



# PROJECT DOCUMENT

Malaysia

United Nations Development Programme

Global Environment Facility

Improving Connectivity in the Central Forest Spine (CFS)

Landscape - IC-CFS

GEFSEC PROJECT ID: 4732; GEF AGENCY ID: PIMS 4594; AWARD ID: 00077143

## Brief Description:

The Central Forest Spine (CFS) of Peninsular Malaysia is recognised for its population of the endangered Malayan tiger as well as being extraordinary rich in biodiversity in general; it also provides the country with considerable ecosystem goods and services and contains the water supply for most of the population on the peninsular.

This project will conserve biodiversity and ecosystem services in three critical landscapes of the Central Forest Spine, by supporting the country's CFS Master Plan to restore connectivity between forest complexes. It will strengthen the national and local institutional frameworks for CFS management and law-enforcement and support sustainable forest landscape management. It will achieve sustainability of funding for conservation through the diversification of funding sources and the mainstreaming of ecosystem service values into land-use planning. The project is consistent with several GEF 5 Strategic Objectives: BD-2, Outcome 2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation; LD-3, Outcome 3.1: Enhanced cross-sector enabling environment for integrated landscape management; LD-3, Outcome 3.3: Increased investments in integrated landscape management; and SFM REDD+ -1, Outcome 1.2: Good management practices applied in existing forests.

The project will be responsible for achieving the following objective: *to increase federal and state level capacity to execute the CFS Master Plan through the implementation of sustainable forest landscape management plans in three pilot sites, financed sustainably through the diversification and increased allocation of funds for conservation.* It is designed to lift the barriers to establishment of a landscape approach to the management of biodiversity. The project will comprise three complementary components, which will be cost shared by the GEF and co-financing. Each addresses a different barrier and has discrete outcomes, as follows:

**Component 1.** Planning, compliance monitoring and enforcement framework for integrated forest landscape management; **Component 2.** Sustainable forest landscape management of three priority forest landscapes within the CFS; and, **Component 3.** Diversification of financing sources for conservation.

The project supports the objectives of 10<sup>th</sup> Malaysia Plan, National Physical Plan 2005, Central Forest Spine Master Plan 2008 and National Tiger Action Plan 2008. It also benefits from 3 on going/completed UNDP projects in Malaysia, namely PA, NBSAP, REDD+, and PES

# 1. SIGNATURE PAGE

**Country: Malaysia**

**Project Title:** Improving Connectivity in the Central Forest Spine (CFS) Landscape - IC-CFS

**Objective:** Sustainable land and forest management in the Central Forest Spine (CFS) Landscape secures the critical wildlife habitats, conserves biodiversity and maintains continuous flow of multiple ecosystem services.

**Expected Components:** (1) Planning, compliance monitoring and enforcement framework for integrated forest landscape management; (2) Sustainable forest landscape management of three priority forest landscapes within the CFS; and (3) Diversification of financing sources for CFS biodiversity and ecosystem conservation.

**Executing Entity/Implementing Partner:** Ministry of Natural Resources and Environment

**Implementing Entity/Responsible Partner:** United Nations Development Programme

<b>Award ID:</b>	00077143	<b>Project ID:</b>	00088128
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Programme Period:	2014-2020	<b>Total Budget</b>	<b>USD \$47,360,000</b>
Award ID:	00077143	GEF	USD \$10,860,000
Project ID:	00088128	Government (cash)	USD \$31,100,000
PIMS #:	4594	Government (In-kind)	USD \$ 3,900,000
Project Duration	6 Years	UNDP (cash)	USD \$ 1,500,000
Management Arrangement:	NIM		

*Agreed by (Economic Planning Unit, Prime Minister's Office):*



**DATUK DR RAHAMAT BIVI BT. YUSOFF**  
 Director General  
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 Prime Minister's Department

NAME 18/3/2014  
 Date/Month/Year

SIGNATURE

*Agreed by (UNDP):*



**Michelle Gyles-McDonnough**  
 Resident Representative

NAME 18/03/2014  
 Date/Month/Year

SIGNATURE

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## Acronyms

AFOLU	Agriculture, Forestry and Land Use
AMMO	Avoid, Minimise, Mitigate, Offset
APR	Annual Project Report
ARR	Afforestation, Reforestation and Revegetation
ASEAN	Association of South East Asian Nations
ASEAN-WEN	Association of South East Asian Nations' Wildlife Law Enforcement Network
a.s.l.	Above sea level
AWP	Annual Workplan
BD	Biodiversity
Bhd.	Berhad
CAT	Citizen Action for Tigers
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CBO	Community Based Organisation
CDM	Clean Development Mechanism
CESR	Corporate Environmental and Social Responsibility
CFS	Central Forest Spine
CFSMP	Central Forest Spine Master Plan
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPD	Country Programme Document
CRV	Climate Regulation Value
CTA	Chief Technical Advisor
DANIDA	Danish International Development Agency
DOE	Department of Environment
DTCP	Department of Town and Country Planning
DWNP	Department of Wildlife and National Parks, Peninsular Malaysia
EIA	Environmental Impact Assessment
EPU	Economic Planning Unit
ESA	Environmentally Sensitive Area
FAO	Food and Agriculture Organisation
FDPM	Forestry Department Peninsular Malaysia
FMU	Forest Management Unit
FRIM	Forest Research Institute Malaysia
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographical Information System
GNI	Gross National Income
HCVF	High Conservation Value Forest
HDI	Human Development Index

HSBC	Hong Kong and Shanghai Banking Corporation
HTC	Human-Tiger Conflict
HWC	Human-Wildlife Conflict
IBA	Important Bird Area
IBD	Institute of Biodiversity
IC-CFS	Improving Connectivity in the Central Forest Spine
INTERPOL	International Criminal Police Organisation
InVEST	Integrated Valuation of Ecosystem Services and Trade-offs
IPCC	Intergovernmental Panel on Climate Change
IS	Inception Session
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organisation
IUCN	The World Conservation Union
JAKOA	Jabatan Kemajuan Orang Asli
JNPC	Johor National Parks Corporation
LD	Land Degradation
LLC	Limited Liability Company
LP	Limited Partnership
LULUCF	Land Use, Land-Use Change and Forestry
M&E	Monitoring and Evaluation
MEME	Management and Ecology of Malaysian Elephants Project
MIST	Management Information System
MNS	Malaysian Nature Society
MPOWCF	Malaysian Palm Oil Wildlife Conservation Fund
MRV	Monitoring, Reporting and Verification
MTC	Malaysian Timber Council
MTCC	Malaysian Timber Certification Council
MTCS	Malaysian Timber Certification Scheme
MYCAT	Malaysian Conservation Alliance for Tigers
MY-WEN	Malaysian Wildlife Law Enforcement Network
NATFIL	National Taskforce in Combating Illegal Logging
NBSAP	National Biodiversity Strategy and Action Plan
NBC	National Biodiversity Council
NECAP	National Elephant Conservation Action Plan
NGO	Non-Governmental Organisation
NIM	National Implementation Modality
NLC	National Land Council
NPP	National Physical Plan
NPPC	National Physical Planning Council
NRE	Ministry of Natural Resources and Environment
NTCAP	National Tiger Conservation Action Plan
NTFP	Non-Timber Forest Product
PA	Protected Area
PCO	Project Central Office

PSCM	Project Steering Committee Meeting
PEFC	Programme for the Endorsement of Forest Certification
PES	Payment for Ecosystem Services
PIR	Project Inception Report
PPG	Project Preparation Grant
PSC	Project Steering Committee
PSFD	State Forestry Department of Perak
PSPC	Perak State Park Corporation
PL	Primary Linkage
PRF	Permanent Reserved Forest
LMPC	Landscape Management Planning Committee
RCU	Regional Coordinating Unit
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	Reducing emissions from deforestation and forest degradation in developing countries, and forest conservation, sustainable forest management and enhancement of forest carbon stocks
RELA	Ikatan Relawan Rakyat Malaysia
RISDA	Rubber Industry Smallholders Development Authority
MYR	Malaysian Ringgit
SFM	Sustainable Forest Management
SGP	Small Grants Programme
SL	Secondary Linkage
SMART	Spatial Monitoring and Reporting
TLC	Timber-Latex Clone
TPR	Tripartite Review
TRAFFIC	The Wildlife Trade Monitoring Network
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VCS	Verified Carbon Standard
WCO	World Customs Organisation
WCS	Wildlife Conservation Society
WCU	Wildlife Crime Unit
WHS	World Heritage Site
WWF	World Wide Fund for Nature



## SECTION IA: SITUATIONAL ANALYSIS

### PART 1.1: Biophysical Context

#### CONTEXTUAL INTRODUCTION

1. Malaysia has been designated as a mega-diverse country<sup>1</sup>. The Central Forest Spine (CFS) of Peninsular Malaysia, composed of four main forest complexes, is an important natural landscape of Malaysia, supplying 90% of the population's water supply and harbouring the remaining population of Malayan tigers in its forests. As knowledge of the values of its biodiversity and ecosystem services increases in Malaysia, there is greater incorporation of these aspects in national policies and plans. Due to Malaysia's comprehensive national economic and development plans, its economy is fast growing; however, capacity and resources for effective implementation of plans related to biodiversity and ecosystem conservation are currently not sufficient for ensuring that this does not suffer in the process of Malaysia's development. Development activities such as the establishment of planted forests have significantly reduced the extent of primary forest within the landscape and are putting ecosystem services at risk; biodiversity monitoring systems are not sufficient in measuring the impacts of these activities on the natural environment; wildlife and forestry law-enforcement mechanisms are failing to adequately protect species such as the tiger from poaching and illegal trade as well as control the illegal harvesting of forest resources such as agarwood.
2. The Federal Government of Malaysia has two plans in place for helping to protect biodiversity and ecosystem services. The CFS Master Plan (CFSMP), formulated following the first National Physical Plan (NPP) in 2005 aims to increase the integrity of the CFS through conserving and rehabilitating critical linkages in between each complex. The National Tiger Conservation Action Plan (NTCAP) aims specifically to conserve the national emblem of Malaysia, the Malayan tiger. This Global Environment Facility (GEF)-funded project, Improving Connectivity in the Central Forest Spine (IC-CFS), aims to conserve biodiversity and ecosystem services in three key forest landscapes identified to be both critical tiger conservation areas in the NTCAP as well as priority linkage areas in the CFSMP. For the purposes of this project, biodiversity will be defined using the GEF definition: *'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems'*.<sup>2</sup>
3. The IC-CFS project will a) strengthen the institutional capacity of the federal and state governments and other relevant agencies to implement the CFSMP and the NTCAP in these landscapes so that connectivity between forest complexes can be enhanced and law enforcement against wildlife and forestry crime can be intensified; b) build upon current land management plans in the three landscapes to ensure that biodiversity and ecosystem service values are accounted for and that all planned land uses are sustainable; and c) set up sustainable financing mechanisms for the conservation of the CFS, for example by implementing Payment for

<sup>1</sup> Mittermeier, R., 1988. Primate diversity and the tropical forest: case studies from Brazil and Madagascar and the importance of the megadiversity countries. In: E.O. Wilson ed. 1988. *Biodiversity*. Washington, D.C.: National Academy Press, pp.145-154.

<sup>2</sup> The Global Environment Facility (date unknown). *Biodiversity*. [online] Available at: <http://www.thegef.org/gef/biodiversity> [accessed 10 July 2013]

Ecosystem Services (PES) schemes, in order to mainstream biodiversity into development plans. The successful completion of the IC-CFS project in these landscapes will enhance and strengthen current efforts to implement the CFSMP and NTCAP and will provide an example for best practice for sustainable landscape management elsewhere in Malaysia and beyond.

4. The project will realise synergetic impacts from Biodiversity (BD), Land Degradation (LD) and Sustainable Forest Management (SFM) investments through capacity building for biodiversity and ecosystem monitoring and law enforcement; sustainable landscape management; and the diversification and increased sustainability of financing sources for conservation management.

### **GEOGRAPHICAL CONTEXT**

5. Malaysia belongs to the Sundaland bio-geographical region, which comprises the Malay Peninsula and the Malay Archipelagic islands of Sumatra, Java, Borneo, and surrounding smaller islands. It lies between 1° - 7°N and 99° - 119°E and has a total area of approximately 33,043,300 hectares (ha), consisting of Peninsular Malaysia (on the southernmost tip of mainland Asia) and the states of Sabah and Sarawak on the northern coast of the Island of Borneo. Peninsular Malaysia has an area of 13,180,000ha<sup>3</sup>(40% of the total) and borders Thailand in the north and Singapore in the south; Malaysian Borneo has an area of 19,825,980ha and borders Indonesian Kalimantan and Brunei (see Figure 1). Peninsular Malaysia has water boundaries including the Strait of Malacca and the South China Sea; Malaysian Borneo is also bordered by the South China Sea as well as the Sulu and Celebes Seas.



*Figure 1. Malaysia: the Physical Context*

6. There are several mountain ranges in Malaysia. In Sabah, the Crocker Range separates the east and west coasts. With an average height of 1,800m, its highest peak, and the highest mountain in South-East Asia, is Mount Kinabalu at 4,095 m above sea level. It forms the country's first World Heritage Site (WHS) and is a National Park. Forming the backbone of Peninsular Malaysia and southern Thailand are the Titiwangsa Mountains, or Main Range. At 480 km they divide the landscape into two Eastern and Western strips, with their southern-most foothills reaching Johor. The highest point of Peninsular Malaysia is Mount Tahan at 2,187 m.
7. Malaysia has an extensive forest resource, including a range of dry inland forest dominated by

<sup>3</sup> Forestry Department Peninsular Malaysia, 2012. *Forestry Statistics for the Year 2012* [online] Available at: [http://www.forestry.gov.my/index.php?option=com\\_content&view=article&id=776&Itemid=1073&lang=en](http://www.forestry.gov.my/index.php?option=com_content&view=article&id=776&Itemid=1073&lang=en) [Accessed 01May 2013]

dipterocarp trees as well as peat swamp and mangroves along the coasts. As of 2012, statistics from the Forest Research Institute Malaysia official statistics give the total forest area as 18.25 million hectares or 55.2% of Malaysia's total land area.

