility)? • Are there potential offset sites nearby which meet the desired criteria, or do you need to look into the wider landscape? If the ecological characteristics are not similar, can you trade up? • How do the proposed offset sites fit in with national and regional conservation priorities? • How do the proposed offset sites provide additionality? • What conservation interventions will be required for the offset to achieve No Net Loss or otherwise succeed? • For proposed restoration offsets, is there demonstrated success for these types of habitats? • Which outcome indicators will be monitored?
Land tenure, social and political aspects	<ul style="list-style-type: none"> • Who legally owns, who claims ownership or use rights, and who effectively controls all the parcels of land comprising the proposed biodiversity offset area, as well as the corresponding water rights? • Do local residents (individuals or communities) own, occupy, or otherwise use the proposed offset sites? • Are local residents adequately engaged in the biodiversity offset planning process? • What changes in land or natural resource use (if any) will be needed for the biodiversity offset to succeed? How will those changes be implemented? • If access to natural resources will be restricted more than at present, are the livelihood restoration measures (including alternative livelihoods) proposed for or by local residents realistic? • Is there sufficient political support for the planned offset activities? If legislative (congressional or parliamentary) approval is required (such as to create a new protected area), can this realistically be achieved when needed? • Are there other social or political risks (such as security and conflict issues) that could prevent effective implementation?

Long term protection/legal aspects	<ul style="list-style-type: none"> Are there any legal requirements in place that dictate a particular methodology be followed for designing or implementing the offset? How long is the proposed offset site expected to be legally protected or otherwise secure? Will the offset be part of a protected area system or managed independently? In the case of private (individual or community) ownership of the offset area, what types of conservation instruments will be used to ensure or promote long-term conservation (such as conservation easements, legal covenants, community management agreements, environmental service payments, etc.)?
Financial aspects	<ul style="list-style-type: none"> Have the up-front investment costs been adequately budgeted, with an agreed funding source? (These costs may include land acquisition, physical demarcation, protected area infrastructure and other small civil works, vehicles, office and field equipment, staff training, consultancies including Management Plan preparation, etc.) Will there be adequate funding of recurrent protection, management, and monitoring costs (including salaries, fuel, supplies, and spare parts) over the long term? Through what mechanisms?
Human Resources	<ul style="list-style-type: none"> What human resources are needed to plan and implement the biodiversity offset, including long-term management and monitoring? How much and what kinds of training will be required?
Partnerships	<ul style="list-style-type: none"> Which organisations have been, or should be, engaged as partners to support offset planning or implementation? Are people from local communities (adults or students) willing and able to participate in the protection, management, or monitoring of the offset area and its biodiversity?
Stakeholder engagement	<ul style="list-style-type: none"> Have the interested and potentially affected stakeholders been adequately identified? Have timely communications and an open and regular dialogue been maintained with local communities or other key stakeholders? Have interested stakeholders been provided opportunities to engage throughout the biodiversity offsetting process, including site selection, offset design, no-net-loss calculations, implementation, and monitoring? Has a stakeholder complaint and feedback mechanism been defined (where warranted)? Do a significant number of local residents or other stakeholders object to key aspects of the proposed offset plans? If so, how will these objections be effectively addressed?

5.5. Experience of Offsets in Myanmar

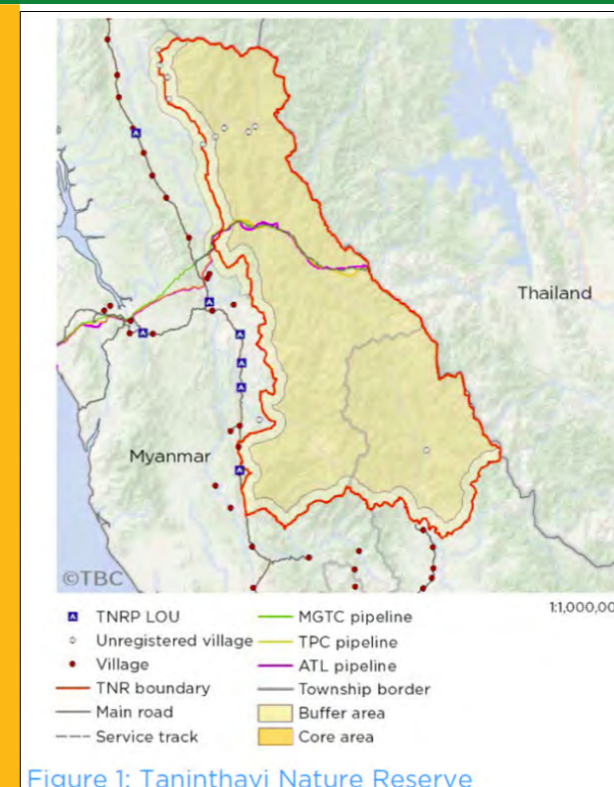
To date, there have been no examples of projects using international good practice to establishing biodiversity offsets in Myanmar, although Shwetaung Group/Apache Cement are working on this on their Pyinaung Cement project with the assistance of the IFC and FFI.

In 2005, Total, subsequently joined by Petronas and PTTEP, established a unique partnership with the Forestry Department and the Wildlife Conservation Society whereby the companies provided financial support for the Tanintharyi Nature Reserve (see **Box 10**). This is more akin to compensation than an offset as described above.