## ***CLIMATE AND WATER***

8. Malaysia has a tropical wet equatorial climate that is characterised by the southwest monsoons from April to October, and the northeast monsoons, from October to February. Peninsular Malaysia's climate is influenced by winds from the mainland, whereas the climate in Sabah and Sarawak is influenced by the surrounding oceans.
9. Air temperatures of Malaysia average at 27°C throughout the year, with fluctuations within approximately 1.6°C, although temperatures are rising at about 0.4°C per decade. The whole country falls within the equatorial climatic zone but the north-western tip of Peninsular Malaysia has a short but definite and regular dry season at the beginning of the year. Average annual rainfall in Malaysia ranges from 1,650 mm to 5,080 mm but rainfall is often extremely local and very heavy rainfall may take place over very small areas. Average annual humidity is roughly 95%<sup>4</sup>.
10. Pressure on water resources in Malaysia is intensifying due to rapid increases in population and per capita use of water as well as rapid growth of industries; this is compounded by the degradation of watersheds due to deforestation and pollution, with an estimated 50% of Malaysia's rivers already polluted. Malaysia's National Water Vision is to conserve and manage its water resources so that adequate and safe water remains available for both people and environmental needs. In order to combat the increasing pressure on water, the recently developed Water Resources Policy includes strategies for identifying and increasing national water resources as well as finding alternative sources such as underground water.

### **Climate change in Malaysia**

11. The Intergovernmental Panel on Climate Change (IPCC) has established that the globe is experiencing a significant shift in climate, with human activity being the main causal factor. As the global climate as a whole increases in temperature, ecosystems are predicted to shift through increasing latitudes and altitudes. With increased variability and a general decrease in precipitation, desert ecosystems are expected to expand, forest ecosystems retract and the sustainability of wetland ecosystems threatened. The impacts on humans include increased water stress; crop failure due to pests and diseases as well as unfavourable growing environments and soil degradation; an increase in human disease; and increases in environmental shock events such as landslides and floods, all of which disrupt livelihood security<sup>5</sup>.
12. Climate-induced disease and heat stress has already increased in South-East Asia, with rising temperatures and increased rainfall variability. Observations have been made of an increased intensity and frequency of events associated with El-Niño. Heat waves have become longer in duration and rainfall events have become more extreme, whilst overall amount and duration of rainfall has declined. This increases the likelihood of landslides and flooding. An increase in

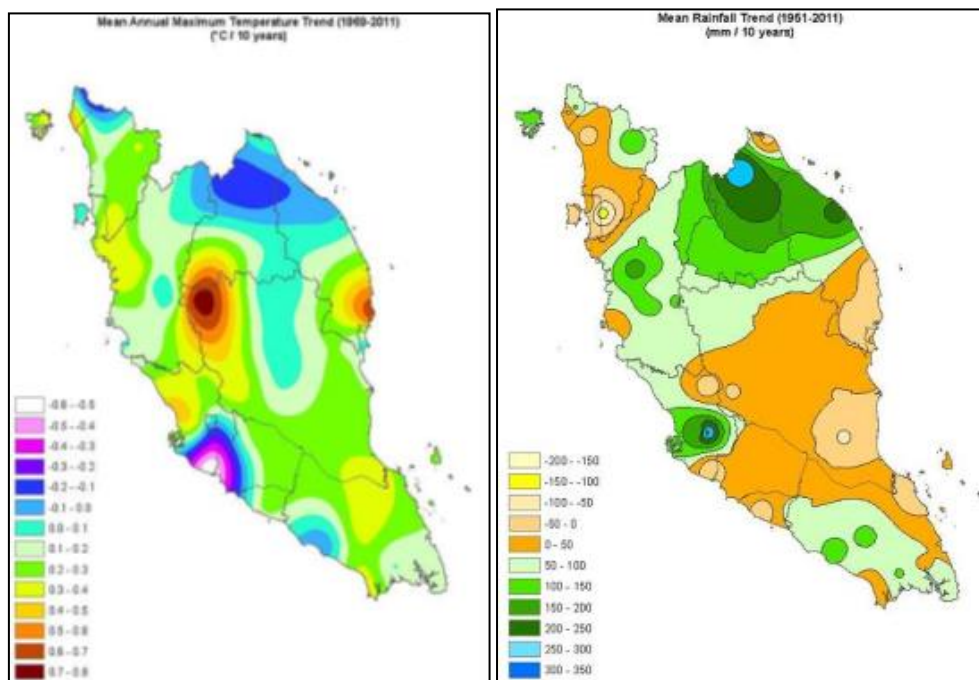
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<sup>4</sup> Ling, G.N. S., 2000. The certification process in Malaysia: a case study. The World Wide Fund for Nature, 23pp

<sup>5</sup>IPCC. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Tignor, K.B.M. and Miller, H.L., Eds., Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp

forest fires has been observed, and in the past 10 years roughly three million ha of peatland in South-East Asia has been burnt, increasing the emission of carbon into the atmosphere<sup>6</sup>.

13. By 2040, temperatures in South-East Asia are expected to increase by between 0.72°C and 0.92°C while precipitation could either decrease by 2% or increase by up to 1%. However, these changes will vary spatially. As sea levels rise, those living in coastal regions will be at risk from flooding; brackish water fisheries may increase but freshwater ecosystems will become degraded. Altogether, fisheries are expected to show a decline due to the increased frequency of El-Niño events<sup>7</sup>.
14. Malaysia's economy depends strongly on its natural resources and pressure on these resources is expected to increase further due to the combination of climate change and rapid economic and infrastructural development, making the sustainable use of resources challenging. Over the last 50 years there have been pronounced changes in maximum temperatures and rainfall patterns in Malaysia (Figure 2), which have potentially severe impacts on the ecology and economy of the nation. Furthermore, floods, droughts and diarrhoeal diseases associated with climate change are likely to increase mortality rates<sup>8</sup>. Rising sea level, beach erosion and saline contamination of coastal wells is expected to adversely affect island tourism in Malaysia<sup>9</sup> and lead to water shortages and increased risk of vector-borne diseases. Therefore, adaptations to climate change need to be included in government policies and plans for development in order to improve the management of these environmental hazards.



**Figure 2. Trends of Maximum Temp and Mean Annual Rainfall Changes in Peninsular Malaysia**

<sup>6</sup>IPCC, 2007: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 976pp.

<sup>7</sup> Ibid.

<sup>8</sup>IPCC, 2007: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 976pp.

<sup>9</sup>Ibid.

## ***BIODIVERSITY OF MALAYSIA***

15. Malaysia forms part of the Sundaland biodiversity hotspot<sup>10</sup>, a high biodiversity region with a wide array of coastal, marine and terrestrial ecosystems. The Sundaland hotspot is thought to have 25,000 plant species, 15,000 of which are endemic, and 2,795 vertebrate species, of which 1103 are endemic. Of the vertebrate species, it is thought that there are at least 769 bird species, (142 endemic), 380 mammals (172 endemic), 567 reptiles (243 endemic), 244 amphibians (196 endemic), and 950 freshwater fish species (350 endemic). This level of endemism makes Sundaland the second most important hotspot in the world<sup>11</sup>.
16. Malaysia itself is one of just 17 countries with ‘megadiverse’ status for its high species diversity. The flora of Malaysia is exceedingly rich and is conservatively estimated to contain about 15,000 species of flowering plants<sup>12</sup> and more than 1,100 species of ferns and fern allies. Many of these are found nowhere else in the world. In Peninsular Malaysia, for example, 30% of species are endemic, including over 26% of tree species<sup>13</sup>. The lowland dipterocarp forests are particularly rich in species diversity. Many endemic plants are localised in their distribution, being found only in a few valleys or mountaintops.
17. Diversity is also high among the fauna. There are about 306 species of wild mammals; more than 742 species of birds; 567 species of reptiles; 242 species of amphibians; more than 449 species of freshwater fish; and it is estimated that there are 150,000 invertebrate species<sup>14</sup>.
18. Malaysia is one of just 14 tiger range countries, harbouring the Malayan Tiger (*Panthera tigris*) subspecies. In 1990, the Department of Wildlife and National Parks Peninsular Malaysia (DWNP) used survey data<sup>15</sup> from the late 1980s to estimate the population of tigers in Peninsular Malaysia to be approximately 500 mature individuals (a sharp decline from the estimated 3,000 in the 1950s); DWNP later validated the estimate by analysing data collected up to 2003<sup>16</sup>. This figure is expected to have decreased in the last 10 years due to rising demand for tiger parts and decimating tiger populations in other range countries, but no update has been made.
19. According to the latest World Conservation Union (IUCN) Red List of Threatened Species<sup>17</sup>, 686 plants and 225 animals in Malaysia are at risk of extinction and 256 are at least Critically Endangered, placing Malaysia third in the list of countries with the largest number of threatened species, behind only Ecuador and the United States.

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<sup>10</sup>Myers M., Mittermeier, R., Mittermeier, C., da Fonseca, G. and Kent, J., 2000. Biodiversity hotspots for conservation priorities. *Nature*, 403, pp.853-858.

<sup>11</sup>Conservation International, 2000. *Sundaland*. [online] Available at: <[http://www.conservation.org/where/priority\\_areas/hotspots/asia-pacific/Sundaland/Pages/biodiversity.aspx](http://www.conservation.org/where/priority_areas/hotspots/asia-pacific/Sundaland/Pages/biodiversity.aspx) [Accessed 10 May 2013].

<sup>12</sup> Saw L. and Chung, R. 2007. Towards the Flora of Malaysia. In L.S.L. Chua, L.G. Kirton & L.G. Saw (eds.). *Proceedings of seminar and workshop on the Status of biological diversity in Malaysia & Threat assessment of plant species in Malaysia*. Forest Research Institute Malaysia, Kepong, Malaysia. Pgs 203–219.

<sup>13</sup> Saw, L., Chua, L., Suhaida, M., Yong, W. and Hamidah, M. 2012. Conservation of some rare and endangered plants from Peninsular Malaysia. *Kew Bulletin* 65(4): 681-689.

<sup>14</sup> Ministry of Natural Resources and Environment, *Biodiversity*. [online] Available at: <http://www.nre.gov.my/English/Biodiversity/Pages/biodiversity.aspx> [Accessed 15 May 2013]

<sup>15</sup> Topani, R., 1990. Status and distribution of tiger in Peninsular Malaysia. *Journal of Wildlife and Parks (Malaysia)* 9, pp.71-102.

<sup>16</sup> Kawanishi, K., Y. Siti Hawa, A. H. Abdul Kadir and T. Rahmat. 2003. Distribution and potential population size of the tiger in Peninsular Malaysia. *Journal of Wildlife and Parks (Malaysia)* 21: 29-50

<sup>17</sup>IUCN, 2012. *IUCN Red List of Threatened Species*. Version 2012.2. [online] Available at: <http://www.iucnredlist.org> [Accessed 10 May 2013].

## ***TERRESTRIAL PROTECTED AREAS OF MALAYSIA***

20. Protected areas have long been established in Malaysia (beginning with the Chior Wildlife Reserve in 1903) and over the years the number of protected areas has grown, with 271 PAs in Malaysia in 2012, covering 3,510,239 ha<sup>18</sup>. Some PAs are administered by the DWNP within the Ministry of Natural Resources and Environment (NRE) and others are administered and managed at the state level by the Johor National Parks Corporation (JNPC) and the Perak State Parks Corporation (PSPC). A map of the peninsula's PA network can be found in Annex I.
21. According to the NRE, terrestrial PAs currently cover over 1.8 million ha in Peninsular Malaysia<sup>19</sup>. They can be divided into four legal categories: (i) areas reserved for a public purpose under the land laws; (ii) permanent reserved forests (PRFs) under the forestry laws; (iii) national parks and state parks under the parks' laws; and (iv) sanctuaries or reserves under the wildlife laws<sup>20</sup>.
22. 1) Areas Reserved for a Public Purpose: A variety of areas in Malaysia are reserved for a specified public purpose under the National Land Code 1965 (and its preceding state enactments referred to below as the "land enactments"). Some of these reserves are bird sanctuaries and wildlife reserves but most areas reserved for a public purpose (such as recreation or tourism) cannot normally be considered as PAs (under the IUCN definition) because biodiversity conservation has not been specified as an objective of the reserve.
23. 2) Permanent Reserved Forests (PRFs): Approximately 84.5% of Peninsular Malaysia's forested area comes under the category of PRF<sup>21</sup> constituted under the National Forestry Act 1984 and previous state forest enactments. The National Forestry Policy 1978 (revised 1992) states that the "Permanent Forest Estate" be classified under four major functions: Production Forest, Protection Forest; Amenity Forest; and Research & Education Forest. Section 10(1) of the National Forestry Act 1984 gives provision for all or part of a PRF to be classed as one or more of 11 functional classes such as timber production forest under sustained yield, soil protection, water catchment, amenity and education. Perlis, Kelantan and Selangor states have added a twelfth functional class, 'State Park', to their forest enactments.
24. These functional classes are not mutually exclusive and some areas are categorised under more than one class. All of the functional classes (b) through (k) plus the State Park class are often referred to as "protection forest".
25. 3) National Parks and State Parks: In Malaysia, the only protected area created under the National Parks Act 1980 is the 2,563 ha Penang National Park, established in 2003. The Taman Negara National Park was created under three state-level National Park enactments (Kalantan Enactment 14-1938; Pahang Enactment 2-1939; and Terengganu Enactment 6-1939). Both of these parks are managed by DWNP and receive federal funding. Four protected areas managed by the JNPC are referred to as "national parks" (including Endau-Rompin National Park) although they were constituted using state enactments (the Johor National Parks Corporation Enactment 1989). This state-level parks corporation model has since been emulated by the PSPC (with Royal Belum State Park established under the Perak State Parks Corporation Enactment 2001), and Perlis (establishing Perlis State Park under the Perlis Forestry Enactment

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<sup>18</sup> NRE, In prep. *Master List of Protected Areas in Malaysia*. Ministry of Natural Resources and the Environment (NRE)

<sup>19</sup> NRE, In prep. *Master List of Protected Areas in Malaysia*. Ministry of Natural Resources and the Environment (NRE).

<sup>20</sup> Ibid.

<sup>21</sup> Forestry Department Peninsular Malaysia, 2012. *Forestry Statistics for the Year 2012* [online] Available at: [http://www.forestry.gov.my/index.php?option=com\\_content&view=article&id=776&Itemid=1073&lang=en](http://www.forestry.gov.my/index.php?option=com_content&view=article&id=776&Itemid=1073&lang=en) [Accessed 01May 2013]

2001). Selangor follows this model but the Selangor State Park has been gazetted under the state-adopted National Forestry Act rather than the state parks enactment.

26. 4) Wildlife Reserves: A number of areas have been gazetted under state enactments for protection of wildlife. Most of these areas were gazetted as Bird Sanctuaries, Wildlife Reserves, Wildlife Sanctuaries, and Game Reserves under the Wild Animals and Birds Protection Ordinance 1955 and its successors, and are now managed by DWNP.

### ***BIODIVERSITY OF PENINSULAR MALAYSIA***

27. Peninsular Malaysia extends 780 km from latitude 1°15' to 6°45' north of the equator. It accounts for 40% of the country's total land area. It is generally hilly with eight mountain ranges, namely the Nakawan, Kedah-Singgora, Bintang, Keledang, Titiwangsa (the 'Main Range'), Benum, Tahan and Timur Ranges. The mountain ranges constitute almost 20% of the land area of Peninsular Malaysia. The general alignment of the mountain ranges is in a north-south direction. Much of the underlying rocks in the Peninsula are covered by thick weathered soils that support lush vegetation.
28. The Main Range forms the headwaters of most major rivers in the peninsula, including those that flow through the states of Selangor, Perak, Kelantan and Pahang. It is characterised by steep cliffs with numerous narrow swift-flowing streams, deep valleys and precipitous gorges. Ultimately these streams converge and contribute to the formation of a network of rivers along the foothills and lowlands of the peninsula. Almost 90% of the water supply for Peninsular Malaysia is derived from the highlands; it is crucial for domestic needs as well as for agricultural and industrial requirements.
29. Peninsular Malaysia is covered by approximately 5.79 million ha of forests. Of its 4.89 million ha of PRF, inland forest covers 4.35 million ha; peat swamp forest covers 0.24 million ha; 0.1 million ha is composed of mangrove forest; and 0.2 million ha is plantation forest. A further 0.89 million ha consists of stateland forest (0.3 million ha) and National and Wildlife Parks (0.59 million ha)<sup>22</sup>. There is high species diversity on the peninsula, which harbours over 8,800 plant species.
30. There are several forest types that characterise the natural vegetation of the peninsula<sup>23</sup>. Of the montane forests, the upper montane ericaceous forest occupies the peaks above 1,700 m a.s.l. Lichens, mosses, ferns and liverworts dominate its floor and the canopy rises to no more than roughly one metre in the cool and damp climate. It is a key habitat for minimising soil erosion on slopes. The lower montane forest is rich in oak and laurel species as well as other temperate shrubs. It is a popular habitat for birds such as eagles and hawks. Hill dipterocarp forests occupy the inland mountain ranges between 300 and 800 m a.s.l., and lowland dipterocarp forests dominate land up to 300 m a.s.l. This moist, tropical habitat has a diverse array of plant species across several layers of the forest from understory to canopy. Large mammals such as the Asian elephant, Malayan tiger, Sumatran rhinoceros and Malayan sun bear inhabit these forests<sup>24</sup>.
31. Peat swamp forest can be found in the river valleys and estuarine plains of Peninsular Malaysia

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<sup>22</sup> Forestry Department Peninsular Malaysia, 2012. *Forestry Statistics for the Year 2012* [online] Available at: [http://www.forestry.gov.my/index.php?option=com\\_content&view=article&id=776&Itemid=1073&lang=en](http://www.forestry.gov.my/index.php?option=com_content&view=article&id=776&Itemid=1073&lang=en) [Accessed 01 May 2013]

<sup>23</sup> Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning

<sup>24</sup> Ibid.



and has highly acidic soils, poor in minerals. It consists of an upper layer of few tree species, an understorey of small tree species and shrub layer colonised by palms. Along the coastal areas in saline and mineral-rich areas are the mangrove forests, which house many bird and small mammal species, such as leopard cat (*Prionailurus bengalensis*) and smooth-coated otter, (*Lutrogale perspicillata*)<sup>25</sup>.

32. Around 220 mammal species inhabit Peninsular Malaysia, including threatened large mammals such as the Malayan tiger, Asian elephant (*Elephas maximus*), Sumatran rhinoceros (*Dicerorhinus sumatrensis*) (which was estimated in 2005 to have a population of less than 100 individuals<sup>26</sup>), Malayan sun bear (*Helarctos malayanus*) and Malayan tapir (*Tapirus indicus*). The region contains more than 625 species of birds, 250 species of reptiles, 90 species of amphibians and more than 385 species of freshwater fish.
33. In 1946 forests covered 77% of Peninsular Malaysia's total land area. Since then, vast areas of lowland forest have been converted for agriculture, urban development and other uses. As of 2005 the forest cover had diminished to 44.6%, or 5.88 million ha<sup>27</sup>, with little lowland dipterocarp forest remaining outside of PAs. Presently, although the total forest cover is 5.79 million ha, or 44% of Peninsular Malaysia's total land area, only 9.8% of the land area is classified as primary (unlogged) forest.
34. Development has led to the local extinction of several species in Peninsular Malaysia including the Javan rhinoceros (*Rhinoceros sondaicus*), the green peafowl (*Pavo muticus*) and at least one timber tree (*Shorea kuantanensis*). The table below lists presumed species extinctions in Peninsular Malaysia.

**Table 1. Species Extinctions in Peninsular Malaysia since 1880**

Last known record	Species
1880	Ledang fern ( <i>Oreogrammitis kunstleri</i> )
1900	White-winged wood-duck ( <i>Cairina scutulata</i> )
1930	Oriental darter ( <i>Anhinga melanogaster</i> )
1932	Javan rhinoceros ( <i>Rhinoceros sondaicus</i> )
1952	Larut fern ( <i>Oreogrammitis crispata</i> )
1955	Penang begonia ( <i>Begonia eiromischa</i> )
1960	Black-headed ibis ( <i>Threskiornis melanocephala</i> )
1970	Green peafowl ( <i>Pavo muticus</i> )
1990	Banteng ( <i>Bos javanicus</i> )
1998	Damar hitam ( <i>Shorea kuantanensis</i> )

35. In addition, the Malayan tiger and other species previously thought to occur in abundance, such as the sambar deer (*Rusa unicorn*), are becoming scarce. The Asian elephant (*Elephas maximus*), which used to be distributed throughout Peninsular Malaysia, is now only found in seven states, with an estimated total population of between 1200 and 1500<sup>28</sup>.

<sup>25</sup> Ibid.

<sup>26</sup> Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning

<sup>27</sup> Forestry Statistics Peninsular Malaysia, 2005. In: Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning

<sup>28</sup> Saaban, S., Othman, N., Yasak, M.N., Nor, B.M., Zafir, A. & Campos-Arceiz, A., 2011. Current Status of Asian Elephants in Peninsular Malaysia. *Gajah* 35(9):67-75



## ***THE CENTRAL FOREST SPINE AND THE CFS MASTER PLAN***

36. The CFS runs down the length of Peninsular Malaysia, straddling eight states (see Figure 3). It is comprised of four main forest complexes; Banjaran Titiwangsa – Banjaran Bintang – Banjaran Nakawan; Taman Negara – Banjaran Timur; South-East Pahang, Chini and Bera Wetlands; and Endau-Rompin National Park – Kluang WR. It covers an area of approximately 5.3 million ha; over 40% of the total terrestrial area and over 91% of forest areas in Peninsular Malaysia. Roughly 80% of the CFS is classed as PRFs, comprising mainly of production forests and protected forests designated for protecting water catchments and soil conservation. Of the remaining 20%, 12.4% consists of national and state parks, and the remainder is comprised of cultivated land, under both state and private tenure, including plantations of oil palm, rubber and planted forest.
37. The state of species biodiversity of the CFS, as of 2013, has been measured by R. Blanchard and R. J. Scholes using the Biodiversity Intactness Index (BII), which acts as an indicator of the average abundance of a large and diverse set of organisms in a given geographical area, relative to their reference populations<sup>29</sup>. The BII takes into account the area of each land use within each ecosystem or vegetation type; the relative impact factor of each use type on biodiversity; and the species richness of each ecosystem. Calculations for the CFS were made based on species richness data (from the Global Biodiversity Information Facility) for the CFS categorised by ecoregion according to WWF (including dry inland forest, montane forest, mangrove forest, and peat swamp forest); and by Altitudinal Floristic Zones (including hill dipterocarp forest, lowland dipterocarp forest and upper hill dipterocarp forest), and aligned with the vegetation unit identification of the Forest Research Institute Malaysia (FRIM), which includes Protection, Primary, Production and Secondary forest areas. Impact factors were taken from the South African BII and include the categories *Degraded, Light use, Plantation and Protected*.
38. Based on the above factors, according to ecoregions the CFS has a BII of between 48% and 64%, meaning that its overall intactness is currently between 48% and 64% of presumed pre-modern levels. According to Altitudinal Floristic Zones the BII lies between 54% and 66%. In comparison, in 2000 the BII for the whole of Southern Africa was calculated to be 84%<sup>30</sup>. It should be noted that the results for the CFS are preliminary and will be updated during the start of the project when localised species richness data becomes available. A detailed report of the BII calculations is included in Annex II.
39. The CFS supplies multiple ecosystem services. One of its main functions is as the “water tower” of Peninsular Malaysia, embracing many critical watersheds that supply water for 22.3 million people in Malaysia (80% of its population) as well as to the island nation of Singapore, and for agriculture and other industries; with a mean annual rainfall of around 3,000 mm per annum, 57% of the precipitation forms surface runoff, whereas 36% is lost to evapotranspiration and 7% contributes to groundwater recharge.
40. The CFS also provides climate regulation, soil protection, and carbon storage and sequestration. According to the FAO, the carbon stock of natural forests in Peninsular Malaysia in 2005 was 1.139 billion tonnes, of which over 85% falls within the CFS<sup>31</sup>. The CFS also offers natural

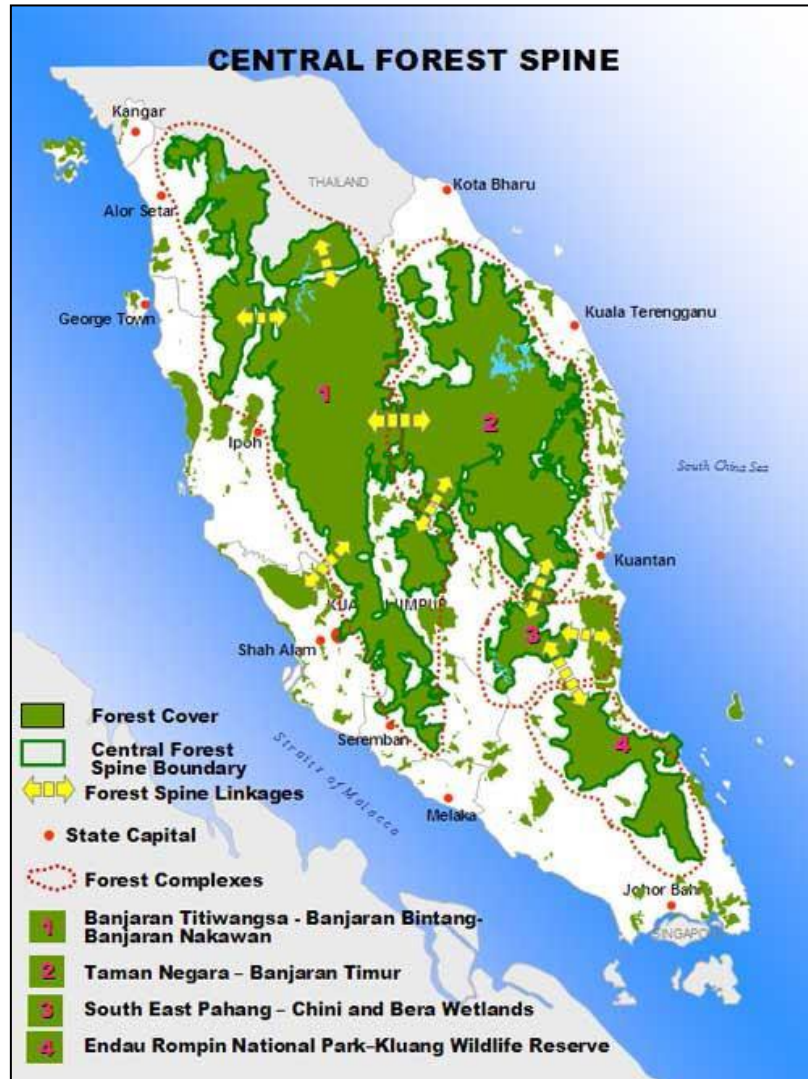
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<sup>29</sup>Scholes, R.J. and Biggs, R. 2005. A Biodiversity Intactness Index. *Nature*, 434, pp.45-49.

<sup>30</sup>Ibid.

<sup>31</sup>The estimate is from the FAO publication (2009) “*Malaysia Forestry Outlook Study*.” The study used a default value of carbon fraction factor of 0.5 tonnes of carbon per tonne of dry matter established by the IPCC-GPG, 2003 to estimate the amount of carbon stored in above-ground and below-ground biomass, as well as carbon in dead wood. The default value of 2.1 tonnes per ha of litter carbon stock of mature forests, also based on the IPCC-GPG, 2003, was used to estimate the amount of carbon stored in the litter of the dry inland forests in Malaysia (excluding inundated forests).

forest products, including timber and non-timber forest products (NTFPs) such as rattan, bamboo, petai (*Parkia speciosa*) and gaharu (agarwood), as well as nationally important nature-based tourism resources, such as its wildlife. More than four million m<sup>3</sup> of logs were harvested in the CFS in 2011, providing direct employment for almost 6,000 people, with the wood-based industries employing five times that number<sup>32</sup>.