BOX 8 - CASE STUDY OF THE TANINTHARYI NATURE RESERVE PROJECT

The Tanintharyi Nature Reserve Project (TNRP) is an innovative public-private sector partnership that set out to establish and manage the Tanintharyi Nature Reserve. The Reserve (which is now a proposed national park) comprises moist evergreen forest and supports highly threatened species including the Asian elephant, and tiger. It is subject to a number of threats including subsistence and commercial agriculture, hunting, logging, roads and forest fires.

Three gas pipeline companies Total, Petronas and PTTEP constructed three separate gas pipelines (see Figure 1) through the reserve linking offshore gas fields to processing facilities in Thailand. As compensation for the impacts, the companies are paying financial compensation to the Forestry Department (supported by WCS) to implement conservation activities as they see fit. The project started in 2005 and is proposed to continue for the lifetime of the pipelines (at least 2028). Work plans and budgets are completed every four years. The budget was \$1.2 million for each of the first two phases (2005-2012) and \$1.8 million for the third phase (2013-2016).



The Management Effectiveness Management Tool (METT)⁹⁶ analysis results stated that there was an overall score of 75% indicating that the project is satisfactory. However, security concerns limited access to large proportions of the reserve and some of the villagers from Kamoethway stated that they did not know the reserve existed until 2010,⁹⁷ five years after the project started. More information on this project is provided in the Review of the Tanintharyi Nature Reserve Project as a conservation model in Myanmar.⁹⁸

96 Stolton, S. and N. Dudley (2016). [METT Handbook: A guide to using the Management Effectiveness Tracking Tool](#). WWF-UK, Woking

97 Pollard, E. H. et al (2014) [Review of the Tanintharyi Nature Reserve Project as a conservation model in Myanmar](#). Unpublished report of The Biodiversity Consultancy, Cambridge

98 Ibid.

The model was not developed as a biodiversity offset. Nevertheless, it does meet some of the best practice principles and practices associated with offsets, such as the provision of additional conservation outcomes, and equivalence. It could form the basis of a model which can be applied to other projects that have residual impacts, as offsets have considerable potential to support the underfunded protected area network in Myanmar with the following improvements:

- Biodiversity losses from development impacts should be qualitatively and quantitatively assessed (where possible) to ensure that gains derived from conservation activities compensate for the loss and are equivalent where possible
- Monitoring of actions on the ground is needed to determine the success of the offset
- Improved stakeholder participation and increased transparency
- Finances managed in a transparent manner, possibly through a fund that is managed by trustees.

5.6. Additional Sources of Information on Offsets

- Biodiversity Offset Implementation Handbook. Business and Biodiversity Offsets Programme (BBOP), Washington, D.C. 2009
- Technical conditions for positive outcomes from biodiversity offsets. An input paper for the IUCN Technical Study Group on Biodiversity Offsets. Gland, Switzerland: IUCN. Pilgrim, J. D. and Ekstrom, J. M. M. (2014). 46 pp.
- Marine and coastal biodiversity offsets. The Biodiversity Consultancy, Industry Briefing Note, July 2013.
- Policy Development for Environmental Licensing and Biodiversity Offsets in Latin America (2014) Villaroya, A., Barros, A.C., Kiesecker, J. (for lessons learned from other regions)

5.7. Initiatives Beyond Myanmar

There are a number of other initiatives and standards that are being or have been developed that include requirements for “No Go” areas that are high value for biodiversity. This is likely to become the norm in future standards. For example, since 2003 ICMM’s 25 corporate members have been required to avoid mining in World Heritage properties. Similarly, the Initiative for Responsible Mining Assurance (IRMA) is designing a Responsible Mining Assurance System with six integrated elements, one of which covers Biodiversity aspects. The IRMA Standard 1.0 (2018) relating to Protected Areas (4-6-5-3) states that Highly Protected Areas (HPAs) are ‘no go zones’. In all but a few exceptional cases, neither new mines nor existing mines will be eligible for IRMA certification if mining-related activities are taking place in Highly Protected Areas, which includes World Heritage Sites and IUCN category I-III.⁹⁹

The Natural Capital Coalition is a unique global multi-stakeholder collaboration that brings together leading initiatives and organisations to harmonize approaches to natural capital. Natural capital is another term for the renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people. The Natural Capital Coalition has developed a Protocol¹⁰⁰ that aims to help businesses incorporate natural capital into their decision making.

High Conservation Value (HCV) areas have biological, ecological, social or cultural values which are outstandingly significant or critically important at the national, regional or global level. The

identification of HCVs is done through an ‘HCV assessment’¹⁰¹ which includes stakeholder consultations, analysis of existing information and the collection of additional information where necessary. Identifying, managing and monitoring HCV has been a key step towards achieving certification from major forestry and agricultural commodity standard schemes. HCV requirements are also included in the policies of some major financial institutions and banks, and in the procurement policies and sustainability commitments of global private sector organisations.



⁹⁹ For details see Initiative For Responsible Business Mining Assurance. [IRMA Standard](#). Washington DC.

¹⁰⁰ See Natural Capital Coalition. Natural Capital Protocol. London, UK. (Accessed 27-09-2018)

¹⁰¹ See HCV. The HCV Resource Network brings HCV users together. HCV Resource Network. Oxford, UK.



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