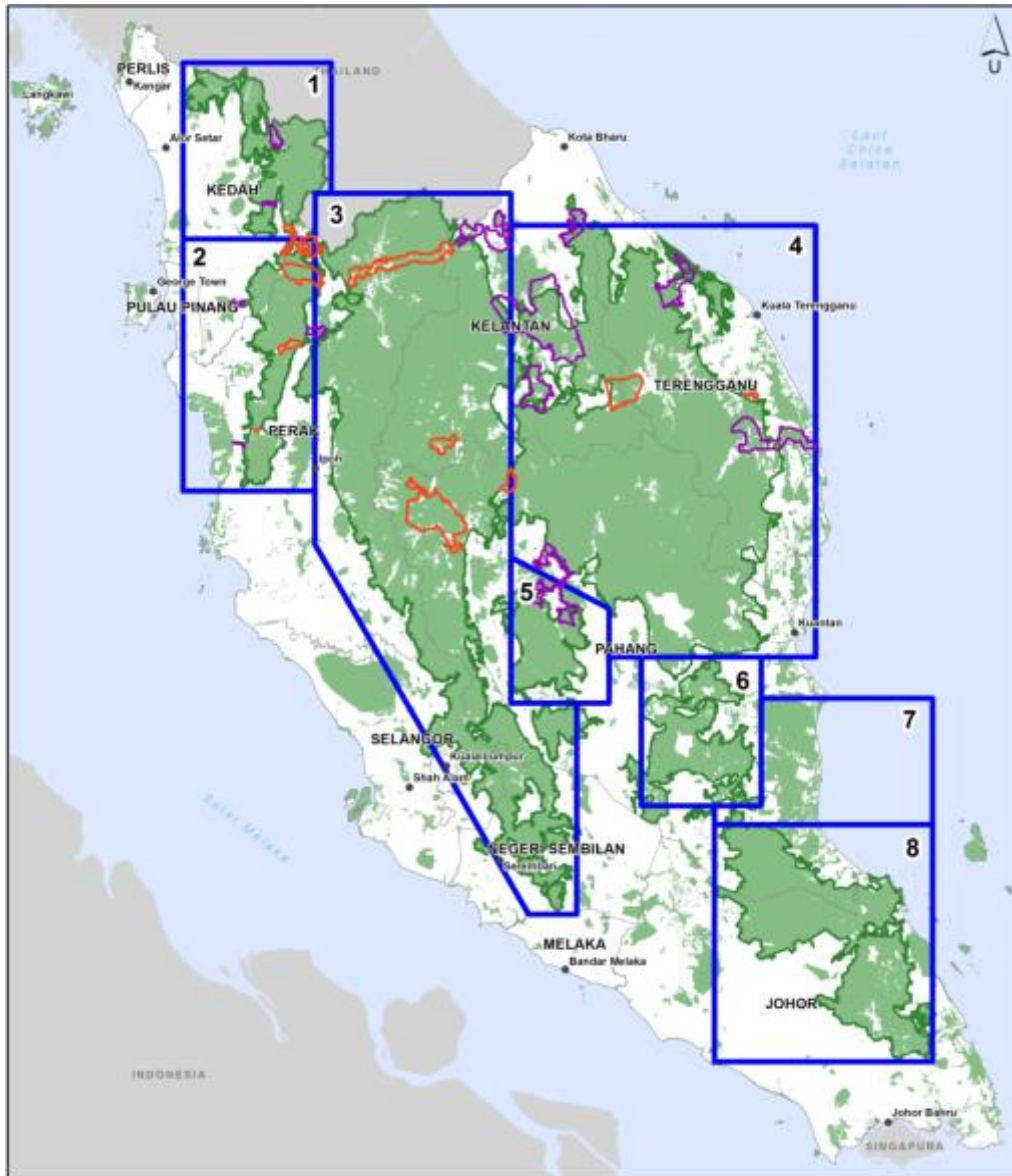
*Figure 3. The Central Forest Spine of Peninsular Malaysia as Envisaged by the First National Physical Plan (2005)*

41. Connectivity between forest complexes has to be maintained to ensure genetic viability of the tiger and many other large mammal species which require a large home range; isolated PAs seldom offer a viable refuge. Therefore, it is paramount that critical landscapes within the CFS, including protection and production lands, are managed with full consideration given to wildlife conservation.
42. There have been a number of efforts to establish wildlife corridors in Malaysia over the years. These efforts have focused on physical structures (such as the viaducts along the Kenyir Corridor in Terengganu) as well as planting native tree species (such as in the Tanah Merah oil palm plantation in Negeri Sembilan). As part of the first National Physical Plan (NPP) in 2005,

<sup>32</sup>FDPM, 2012. *Annual Report 2011*. Kuala Lumpur: Forestry Department Peninsular Malaysia

the federal government introduced the concept of the CFS, and subsequently the CFS Master Plan (CFSMP) was formulated. The plan aims to increase the integrity and connectivity between the four major forest complexes of the CFS. It divides these four complexes (as depicted in Figure 3) into eight (as depicted in Figure 4), with two separate plans for the northern section (CFSI<sup>33</sup>) of roughly 3 million ha, and the southern section (CFSII<sup>34</sup>) of 2.29 million ha.

43. The CFSMP uses the term “ecological linkage” for connectivity between complexes and identifies two types, primary and secondary (Figure 4).



**Figure 4. Ecological Linkages in the Eight Main Forest Complexes Identified in the CF1 Master Plan (2010)**

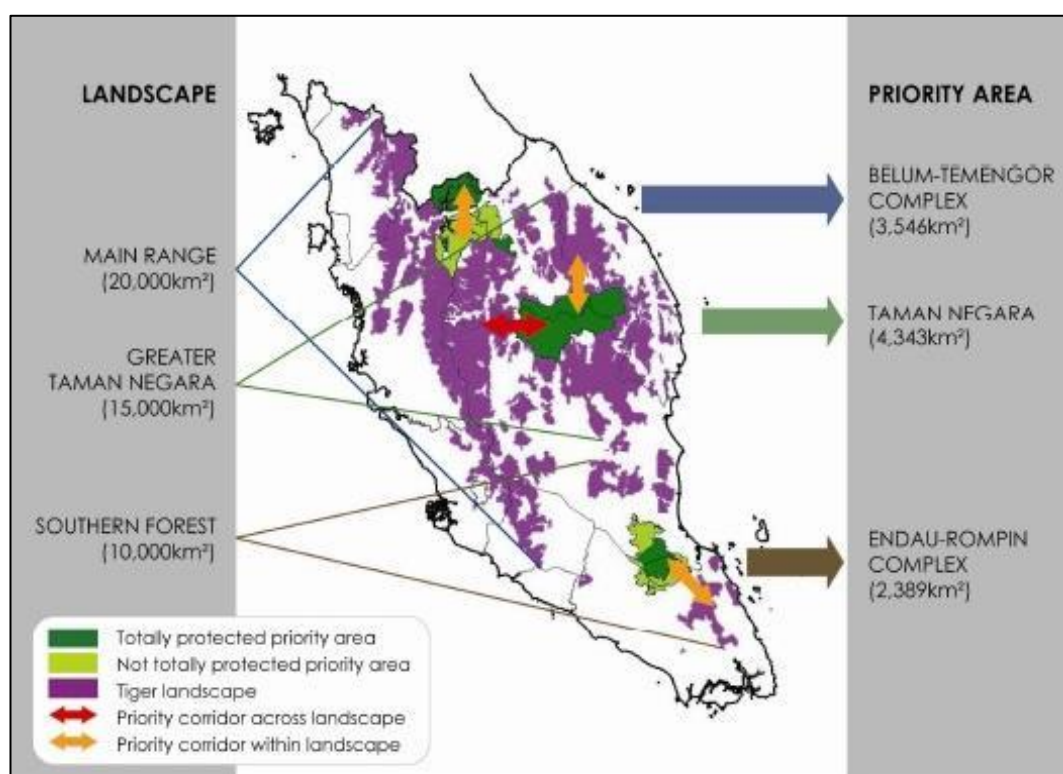
Red = primary linkages; purple = secondary linkages. Linkages in CFSII are not shown. Source: NPP2<sup>35</sup>

<sup>33</sup>Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

<sup>34</sup>Regional Planning Division, 2009. *CFSII: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

<sup>35</sup>Ministry of Housing and Local Government, 2005. *Malaysia National Physical Plan 2005*. Putrajaya: Ministry of Housing and Local Government.

44. Primary Linkages (PLs) are identified in the CFSMP as linear corridors to connect two forest “islands” where it is deemed to be “crucial to re-establish forest connectivity in order to achieve the main Central Forest Spine link”<sup>36</sup>, to allow the movement of wildlife, genetic resources and ecological functions. These areas are located between the most important blocks of forest; usually in narrow stretches where non-forest land use is still minimal. Most PLs are deemed to require major interventions such as land acquisition and the construction of viaducts along highways.
45. Secondary Linkages (SLs) are described as complementary to PLs, to be established where the land is more degraded but where it is still important to maintain a degree of connectivity. Secondary linkages are recommended to take the form of stepping stones, i.e. patches of suitable habitat, and are usually designed to follow riparian corridors and to allow the movement of smaller mammals, birds and insects; however, large mammals may still take advantage of these linkages.
46. Within the CFS there are three particular sites crucial for tiger conservation and are identified as ‘priority areas’ in the National Tiger Conservation Action Plan (NTCAP)<sup>37</sup>, as is shown in Figure 5 below.



**Figure 5. Landscapes and Priority Areas of the National Tiger Conservation Action Plan**

47. As will be clarified in the Project Strategy below, the IC-CFS project will be focusing on the Belum-Temengor and Endau-Rompin complexes and one of the two priority corridors within Taman Negara (shown by the horizontal red arrow in Figure 5) within the NTCAP. Each

<sup>36</sup> Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

<sup>37</sup> Department of Wildlife and National Parks Peninsular Malaysia, 2008. *National Tiger Conservation Action Plan 2008-2020*. Peninsular Malaysia: Department of Wildlife and National Parks.



includes a PL as identified in the CFSMP, To avoid confusion with the forest complexes of the CFSMP, in this document they shall only be referred to as ‘forest landscapes’:

- The Taman Negara forest landscape in Pahang, including the Tanum Forest Reserve (Greater Taman Negara) – Sungai Yu Forest Reserve (Main Range) linkage (CFS I PL 1);
- The Belum-Temengor forest landscape in Perak, including the Temengor Forest Reserve – Royal Belum State Park (Main Range) linkage (CFS I PL2);
- The Endau-Rompin forest landscape in Johor, including the Labis Timur – Mersing Forest Reserves and Lenggor Forest Reserve linkage (CFS II PL1).

48. A summary table of the forest complexes and landscapes as referred to in the CFSMP, NTCAP and this IC-CFS project is shown below. The biodiversity of each focal landscape for the IC-CFS project is elaborated on in Annex III.

**Table 2. Summary of the forest complexes in the CFSMP and the corresponding NTCAP priority areas and IC-CFS landscapes**

Main Forest Complexes as labelled in CFSMP	Sub-Complexes as labelled in CFSMP	Priority Area as labelled in NTCAP	Focal forest landscape as part of IC-CFS
1. Banjaran Titiwangsa-Banjaran Bintang-Banjaran Nakawan (CFS I)	1. Kedah Singgora Forest Complex (Complex number 1 in Figure 4)		
	2. Bintang Hijau Forest Complex (Complex number 2 in Figure 4)		
	3. Main Range Forest Complex (Complex number 3 in Figure 4)	Belum-Temengor Complex (the northern part of Sub-complex 3) 354,600 ha	Belum-Temengor Landscape (CFSI PL2) 354,600 ha
	5. Benom Forest Complex (Complex number 5 in Figure 4)		
2. Taman Negara-Banjaran Timur (CFS I)	4. Greater Taman Negara Forest Complex (Complex number 4)	Taman Negara (the central part of Sub-complex 4, including a priority corridor to Sub-complex 3) 434,300 ha	Taman Negara Landscape (Priority Corridor to Sub-complex 3) (CFSI PL1) 100,000 ha
3. South-East Pahang-Cini and	6. Cini-Bera Forest Complex		

Bera Wetlands (CFS II)	7. South-East Pahang Forest Complex		
4. Endau-Rompin National Park-Kluang Wildlife Reserve (CFS II)	8. Endau-Rompin-Sedili Forest Complex	Endau-Rompin Complex (forming the majority of Sub-complex 8) 238,900 ha	Endau-Rompin Landscape (CFSII PL1) 238,900 ha

## PART 1.2: Socio-Economic Context

### *SOCIO-ECONOMICS OF MALAYSIA*

49. Malaysia is a Federation, consisting of 13 states and three federal territories. Eleven states and two federal territories are located in Peninsular Malaysia while two states and one federal territory (Labuan Island) are part of the island of Borneo. Its estimated total population in 2013 is 29,628,392<sup>38</sup>; approximately 80% of the population resides in Peninsular Malaysia, while just 9.9% live in Sabah and 9.4% in Sarawak. Its capital city, Kuala Lumpur, in Peninsular Malaysia, has a population of 1.493 million.
50. Within the population of Malaysia there are three main ethnic groups: Malay (50% of the population), Chinese (24%) and Indian (7%), with a further 19% consisting of indigenous peoples and just under 8% consisting of other minor ethnicities (as of 2004)<sup>39</sup>. Bahasa Malaysia, also known locally as Malay, is the official language, but several others are also spoken due to the wide range of ethnic backgrounds. The predominant religion is Islam, practised by 60% of the population, with Buddhism, Christianity and Hinduism also practised<sup>40</sup>.
51. Life expectancy at birth is 74 years. Approximately 46% of the population is under 24 years of age while just over 5% are aged above 65 years; population growth is measured at 1.5% p.a.; 72% of the population live in urban areas, with a 2.4% annual increase<sup>41</sup>.
52. Malaysia is considered an upper-middle-income country<sup>42</sup>. Gross Domestic Product (GDP) per capita is USD 16,900 and just 3% of the population are under the poverty line. Public debt is 53.5% of GDP and revenue is 19.3%. Risk of major infectious diseases, for example bacterial diarrhoea, dengue fever and malaria, is high; infant mortality rates are at 14.6 deaths per 1,000 births, ranking 118<sup>th</sup> in the world; maternal mortality rates are 29 deaths per 100,000 live births (125<sup>th</sup> in the world). The literacy rate is 88.7%<sup>43</sup>.
53. However, at the time of its independence in 1957, Malaysia was a poor country. Through effective utilisation of its rich supply of natural resources, including tin, petroleum, rubber, timber, copper, iron ore, natural gas and bauxite, and diligent economic planning following

<sup>38</sup> The Central Intelligence Agency, 2010. *The World Factbook: Malaysia*. [online] Available at: <<https://www.cia.gov/library/publications/the-world-factbook/geos/my.html>> [Accessed 15 May 2013]

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> The World Bank, 2012. *Malaysia*. [online] Available at: <<http://data.worldbank.org/country/malaysia>> [Accessed 01 May 2013]

<sup>43</sup> The Central Intelligence Agency, 2010. *The World Factbook: Malaysia*. [online] Available at: <<https://www.cia.gov/library/publications/the-world-factbook/geos/my.html>> [Accessed 15 May 2013]

independence, Malaysia has undergone rapid economic development, shifting from reliance on rubber and tin to a diverse and industrialised economy. It scored a Human Development Index (HDI) of 0.744 in 2010, which ranked it 57<sup>th</sup> among the 169 countries assessed<sup>44</sup>. Its GDP real growth rate in 2012 was estimated to be 5.6%.

54. The Malaysian economy currently depends on three main sectors; services, manufacturing and agriculture. The services sector was the main source of growth between 2006 and 2010, expanding by 6.8% per annum and increasing its share of GDP to 58.0% in 2010. Growth in services was attributed to a strong performance in the finance, insurance, real estate and business services, wholesale and retail trade, accommodation and restaurants as well as the transport and communications subsectors.
55. The manufacturing and agricultural sectors, and forestry and fishing sectors, account for 26.7% and 7.5% of the GDP respectively. In 2011 these sectors accounted for about 1.4 million jobs (11% of Malaysia's total workforce)<sup>45</sup>, including approximately 24,000 jobs within forestry. In the same year, agricultural land covered 24% of the total land area, and contributed to 34% of the 13.2 billion cubic metres of freshwater extracted for domestic, industrial and agricultural use<sup>46</sup>.
56. Through its rolling five year development plans, Malaysia aims to reach high-income status by 2020, as described in Vision 2020, requiring an average GDP growth of 6.0% per annum<sup>47</sup>. Malaysia has ten 'Big Ideas' for reaching this goal<sup>48</sup>, some of which entail utilising its ethnic diversity to enhance relationships with China, India and Indonesia; prioritising its key economic areas for specialisation rather than maintaining the diversity of its economy; increasing investment in education and internships and mainstreaming technical and vocational training; addressing poverty on a sustainable basis through income-generating schemes and skills training; supporting collaboration between public, private and civil society to drive industrial and social development; and focusing on sustainable growth in order to conserve biodiversity and ecosystem services and reduce emissions of greenhouse gases.

### ***SOCIO-ECONOMIC SITUATION OF PENINSULAR MALAYSIA***

57. Peninsular Malaysia includes the following states: Perlis, Kedah, Penang, Perak, Kelantan, Terengganu, Pahang, Selangor, Negeri Sembilan, Malacca and Johor; and two federal territories, Kuala Lumpur and Putrajaya. The main industries are rubber and oil palm processing and manufacturing, petroleum and natural gas, light manufacturing, pharmaceuticals, medical technology, electronics and semi-conductors, and timber processing. The peninsula's primary agricultural products include palm oil, rubber, cocoa and rice. Forestry, logging and downstream industries (including sawmills, plywood/veneer mills and wood moulding mills) employed a total of 31,826 people in 2011<sup>49</sup>, including 3,684 people in Johor, 7,954 in Pahang and 3,299 in Perak.

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<sup>44</sup>United Nations Development Programme, 2010. *Human Development Report 2010*. UNDP

<sup>45</sup>Department of Statistics, 2011. *Malaysia Labour Report 2011*. Malaysia: Department of Statistics.

<sup>46</sup>The World Bank, 2012. *Annual freshwater withdrawals, total (billion cubic meters)*. [online] Available at: <http://data.worldbank.org/indicator/ER.H2O.FWTL.K3/countries> [Accessed 15 May 2013]

<sup>47</sup>EPU 2010. *Tenth Malaysia Plan: 2011-2015*. Putrajaya: The Economic Planning Unit, Prime Minister's Department

<sup>48</sup>Ibid.

<sup>49</sup>Forestry Department Peninsular Malaysia, 2011. *Annual Report 2011*. Kuala Lumpur: Forestry Department Peninsular Malaysia

## **The Orang Asli**

58. The indigenous peoples of Peninsular Malaysia are known as the Orang Asli, which include around 178,197 individuals from three major groups and comprise around 0.6% of the population of the peninsula<sup>50</sup>. They were the earliest inhabitants of the peninsula and their communities were traditionally distributed over all states in the peninsula except Perlis and Penang. Their traditional economy was based on subsistence planting and foraging, assisted by trade with other communities. Today, Orang Asli communities reside in all states of the peninsula. They claim most of the remaining forest as their customary territory. The major groups of the Orang Asli are described in the table below.

**Table 3. The Major Groups, Distribution and Livelihoods of the Orang Asli**

<b>Major Group</b>	<b>Traditional Distribution</b>	<b>Population Size</b>	<b>Traditional Livelihoods</b>
<b>Negrito</b> <sup>51</sup>	Kelantan, Pahang, Perak	5,009	Hunting/gathering
<b>Senoi</b> <sup>52</sup>	Pahang, Selangor, Perak, Terengganu, Kelantan	97,856	Hunting/gathering/farming
<b>Proto-Malay</b> <sup>53</sup>	Pahang, Johor, Negeri Sembilan, Selangor	75,332	Fishing/hunting/gathering/farming

59. According to Jabatan Kemajuan Orang Asli (JAKOA), the federal agency dealing with Orang Asli affairs, currently Orang Asli occupy and use 145,379.67 ha of land on the peninsula. Just over 14% of this land is gazetted as Orang Asli reserve under sections 6 and 7 of the Orang Asli Act 134; a further 18% has been approved but not yet gazetted as such. Less than 1% is individually titled land, leaving the Orang Asli with no legal entitlement to roughly 67% of land.
60. JAKOA recognises that land is a major source of conflict between communities and the state governments. However, all matters pertaining to land come under the purview of the state government, whereas JAKOA is a federal agency and the Orang Asli a federal matter, which thwarts the implementation of any legislation considering the Orang Asli. There are also differences of opinion regarding the definition of land ownership, with the Orang Asli using the traditional approach of *Saka* where ownership remains collectively rather than individually titled. Finally, based on Section 7 (1) of the Orang Asli Act 134 (1954) the state has the right to gazette a land area as an Orang Asli reserve, but under Section 7 (3) the state can reclaim land that has been gazetted. Limitations of the consultative process involving the communities and the primary authority of the state over land matters add to the land tenure insecurity among the Orang Asli communities.
61. Despite federal government programmes aimed at the development of the Orang Asli, encompassing settlement, economic and social development, the communities remain behind in a number of development indicators. As of 2010, approximately 31% of the Orang Asli people are classified as poor and, of this figure, 20% are considered extremely poor. Roughly 33% of the Orang Asli people do not have access to clean water and 23.9% do not have access to electricity. Access to healthcare services remains below average as compared to the larger society. Orang Asli communities live an average of 25km from the nearest healthcare facility as

<sup>50</sup> Sistem Sumber Maklumat E-Damak JAKOA, 2010

<sup>51</sup> Zuriana Majid. 1989. "The Tampanian Problem Resolved: Archaeological Evidence for a late Pleistocene Lithic Workshop". *Modern Quaternary Research in Southeast Asian*, vol. 11. Rotterdam

<sup>52</sup> Bellwood, P. 1997. *Prehistory of the Indo-Malaysian Archipelago*: Revised Edition. Honolulu: University of Hawai'i Press

<sup>53</sup> Carey, I. 1979. *Orang Asli: The Aboriginal Tribes of Peninsula Malaysia*. Kuala Lumpur: Oxford Press



compared to 74% of the general population who are within a 5km radius of a healthcare facility. Finally, although education indicators show a drastic improvement in primary and secondary school participation, a small proportion complete their secondary education.

62. Orang Asli communities living within or near the vicinity of the three project landscapes include the Jahai and Batek (of the Negrito group), Temiar (of the Senoi) and Jakun (of the Proto-Malay). In both Belum-Temengor and Endau-Rompin forest landscapes the Orang Asli are the only residents; in the Taman Negara forest landscape both Orang Asli and Malay communities reside (see Annex III for elaboration on the socio-economics of the three focal landscapes). Although having occupied the landscape and laying claims to the land as their native customary right, these villages are not formally recognised as Orang Asli gazetted land, so they have no land title or formal roles. The land officially belongs to the state or, as in the case with Kampung (Kg.) Pucur in Endau-Rompin, a private company. The Orang Asli continue to contest this and demand recognition of Kg. Pucur as their native customary right.

### ***HUMAN-WILDLIFE CONFLICT***

63. The expansion of roads and agriculture in the CFS has been accompanied by increasing contact and conflict between humans and wildlife, particularly macaques, elephants and wild boar (*Sus scrofa*). Table 4 shows the number of wildlife disturbances reported in Peninsular Malaysia in 2011.

***Table 4. Wildlife Disturbances Reported in Peninsular Malaysia in 2011<sup>54</sup>***

<b>Species</b>	<b>Johor</b>	<b>Pahang</b>	<b>Perak</b>	<b>Other States</b>	<b>Total</b>	<b>%</b>
Long-tailed macaque ( <i>Macaca fascicularis</i> )	862	391	513	3147	4913	61.18
Elephant	247	229	61	217	754	9.39
Wild boar	163	114	117	343	737	9.18
Civet	31	17	22	474	544	6.77
Pig-tailed macaque ( <i>Macaca nemestrina</i> )	34	47	32	166	279	3.47
Python	33	9	6	77	125	1.56
Tiger	3	24	18	17	62	0.77
Others	101	65	39	412	617	7.68
<b>Total</b>	<b>1474</b>	<b>896</b>	<b>808</b>	<b>4853</b>	<b>8031</b>	<b>100%</b>

64. At least one to two tiger attacks are reported each year, which often results in retaliatory killings by farmers. Between 1999 and 2009, DWNP documented a total of 1,976 cases of tiger disturbances or human-tiger conflict (HTC) in Peninsular Malaysia. Records also indicate that a majority of these disturbances occur around plantations. Pahang recorded the highest number of cases (615) followed by Terengganu (307), Perak (302), Kelantan (287) and Johor (238).
65. Between 1991 and 2005, 40 cases of actual tiger attacks on humans were recorded. The attacks mostly took place in villages (35.5%), plantations (25.5%) and orchards (16.7%). In 19 cases where complete information is available (14 men and five women), there were 11 fatalities. The three top localities for actual tiger attacks on humans over this period were Hulu Perak/Sungai Siput (Perak); Jeli/K.Krai/G.Musang (Kelantan) and Dungun/Kemaman

<sup>54</sup> DWNP, 2011. Annual Report 2011. Peninsular Malaysia: Department of Wildlife and National Parks, Peninsular Malaysia

(Terengganu)<sup>55</sup>. Since 1980 the shoot-to-kill policy has been replaced by capture and translocation; however, between 1991 and 2003, 13 tigers were shot and 24 caught.

66. Across 14 villages and 21 plantations studied by the Wildlife Conservation Society (WCS) between 2009 and 2012, an increase in human-elephant conflict (HEC) cases was recorded; from 70 cases in 2009 and 69 cases in 2010 there was a vast increase to 122 in 2011, then 104 cases in 2012. According to the DWNP Annual Report, Johor had the highest number of HEC cases in 2010, at 181 incidents. MYR 6.5 million was spent on handling HEC in Johor between 1990 and 2000, with conflict-prone areas being Labis, Segamat and Kota Tinggi. Within the span of four years from 2005 to 2008, MYR 3 million was spent, indicating a worsening situation on the ground. Elephant translocation programmes have been carried out, with typical operational costs being roughly MYR 45,000 per elephant.
67. Electric fences, touted as the best solution to prevent elephant conflict, also involve huge expenditures. In 2009, the Perak State government received an allocation of MYR 2.17 million to build a 30 km electric fence between Lenggong and Gerik in Perak. At the end of 2011, a 15 km electric fence was erected by DWNP in Jeli, Kelantan, which cost an estimated MYR 1.4 million.
68. By far the highest number of incidents of HWC concern macaques (particularly the long-tailed macaque). Cases of human-macaque conflict are widespread throughout the peninsula but particularly concentrated in peri-urban areas. In 2012, in response to public complaints, the DWNP killed 97,200 macaques, up from 87,900 in 2011. Johor topped the list with 20,600 of the primates culled, followed by Selangor (18,800), Perak (16,000), Kedah (13,000), Pahang (8,100) and Negri Sembilan (8,000)<sup>56</sup>.
69. According to Orang Asli indigenous communities<sup>57</sup>, wildlife has as much a right to the forest as humans. In all three focal landscapes of this project, there is concern at the acceleration of forest destruction and its effects on wildlife populations. The following table describes the incidences of HWC within the three forest landscapes in 2012 and the support given by DWNP and related NGOs.

**Table 5. Recorded Incidences of Human-Wildlife Conflict in the Three Forest Landscapes in 2012**

Site	Recorded Animal threats (2012)	Support from DWNP as reported by villagers	Support from NGOs	Self-reporting on killing animals	Self-reporting on Maiming animals
<b>Belum-Temengor</b>	111 complaints. Mostly elephants (60), monkeys (24), wild pigs (12), tigers (10) and bears (5)	Not responsive. Usually no action taken.	WWF <sup>58</sup> supports in terms of campaigns and in holding dialogue sessions to understand the situation and to educate communities about for the importance of wildlife.	1	No figures given but traps are set to injure or maim the animals.

<sup>55</sup>Saaban, S., 2007. *Overview Of Human-Wildlife Conflict In Peninsular Malaysia (Case Study: HWC In Jeli, Kelantan And Wildlife Crossing In Second East-West Highway)*. Peninsular Malaysia: Department of Wildlife and National Parks.

<sup>56</sup>Murali, R.S.N. 2013. Uproar over macaque culling. *The Star/Asia News Network*, 18 Mar.

<sup>57</sup>Based on studies carried out during PPG

<sup>58</sup>WWF: The World Wide Fund for Nature

Site	Recorded Animal threats (2012)	Support from DWNP as reported by villagers	Support from NGOs	Self-reporting on killing animals	Self-reporting on Maiming animals
			MEME <sup>59</sup> , researches on elephant and human conflict.		
<b>Endau-Rompin</b>	19 complaints. The report records only HEC	The elephant that killed an elderly man was not captured since it was too close to the village for DWNP to capture it safely*. Elephants are feared; some villagers feel that DWNP should compensate them for crop losses	WCS monitors and conducts assessments on HEC cases, and works with 10 Orang Asli villages to reduce HEC damage through early warning systems and elephant response teams.	0	No figures given, but traps are set to injure or maim the elephants.
<b>Greater Taman Negara</b>	No records	According to wildlife officials there have been no recorded complaints from the village during 2012. Road construction work prevents wildlife from approaching the area	MYCAT <sup>60</sup> conducts regular outreach programmes for adults and children on wildlife conservation.	0	No figures given

\* Reported by school teacher at Kg. Punan

## **WILDLIFE CRIME**

70. Illegal wildlife trade describes any environment-related crime that involves the illegal trade, smuggling, poaching, capture or collection of endangered species, protected wildlife (including animals and plants that are subject to harvest quotas and regulated by permits), derivatives or products thereof<sup>61</sup>. It is among the world's largest illicit businesses; whereas in the past governments were grappling with issues of habitat loss affecting wildlife, illegal wildlife trade has emerged as one of the most urgent threats facing wildlife today. Excluding timber and fisheries, the illicit wildlife trafficking has been valued between USD 7.8 billion and USD 10 billion per year. Wildlife trade is problematic in much of the world, but several factors make it especially so in today's South East Asia, the most dominant of which is the region's rapidly growing economy which drives a significant amount of this trade<sup>62</sup>. While illegal trade poses a threat to numerous endangered species, an equally great threat is linked to the security of the

<sup>59</sup> MEME: the Management and Ecology of Malaysian Elephants Project

<sup>60</sup> MYCAT: the Malaysian Conservation Alliance for Tigers

<sup>61</sup> WWF / Dalberg. 2012. *Fighting illicit wildlife trafficking: A consultation with governments*. WWF International, Gland, Switzerland

<sup>62</sup> Bennett, E.L., Milner-Gulland, E., Bakarr, M., Eves, H., Robinson, J. and Wilkie, D. 2002. Hunting the world's wildlife to extinction. *Oryx* 36: 328-329.

country, in terms of human security, natural resources and (undeclared) revenue.

71. In Malaysia, wildlife is traded primarily for traditional Chinese medicine, wild meat consumption, fashion, the pet trade, decoration and entertainment, Malaysia accounted for 6% of the recorded illegal wildlife trade seizures across 101 countries from July 1996 to October 2008; 67% of the species found were listed in CITES Appendix I or II, and included the seizure of more than 191,934 live animals. Some of the mammals most threatened by illegal hunting and trade include the tiger, Sumatran rhinoceros, Asian elephant, sun bear and Sunda pangolin, all of which are Endangered or Critically Endangered according to the IUCN Red List. A study by TRAFFIC of tiger seizures in range states found that a minimum of 98 tigers were poached in Malaysia between 2000 and 2012<sup>63</sup>. Tiger trade is also known to have occurred across the Malaysia-Thailand border (for example, in Sungai Golok)<sup>64</sup>. Seizures in Malaysia from 2010-2012 were more common in the north of the peninsula and occurred on both sides of the border in 2012. Since 2010, Malaysia and Thailand have made seizures amounting to 72 tigers (36 tigers each)<sup>65</sup>. Since Malaysia's tiger population was estimated in 2003 to be under 500 mature individuals, these figures indicate a very serious threat to the tiger if stronger measures are not taken to stop the poaching of this species.
72. Malaysia's laws for protecting wildlife date back to 1896 and have continued to be updated and expanded since. For example, in 1955 the Wild Animals and Wild Birds Protection Ordinance was created to coordinate the enforcement of wildlife protection in the peninsula; in 1972 the Protection of Wildlife Act was enacted by the Federal Government. This Act was revised in 2010 as the Wildlife Conservation Act, in order to create a stronger legal force against wildlife crime. Under this Act, the hunting of protected wildlife could result in a fine of MYR 50,000 and/or two years imprisonment, and even the possession of snares could result in high penalties. Compared with previously a fine of MYR 3,000 and/or three years imprisonment, this revision of the Act served as a severe warning to poachers. Furthermore, the higher minimum penalties resulted in an increase in the percentage of offences being prosecuted: between 2008 and 2010, a total of 10,892 wildlife offences were recorded by DWNP; however, only 127, or 1.2%, of these offences were prosecuted; in 2011 and 2012, 13% of cases were prosecuted in court, due to the prerogative to compound being no longer the first course of action against offenders.
73. In order to strengthen law-enforcement against poaching, the Malaysian Wildlife Law Enforcement Network (MY-WEN) was established under The Association of South-East Asian Nations' (ASEAN) Wildlife Law Enforcement Network (ASEAN-WEN) in 2005. It is a mechanism for increasing coordination between law enforcement agencies and includes members from agencies such as DWNP, state forestry departments, Police and Customs, and is led by the CITES division of the NRE. However, the effectiveness of MY-WEN is unknown; there have been no reported meetings or updates on the roles, responsibilities and effort taken by agencies in tackling wildlife crime. Furthermore, poachers caught in Malaysia have expressed that there is less risk of penalty involved in poaching in Malaysia than elsewhere<sup>66</sup>. Indeed, in 2009, DWNP seized 3kg of tiger bones in Jeli, Kelantan but there was no prosecution. More recently, DWNP arrested a Malaysian man with eight tiger skins, and the bones and skulls of 22

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<sup>63</sup>Stoner, S.S, and Pervushina, N., 2013. *Reduced to Skin and Bones Revisited: An Updated Analysis of Tiger Seizures from 12 Tiger Range Countries (2000–2012)*. Kuala Lumpur:TRAFFIC.

<sup>64</sup>Verheij, P.M., Foley, K.E. and Engel, K., 2010. *Reduced to Skin and Bones. An Analysis of Tiger Seizures from 11 Tiger Range Countries (2000–2010)*. Cambridge: TRAFFIC International.

<sup>65</sup>Stoner, S.S, and Pervushina, N., 2013. *Reduced to Skin and Bones Revisited: An Updated Analysis of Tiger Seizures from 12 TRAFFIC 2012. Tiger Range Countries (2000–2012)*. Kuala Lumpur:TRAFFIC

<sup>66</sup>Malaysian Conservation Alliance for Tigers. 2012. Malaysia's progress towards 1000 tigers. *MYCAT Tracks*, 4, Petaling Jaya, Malaysia.

tigers, among other products, in Kedah; this was the third largest tiger poaching seizure in the world. The poacher's penalty was just 24 months in jail and a fine that was not proffered by the courts. With now a much stronger legal framework against wildlife crime, there is an urgent need for law-enforcement to be improved accordingly, with additional support from both the general public and civil societies, so that the higher penalties stated in the Act can be a more real and effective warning against poachers.

74. NTCAP's three priority areas for tigers experience serious poaching problems; hence this project's focus on those areas. Poaching threats in these three forest landscapes are elaborated on in Annex III.
75. Understanding of the involvement of Orang Asli in wildlife trade (legal or illegal) is limited; a study conducted in 2011<sup>67</sup> showed that some communities in the Belum-Temengor forest landscape hunt primarily for personal consumption, with some sale of the most commonly hunted species; fish, frogs and soft-shelled terrapin. Monkeys, wild boar, deer and birds are also commonly hunted but mainly for consumption. Although their direct involvement in hunting of the more strongly targeted species for trade, such as pangolin, bear and tiger, seems very limited, it is known that local people are sometimes illicitly enticed into acting as informers for Thai poachers regarding any enforcement activities taking place. There is a need for law-enforcement efforts to involve local communities so that community presence in targeted poaching areas acts as a hindrance to poachers rather than a help.

### ***TOURISM OPPORTUNITIES***

76. Tourism is already a significant component of Malaysia's economy (contributing an estimated 12% to GDP), and is rapidly increasing. The number of tourist arrivals to Malaysia in 2002 was 13.29 million, bringing MYR 25.8 billion (USD 7.8 billion), which was 3.4% of Malaysia's GNI for that year<sup>68</sup>; in ten years this has increased to 25.03 million tourists and MYR 60.6 billion (USD 18.3 billion) in revenue for Malaysia<sup>69</sup>, which is 3.8% of its GNI in 2012<sup>70</sup>.
77. The tourism sector is now becoming increasingly important to the economy; as part of the 10<sup>th</sup> Malaysia Plan, leading Malaysia to high-income status by 2020, Malaysia is aiming to improve its position to be within the top 10 countries in terms of global tourism receipts (currently ranked 16<sup>th</sup>) and increase the tourism sector's contribution by 2.1 times, contributing MYR 115 billion (about USD 37.07 billion) in receipts and providing two million jobs by 2015<sup>71</sup>.
78. Nature-based activities form an important sub-sector of tourism in Malaysia; in 2002, gross earnings from nature tourism were estimated at MYR 655 million, attracting more than half a million visitors from overseas and a similar number of domestic tourists<sup>72</sup>. Up to 800 tour and travel agents were recorded as taking bookings for nature-related destinations, with about 30 companies specialised or focused solely on nature tourism<sup>73</sup>. At this time, the sub-sector was

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<sup>67</sup>Azrina, A., Or, O.C. and Kamal, S.F., 2011. *Collectors and Traders: A study of Orang Asli involvement in wildlife trade in the Belum-Temengor Complex, Perak*. Kuala Lumpur: Centre for Malaysian Indigenous Studies, University of Malaya.

<sup>68</sup>The World Bank, 2012. *GNI, PPP (current international \$)*. [online] Available at <<http://data.worldbank.org/indicator/NY.GNP.MKTP.PP.CD>> [Accessed 07 May 2013]

<sup>69</sup>Tourism Malaysia, 2013. *Research: Tourism Arrivals and Receipts to Malaysia*. [online] Available at: [http://corporate.tourism.gov.my/research.asp?page=facts\\_figures](http://corporate.tourism.gov.my/research.asp?page=facts_figures) [Accessed 07 May 2013]

<sup>70</sup>The World Bank, 2012. *GNI, PPP (current international \$)*. [online] Available at <<http://data.worldbank.org/indicator/NY.GNP.MKTP.PP.CD>> [Accessed 07 May 2013]

<sup>71</sup>EPU 2010. *Tenth Malaysia Plan: 2011-2015*. Putrajaya: The Economic Planning Unit, Prime Minister's Department

<sup>72</sup>Badruddin, M. 2002. *The development of ecotourism in Malaysia – is it really sustainable?* Paper presented at community-based ecotourism conference in South-East Asia, Chiang Mai.

<sup>73</sup>Yasak, N., 2002. *Development of Ecotourism in Malaysia*. Kuala Lumpur: Department of Wildlife and National Parks.

estimated to contribute around 10% of all tourism in Malaysia and to be growing at a rate of 35% a year<sup>74</sup>. Today, the relative importance of nature tourism is even greater. A recent study by the Department of Statistics shows that natural areas rank among the most popular destinations visited by domestic tourists<sup>75</sup>, and PAs and associated natural/cultural attractions remain a key location for international tourism.

79. The Biotechnology Master Plan, which was developed in 2005, will be a key strategic driver to propel economic and social progress in Malaysia, and could unlock the value of the nation's natural resources and human capital. Given the recorded growth in tourism as well as the increase in the volume and value of the tourism sector overall (both the number of international tourists<sup>76</sup> and tourism earnings to the economy<sup>77</sup> have more than doubled since 2002), by now nature tourism may attract several million domestic and international visitors and directly contribute billions of Ringgits to the national GDP.
80. The Ministry of Tourism, Malaysia, has adopted the National Ecotourism Plan to provide policies and guidelines for the sustainable development of ecotourism. The CFS already hosts a number of important touristic and recreational sites, including its network of Forest Recreation Areas and PAs; there are estimated to be well over one hundred distinct recreational sites in the forests of Peninsular Malaysia<sup>78</sup>. The country has won several international "Best Ecotourism Destination" awards on the basis of outstanding opportunities for caving, hiking, jungle trekking, white water rafting, rock climbing, bird watching, diving and river cruising.
81. Particular attractions in the CFS include the Fraser's Hill International Bird Race and the Taman Negara Eco-Challenge competition (both held annually in the state of Pahang). Taman Negara is also under consideration for listing as a WHS, as classified by the United Nations Educational, Scientific and Cultural Organisation (UNESCO); between 2010 and 2011, the park received 90,000 visitors from 120 countries worldwide through four entry points. Also within Taman Negara landscape is conservation tourism; Citizen Action for Tigers (CAT) offers hiking and backpacking activities as well as habitat management activities for volunteers, which also helps to provide an intimidating presence against poachers. Other ecotourism attractions in the CFS include the Kuala Gandah Elephant Sanctuary, Krau WR, Pahang; Kenong Rimba Park, Pahang; SungaiEndau, Endau; and Royal Belum PRF, Perak.
82. The table below shows the opportunities available for tourism within the CFS focal forest landscapes. It is clear that there is strong potential for income generation through setting up ecotourism activities within the forested habitats.

**Table 6. Tourism Opportunities in the CFS Focal Forest Landscapes**

Attractions	Belum-Temengor	Greater Taman Negara (Pahang)	Endau-Rompin
Water-features	Boating (canoes, out-board motor) at Temengor lake; boat-chalets	Sungai Relau, Sungai Yu and Sungai Tanum, swimming, kayaking, canoeing, tubing and	Boating at Sungai Endau

<sup>74</sup>World Travel and Tourism Council, 2002. *Malaysia: the impact of travel and tourism on jobs and the economy*. London: World Travel and Tourism Council.

<sup>75</sup>Department of Statistics. 2011. *Domestic Tourism Survey 2011*. Putrajaya: Department of Statistics

<sup>76</sup>Kosnan, S., 2012. Demand factors for international tourism in Malaysia. *Prosiding Perjem*, VII, JILID, pp.44-50.

<sup>77</sup>World Travel and Tourism Council, 2012. *Travel & Tourism Economic Impact 2012 Malaysia*. London: World Travel and Tourism Council.

<sup>78</sup>Awang, N. undated. *Economic valuation of forest ecosystem services in Malaysia*. Malaysia: Department of Forest Management, Faculty of Forestry, Universiti Putra.

Attractions	Belum-Temengor	Greater Taman Negara (Pahang)	Endau-Rompin
		rafting; Mahseer Breeding Centre	
Jungle Trekking	Treks inside Royal Belum Park to see waterfall, Rafflesia flowers	Treks to Gunung Tahan, the Peninsula's highest peak; interpretive walks at Sungai Relau, Taman Negara; CAT Walk and Trailblazer (MYCAT conservation tourism activity)	Trek to see multi-tiered waterfall
Wildlife Watching	Hornbills, elephants and other animals; night-walks	Hides at salt-licks: tapirs, deer, elephants; camera-trapping for CAT volunteers (MYCAT conservation tourism); bird watching at Sungai Relau; night walks	Elephants, bearded pigs, fish
Local Communities	Jahai, Orang Asli	Batek, Orang Asli	Jakun, Orang Asli
Other Attractions	Pill boxes from Communist Emergency era; hydroelectric dam	Merapoh caves; Selava lookout tower; Wildlife Interpretation Centre; Sungai Yu Recreation Centre	

### ***ALTERNATIVE LIVELIHOODS***

83. Most natural resources in Malaysia are owned and managed by the state governments, with no explicit provision for management by local communities. However, the advent of forest certification has given the state forestry departments increased incentives to engage with local communities. Almost all selectively logged forests are certified under the Malaysian Timber Certification Scheme (MTCS)<sup>79</sup> with a small proportion certified under the Forest Stewardship Council (FSC) scheme. These schemes acknowledge the rights of local communities in general and those of indigenous peoples in particular. One particular community, in the state of Selangor, has expressed interest in co-management of the local forest and has formed a society for this purpose (the Kota Damansara Community Forest Society).
84. There are already a number of successful cases of community-based natural resource management (CBNRM). In the village of Bundu Tuhan, Sabah, the native reserve is managed by a board of trustees that has developed and enforced a management plan to zone and control exploitation of the forested water catchment in the hills behind the village. Another celebrated case from Sabah is the *tagal* system whereby communities restrict fishing on certain stretches of a river with the exception of one annual "open-day".
85. The Orang Asli populations currently depend heavily on the forests' resources, including NTFPs such as plants for medicinal use or household items. It is clear from the PPG study of indigenous communities that there is high potential for these livelihood activities to be better marketed and more sustainably practiced so that local communities can benefit from them not only for

<sup>79</sup>See paragraph 153 for more details of MTCS.



subsistence use but also for a viable source of income. Such livelihoods could include the sustainable harvesting and selling of medicinal plants, the recording of indigenous knowledge, or the use of wood products for instruments and household items.

86. Results from interviews during the PPG study show that there is also a current shift towards increased involvement of the Orang Asli in PA management and eco-tourism. For example, the Batek community, who live in and around the Taman Negara National Park, are involved in producing and selling traditional handicrafts to tourists, and the DWNP is making continuous efforts to ensure their involvement in the PA management and in the eco-tourism activities. There are approximately 15 certified nature guides from the Batek community, who are able to supply a wealth of information about the forest.
87. In Belum-Temengor there are groups for handicrafts, traditional knowledge (linked to a FRIM programme on herbs and medicinal plants), tour guide operators and trained field research assistants. However, these groups are not common and opportunities to develop their programmes have been limited. In the Endau-Rompin forest landscape, too, most of the National Park tour guiding activities are currently being undertaken by the Jakun people, who live close to the boundary.
88. Currently, there is no practice for significant community participation in co-management of the forests and wildlife within the three targeted landscapes. However, there is a strong desire for official ownership and responsibility for the land, and involvement in decision-making regarding resource use. The establishment of joint committees consisting of government authorities, Orang Asli communities and other land users, with responsibilities shared between stakeholders, would have several benefits. Such an arrangement would allow the Orang Asli to a) participate in decision-making b) gain income from employment in land management activities, c) enhance the effectiveness of the land management due to their strong knowledge of the forests and d) give the Orang Asli recognition and increased social status. Employment opportunities include: monitoring and enforcement, tree-planting and fence construction, documentation of local resource sites and indigenous knowledge, identification and protection of local resources for handicrafts and commercial harvests (such as Tualang trees, which are common sites for bees' nests).

## ***MECHANISMS FOR FUNDING CONSERVATION***

### **Current mechanisms for funding conservation**

89. The public budget remains the primary mechanism for financing forest conservation in Malaysia. As laid out in the tenth schedule of the Constitution, all proceeds from the taxes, licence fees, service fees, royalties and other revenues raised from land and forests are assigned at the state level. However, only the forest development revenue is retained by state forestry departments; other forest revenue streams are remitted to the State Consolidated Fund. This comprises only about 11% of total forest revenues, and was worth around RM 42.5 million (just over USD 14 million) in 2010; this compares to the peninsula's state forestry departments' annual operational expenditures of approximately RM 143.6 million and development expenditures of RM 35.2 million<sup>80</sup>. Federal and State Consolidated Funds provide for the

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<sup>80</sup> Forestry Department of Peninsular Malaysia, 2011. *Annual Report 2010*. Kuala Lumpur: Forestry Department of Peninsular Malaysia.



general budget, from which public funds are allocated annually to different ministries and government agencies, including FDP and state forestry departments. As relatively few revenues are earmarked or retained at the departmental level, annual allocations from the general budget provide the main source of funding for the federal and state agencies that are responsible for biodiversity and ecosystem conservation (namely the federal and state forestry departments, the DWNP and State Park departments).

90. Many National Parks and State Parks, and some Forest Recreation Areas, charge entrance fees and sometimes other fees such as camera fees, guides and tours. Almost all are remitted to Consolidated Funds (although specific arrangements vary between states).
91. The Federal Government of Malaysia has initiated a number of conservation trust funds. For example, the DWNP Peninsular Malaysia has established the Elephant Trust Fund to facilitate donation from the public for the National Elephant Conservation Centre at Kuala Gandah. The Federal Government is also working towards establishment of the Conservation Trust Fund, with a mechanism to channel contributions from public or private sectors and to earmark the use of different revenues. In addition, various trusts are managed by the private sector, or by industry associations, which aim to raise and spend funds for the conservation of forest biodiversity and ecosystems. One example of these is the Malaysian Palm Oil Wildlife Conservation Fund (MPOWCF), set up in 2006.
92. Many corporate environmental and social responsibility (CSR) initiatives are implemented by partnerships of private sector companies and NGOs. WWF Malaysia works closely with the corporate sector to generate funding for biodiversity conservation projects, such as its partnership with AEON Co (M) Bhd to help in reforestation and rehabilitation at North Ulu Segama PFR. The Malaysian Nature Society (MNS) also has a number corporate supporters and members, including ongoing projects with the Sime Darby Foundation.
93. The Malua Conservation Habitat Bank scheme in Sabah is a public-private partnership, which has the objective of creating a commercially sustainable model for large-scale rainforest conservation and restoration in Malua PFR through the retirement of logging concessions. The forest concessionaire continues to hold use rights over the area, and the state government of Sabah has licensed the conservation rights of any eco-products (such as biodiversity conservation certificates and carbon credits) to the Malua Wildlife Conservation Habitat Bank. The conservation bank and management activities are funded by the sale of Biodiversity Conservation Certificates. Each certificate, sold at USD 10, represents 100 m<sup>2</sup> of rehabilitation and protection of the Malua PFR.

### **Carbon financing**

94. No Reducing Emissions from Deforestation and Forest Degradation (Plus Conservation) (REDD+) pilot projects yet exist in Malaysia. There are a small number of projects that target the voluntary market (in other words purchases of carbon credits not driven by an existing regulatory compliance obligation<sup>81</sup>), some of which specifically concern forest carbon. One example is a carbon-financed rainforest rehabilitation project in Sabah, which is a partnership between Face the Future (a Netherlands-based organisation) and Yayasan Sabah Foundation (Infapro). It has so far achieved the restoration of over 11,000 ha of tropical rainforest. In addition, almost 150 projects in Malaysia have applied for registration under the Clean Development Mechanism (CDM). Together these account for more than 9.1 million certified

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<sup>81</sup> Hamilton, K., Sjardin, M., Peters-Stanley, M. and Marcello, T., 2010. *State of the voluntary carbon markets 2010*. Report prepared for Ecosystem Marketplace and Bloomberg New Energy Finance, June 14, 2010

emission reductions<sup>82</sup>. A number of voluntary carbon offset schemes have also recently been developed by the corporate sector, such as Malaysian Airlines' carbon footprint offsetting scheme.

### **Financial incentives for environmental activities**

95. The Malaysian government has recently initiated a series of environmental-fiscal reforms that aim to provide businesses, producers and consumers with incentives for sustainable environmental management. The Ministry of Energy, Green Technology and Water is a key player in this. These measures provide a way of reallocating public revenue streams to encourage private producers and industries to carry out conservation activities. Environmental incentives primarily target the energy, construction, industrial and technology sectors. Examples include the Green Technology Financing Scheme and the Green Building Index, among others.

### **Payments for Ecosystem Services**

96. It is expected that Malaysia's rapidly developing economy and increasing population will increase demand for water significantly in the coming decades. Anticipating future water shortages, the government is developing the National Water Resource Policy under the 10th Malaysia Plan to ensure long-term water security. The CFS plays a key role in watershed protection. It regulates water runoff during times of heavy rain, which reduces flood events and prevents soil runoff that increases the siltation of hydroelectric reservoirs. These services are essential to ensure future water and electricity supplies in Peninsular Malaysia, which are envisaged to become scarce as water and electricity demands are expected to surge with the rapid economic development of the country.
97. Only one PES scheme is currently operational in Malaysia, and is located within the CFS landscape. The Perak State Forestry Department (PSFD) has recently negotiated an agreement with a small hydro developer, whereby a payment will be made to the PSFD set at 0.25% of profits. The scheme is projected to generate revenues in the region of RM 300,000 a year. Despite the lack of PES schemes in Malaysia, the concept is generating a great deal of interest. In addition to the general recommendations made on the development of PES in the Economic Planning Unit (EPU) report, WWF Malaysia have investigated the possibilities for water-based PES in several key forest sites, such as in Kedah state.
98. As already indicated in the CFSMP<sup>83</sup>, forests in the CFS landscape generate multiple ecosystem values. Table 11 summarises key ecosystem services and values in the CFS as they relate to potential PES schemes and other sustainable financing mechanisms. It should be noted that this list focuses on provisioning, supporting and regulating services; cultural services are excluded, as these are not a target of potential payment schemes.

**Table 7. The Beneficiaries and Economic values of Ecosystem Services in the CFS**

<b>Ecosystem service</b>	<b>Key user groups and beneficiary sectors</b>	<b>Major economic values and linkages</b>
<b>Water supply and quality regulation</b>	Domestic and industrial water users Water supply companies Small-scale and commercial	Public and private revenues from water supply Output of products using water as an input Avoided water shortage impacts and costs Reduced costs of water treatment, dredging and de-

<sup>82</sup> UNFCCC, undated. [online]. Project searches available at <http://cdm.unfccc.int/Projects/projsearch.html> [Accessed 10 February 2013]

<sup>83</sup>Regional Planning Division, 2010. *CFS: Masterplan for Ecological Linkages*. Putrajaya: Regional Planning Division, Department of Town and Country Planning.

<b>Ecosystem service</b>	<b>Key user groups and beneficiary sectors</b>	<b>Major economic values and linkages</b>
	irrigated agriculture and plantations Mining operators Large and small-scale hydropower facilities	silting Savings on breakages and repairs to equipment and machinery Maintenance of dam and reservoir lifetime and productive capacity
<b>Flood control regulation</b>	Settlements Infrastructure Agriculture and plantations	Avoided damages to agriculture, homes, infrastructure and other installations Avoided costs of displacement of human population Avoided clean-up and remediation costs
<b>Habitat for biodiverse, rare and endangered species</b>	Tourists and recreational visitors Tourism service industry International community	Private and public revenues in primary and secondary tourism and recreation industries Employment in primary and secondary industries Value-addition in tertiary sectors Tourist visitor values Donations and other contributions to conservation
<b>Landscape and scenery</b>	Adjacent residents Tourists and recreational visitors Tourism industry operators	Property value and prices Private and public revenues in primary and secondary tourism and recreation industries Value-addition in tertiary sectors Employment in primary and secondary industries Tourist visitor values
<b>Recreation and tourism</b>	Tourists and recreational visitors Tourism service industry	Private and public revenues in primary and secondary tourism and recreation industries Employment in primary and secondary industries Value-addition in tertiary sectors Tourist visitor values
<b>Scientific and research</b>	Global and domestic research institutions Bioprospecting companies Pharmaceutical, cosmetic, food and industrial product development companies	Public and private research income Revenues from bioprospecting patents, licences and fees Earnings from product development and sale Cost savings through new products and technologies
<b>Global climate/ carbon sink</b>	Local, national and global community	Avoided costs of climate change and variability Mitigation value of carbon sink Carbon trading-related earnings and revenues
<b>Local microclimate</b>	Agricultural producers Forest-adjacent residents	Value of enhanced productivity and production opportunities Costs avoided of dealing with temperature extremes
<b>Timber products</b>	Forest-adjacent and small-scale local users Forest concessionaires Sawmilling and wood processing industry Wood products, pulp and paper manufacturing industry	Local earnings and expenditures saved Private and public revenues in harvesting, processing and marketing industries Value-addition in tertiary sectors Employment in primary and harvesting, processing and marketing industries Export and foreign exchange earnings from forest product trade
<b>Non-timber</b>	Forest-adjacent and small-scale	

Ecosystem service	Key user groups and beneficiary sectors	Major economic values and linkages
products	local users Harvesting and processing industries	

## PART 1.3: Political and Stakeholder Context

### *POLICY AND LEGISLATIVE CONTEXT*

99. Vision 2020 is the main development policy framework in Malaysia, a long-term development vision introduced in 1991. The vision is for Malaysia to become, by 2020, ‘fully developed along all the dimensions: economically, politically, socially, spiritually, psychologically and culturally.’<sup>84</sup> The vision calls for a self-sufficient industrial, Malay-centric developed nation, complete with an economy by 2020 that will be eightfold stronger than the economy of the early 1990s.
100. The Third Outline Perspective Plan 2001-10<sup>85</sup> is a ten-year plan forming the framework for the preparation of five-year Malaysia Plans, which contribute towards achieving Vision 2020 (explained below). The Plan emphasises the use of economic instruments for environmentally sustainable development. It states that legal and regulatory instruments will be complemented by “innovative economic and tax instruments, including the removal of distortions and barriers that impede efforts in improving environment quality and optimal natural resource use”. The main focus is on an ambitious programme of environmental fiscal reforms targeting the energy, construction, industrial and technology sectors of Malaysia.
101. The 5-year development-planning framework is the Malaysia Plan. The 10th Malaysia Plan, covering the period from 2011-2015, has recently been approved. In the 10th Plan, the conservation and sustainable utilisation of the nation’s ecological assets, both physical and biological, will be further enhanced especially in the context of accelerated economic growth. It names “valuing our environmental endowments” as one of its “10 Big Ideas”<sup>86</sup>, and introduces the AFFIRM framework of Awareness, Faculty, Finance, Infrastructure, Research and Marketing; this recognises the importance of both financial and fiscal incentives to achieve environmental conservation goals. Specifically in relation to forests and wildlife, the plan highlights the need to ensure that local communities are involved in, and benefit from, conservation.
102. The National Physical Plan 2005<sup>87</sup>(NPP) is the first of a series of five year plans for Peninsular Malaysia and fulfils the role of setting the spatial framework at the national level for the rolling five-year Malaysia Plans, geared towards the achievement of Vision 2020. Its four objectives include:
- To rationalise national spatial planning for economic efficiency and global competitiveness;
  - To optimise utilisation of land and natural resources for sustainable development;

<sup>84</sup> JPBD, 2005. *Malaysia National Physical Plan*. Putrajaya: Federal Department of Town and Country Planning, Ministry of Housing and Local Government.

<sup>85</sup> The fourth National Outline Perspective Plan (2011-20) is not yet available.

<sup>86</sup> EPU 2010. *The Tenth Malaysia Plan 2011-2015*. Putrajaya: The Economic Planning Unit, Prime Minister’s Department.

<sup>87</sup> JPBD, 2005. *Malaysia National Physical Plan*. Putrajaya: Federal Department of Town and Country Planning, Ministry of Housing and Local Government

- To promote balanced regional development for national unity;
  - To secure spatial and environmental quality and diversity for a high quality of life.
103. The NPP is reviewed and updated every five years; the last review was carried out in 2010, replacing the first NPP with NPP-2 (described below).
104. Policy 18 of the NPP states that the PA network shall be enlarged to include a full representation of the diversity of natural ecosystems, and that ‘Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development.’ The NPP includes management guidelines for various degrees (or the prohibition) of development, agriculture, logging and tourism, depending on the ranking of the ESA.
105. Policy 19 of the NPP states that: “A Central Forest Spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area Network.” This concept was retained in the NPP-2 as Policy 23. The plan includes the gazettment of the CFS as Protection Forest; the formulation of management plans, and operational procedures in order to regulate the functions and uses of the CFS; the enhancement of tourism within the CFS; studies in re-establishing the integrity and connectivity of forests and wetlands between the four major forest complexes; and the use of rivers as connecting corridors between complexes. The principle implementing agencies of this Policy include the NRE, FDP, DWNP, and the Department of Town and Country Planning (DTCP).
106. The CFS Master Plan for Ecological Linkages was prepared by the DTCP in 2010 in accordance with Policy 19 of the first NPP (Policy 23 of NPP-2) and approved later that year by the National Physical Planning Council (NPPC). The CFSMP identifies 37 ecological linkages critical for linking major forest blocks in the peninsula. The Master Plan provides a detailed action plan and the associated financial costs of maintaining and enhancing ecological linkages through the peninsula, from the states bordering Thailand in the north to the state of Johor in the south. The Plan was formulated by the federal government but a vast majority of its implementation is under the responsibilities of respective state governments. It aims to be completed over the next 15 years as part of the 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> five-year Malaysia Plans and is expected to cost over USD 257 million. The CFSMP forms the basis for the IC-CFS project.
107. The National Physical Plan-2<sup>88</sup> 2010 provides political guidance for the implementation of the CFSMP under Policy 23. The plan also contains a strong emphasis on payments for ecosystem services; it considers it “essential that spatial planning serves to maintain biodiversity, ecological stability and consequently, its ability to provide ecosystem services”. It calls for state governments to be provided with the opportunity to move away from their dependence on a very narrow revenue base (cited as being mainly fees for the exploitation of natural resources and land taxes), and to establish economic incentives for the implementation of environmental protection and biodiversity conservation programmes. The plan further suggests that “fiscal measures shall be introduced to enable state governments to offset potential revenue loss as a result of biodiversity conservation initiatives” in environmentally sensitive areas, and that “studies shall be carried out to formulate the most appropriate mechanisms, which may include Payment for Ecosystem Services (PES) schemes such as public payment instruments, carbon trade and biodiversity offsets.”

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<sup>88</sup>JPBD. 2010. *National Physical Plan 2*. Putrajaya: Federal Department of Town and Country Planning, Ministry of Housing and Local Government

108. The Town and Country Planning Act 1976 is the main legislative framework for land use planning and development. Conservation is specifically recognised to be an essential element of land-use planning under the Act, which is enforced by the DTCP. The Act gives the provision to the state and local authorities to set aside certain land to be conserved as ESAs. ESAs are relevant for sustainable forest management insofar as they prescribe which areas may be cleared for plantations and which areas must remain under natural forest. The federal DTCP advises the local authorities in development and implementation of the local plans.
109. The National Forestry Policy 1978, amended in 1992 aims to strengthen the institutional base and enhance the co-operation and understanding between federal and state governments in forestry sector development and management. The two main objectives of the policy are to a) conserve and manage the nation's forests based on the principles of sustainable management, and b) protect the environment and to conserve the biological diversity, genetic resources and to enhance research and education in forest management. The Policy introduces a clear classification system for the Permanent Forest Estate, with associated management standards. It also provides for a) the conservation of biological diversity and areas with unique species of flora and fauna, b) development of a comprehensive programme in community forestry, c) promotion of active local community involvement in forestry management projects, d) support for intensive research programmes in forestry and forest products, and e) improved forest law enforcement, emphasising that state governments must judicially implement the National Forest Act 1984 (Revised 1993) in order to ensure sustainable forest management and conservation.
110. The National Forestry Act 1984, amended in 1994 provides for the State Director of Forestry, with the approval of the State Authority, to classify every PRF. There are 11 categories: timber production under sustained yield; soil protection forest; soil reclamation forest; flood control forest; water catchment forest; forest sanctuary for wildlife; virgin jungle reserve forest; amenity forest; education forest; research forest; and forest for federal purposes. State governments have formally agreed to adopt these categories; several states have added the classification of "State Park Forest" to the list of classifications. Under the revised Act, provisions are strengthened to reduce illegal forest encroachment and logging through the increasing of penalties from a maximum fine of MYR10,000 and/or up to three years' imprisonment to a maximum fine of MYR500,000 and/or between one and 20 years' imprisonment. It also allows for the forestry departments to request assistance from the armed forces in forest surveillance.
111. Also under this Act, the Water Catchment Forest Rules specify details for the management of forests for the provision of ecosystem services other than timber and non-timber forest produce. These are reported to be under development in Selangor, and have been enacted in Perak. They outline the procedures both for classifying PRF as water catchment forests and for preparing management plans. They also allow for the formation of committees for the development and management of water catchment forests, and enable certain restrictions to be placed on their extractive utilisation.
112. The National Policy on Biological Diversity 1998 is Malaysia's primary guiding document for the implementation of the Convention on Biological Diversity (CBD). It aims to "conserve Malaysia's biological diversity and to ensure that its components are utilised in a sustainable manner for the continued progress and socio-economic development of the nation". It contains as one of its objectives "to optimise economic benefits from sustainable utilisation of the components of biological diversity"; among its strategies are "identify and encourage the optimum use of the components of biological diversity, ensuring fair distribution of benefits to the nation and to local communities" and "identify and establish appropriate funding

mechanisms for biological diversity conservation and management”.

113. The National Biodiversity Strategy and Action Plan (NBSAP) 1998 is contained within the National Policy on Biological Diversity and was developed under Article 6 of the CBD which required each signatory country to formulate national strategies or plans with the objective of conserving and sustainably utilising biological diversity. It includes 15 strategies and 87 actions for achieving this objective. Strategies include (1) improve the scientific knowledge base; (2) enhance sustainable utilisation of the components of biological diversity; (4) strengthen the institutional framework for biodiversity management; (5) strengthen and integrate conservation programmes; (6) integration of biodiversity considerations into sectoral planning strategies; (8) enhance skill, capabilities and competence; (10) minimise impacts of human activities on biological diversity; and (15) establish funding mechanisms<sup>89</sup>.
114. The National Water Resources Policy 2012 aims to secure Malaysia’s water supply so that it may continue to support Malaysia’s booming economy, including in agricultural and industrial sectors and in urban centres. The policy emphasises the need for water for a sufficient food supply in all areas as well as for the development of rural areas. The policy includes the preservation and distribution of water resources, ensuring appropriate policy and legislation as well as streamlining the institutional structure for water management amongst all water-related agencies and government departments. It addresses the degradation of Malaysia’s rivers and their conservation.
115. The National Policy on the Environment 2002 aims at achieving continued economic, social and cultural progress in Malaysia and enhancing the quality of life of its people, through environmentally sound and sustainable development. One of its objectives is to ‘conserve Malaysia’s unique and diverse cultural and natural heritage with effective participation by all sectors of society’. A broad-based strategic approach is adopted to promote environmental soundness through research and development, economic efficiency, social equity, responsibility and accountability. It emphasises the need to ensure that environmental costs and benefits are factored into the appraisal and assessment of development projects and land use plans. It also states that expenditures on environmental conservation will be encouraged in order to reduce future mitigation costs, and that incentives will be utilised to promote environmentally-friendly industries, products and services.
116. The Wildlife Conservation Act 2010 is the primary legislation protecting wildlife in Peninsular Malaysia. Following a six-month amnesty period, the law came into force at the end of June 2011. This Act replaced the Protection of Wildlife Act 1972, and allows for maximum fines up to 33 times higher for some offences, and at least one night in prison as a mandatory punishment for several offences. The Act includes “presumptions under the law” against practices such as the use of snares. The mere possession of a snare automatically implies the intention to hunt, trap and/or kill wildlife which is punishable by a fine of up to MYR 100 000 and a prison term of up to two years. Traditional medicines, products or food that claim to contain parts or derivatives of any protected species will also result in heavy fines and prison terms for those caught in possession of such items. Under the new law, the burden of proof lies with the trader. Another provision of this law is the revocation, non-renewal and prohibition of permits to a convicted offender for a period of up to five years. Under this law, the Orang Asli are permitted to hunt 10 species, as specified in the Sixth Schedule of the Act. These are wild boar, sambar deer, lesser mouse deer (*Tragulus javanicus*), pig-tailed macaque, silvered leaf-monkey

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<sup>89</sup> Ministry of Science, Technology and the Environment, 1998. *National Policy on Biological Diversity*. Malaysia: Institut Terjemahan Negara Malaysia Berhad

(*Trachypithecus cristatus*), dusky leaf-monkey (*Trachypithecus obscurus*), Malayan porcupine (*Hystrix brachyuran*), brush-tailed porcupine (*Atherurus macrourus*), white-breasted waterhen (*Amaurornis phoenicurus*) and emerald dove (*Chalcophaps indica*). Species listed in this Schedule shall not be sold or exchanged for food or for monetary gain.

117. The International Trade in Endangered Species Act 2008 was passed by Parliament in an attempt to control international commercial trafficking of wildlife in line with provisions outlined by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The implementation of CITES at a national level is governed by this Act. Though Malaysia acceded into the Convention in 1978, the Protection of Wildlife Life Act 1972 was earlier used to regulate wildlife trade. This all changed in 2008, when the country, led by the DWNP, enacted the International Trade in Endangered Species Act 2008. With the new Act in place, offenders are now subject to much harsher penalties, particularly if it involved illegal international trade involving totally protected species, or Appendix I-listed species under CITES. This law, a national legislation, empowers a wide array of agencies to enforce this law.
118. The National Tiger Conservation Action Plan (NTCAP) for 2008-2020 was approved by the National Biotechnology and Biodiversity Council and forms part of the 10<sup>th</sup> Malaysia Plan, with a goal that ‘tiger populations are actively managed at carrying capacities across the three landscapes within the CFS and connected with functioning corridors’, with ‘about 1,000 wild tigers surviving on wild prey in the Central Forest Spine by the year 2020’<sup>90</sup>. It identifies four objectives to achieve this goal: 1) strictly protected priority areas in landscapes connected with corridors; 2) effective and long-term protection of tigers and their prey; 3) ecologically sound land-use, compatible with tiger conservation outside the priority areas; and 4) application of science in monitoring the efficacy of conservation actions and improving knowledge of tiger ecology. The Plan sees sustainable financing as a crosscutting theme and an enabling condition for mitigating HTC and reducing poaching, and includes as a short-term action that “community-based mechanisms and sustainable financing means to reduce HTC” will be identified and implemented at the local level.
119. A Common Vision on Biodiversity 2009 was endorsed by the National Biotechnology and Biodiversity Council (now the National Biodiversity Council (NBC)). The Common Vision outlines a three-pronged approach to biodiversity management: a) Strengthening the Protected Areas System; b) Landscape Management for Biodiversity; and c) Mainstreaming of Biodiversity<sup>91</sup>. The document’s emphasis on the need to overcome the under-valuation of biodiversity in markets, and to introduce financial and economic mechanisms which will provide funding and incentives for conservation, is entirely consistent with the development of PES.
120. The Economic Transformation Programme 2011-2020 articulates a New Economic Model committed to the stewardship and preservation of the natural environment. Specifically, it states that the government will ensure that environmental resources are properly priced and that the full costs of development should be understood before investment decisions are made.
121. National Timber Industry Policy 2009 guides the development of Malaysia’s timber industry with a longterm (by 2020) target of generating MYR 53 billion in export revenue. Some of its aims include the following: raw materials to be managed in a sustainable manner in compliance

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<sup>90</sup>DWNP, 2008. *National Tiger Action Plan for Malaysia*. Kuala Lumpur: Department of Wildlife and National Parks Peninsular Malaysia

<sup>91</sup>MNRE. 2008. *A Common Vision on Biodiversity in Government and the Development Process*. Putrajaya: Ministry of Natural Resources and Environment



with the domestic laws and regulations; the supply of logs to the domestic market to be given priority over external markets in order to support domestic timber product manufacturers; maximise the use of wood residues from the forest as well as from the activities of the timber industry; promote global recognition of MTCC certification of tropical timber; and formulating government policies to mandate the use of certified quality timber that are from legal and sustainable sources of timber in government projects.

122. The Third National Agriculture Policy 2006 set the strategic directions for agricultural development to the year 2010. These focus on new approaches to increase productivity and competitiveness, deepen linkages with other sectors, venture into frontier areas as well as conserve and utilise natural resources on a sustainable basis. The policy makes 'sustainable management and utilisation of resources' the guiding principle in pursuing agricultural and forestry development. It provides for strengthening rules, regulations and incentives to encourage environment-friendly agricultural and forestry practices and to minimise the negative impact of these activities on the environment. The National Ecotourism Plan 1996 was developed in order for ecotourism to better contribute to the achievement of national objectives such as those laid out in the rolling five year plans; supporting sustainable development as well as conservation within Malaysia. Some of the actions within the Plan include (among others); expand and improve management of a nationwide system of ecotourism areas; elaborate development and management plans for ecotourism areas; implement guidelines for ecotourism; establish a series of pilot ecotourism projects; establish additional ecotourism products at Taman Negara and other sites; establish and promote a consistent marketing strategy; ensure local community participation in ecotourism; and establish training and promote certification for ecotourism guides.
123. The Aboriginal People's Act 134 1954 allows for areas to be gazetted so as to both guard against alienation or occupation by others, and permit a certain exclusivity of land and resource use to Orang Asli communities, whereby no land within an Aboriginal area can be designated a WR. However, it also places restrictions on the transfer, lease, sale or allocation of land by community members, and does not specify any right over the revenues generated by the resources on that land.
124. The Strategic Plan for the Development of Orang Asli 2011-2015 includes six main objectives for the advancement of the Orang Asli: to develop a Human Development Model; to inject or motivate economic activities and industry within the Orang Asli with the spirit to succeed and to have competitive edge and collective resilience; to increase access to basic amenities and infrastructure; to improve the quality of life of Orang Asli; to research, conserve and promote their traditional knowledge and heritage; and to improve service delivery systems and good governance.
125. The National Policy on Climate Change 2009 serves as the framework to mobilise and guide government agencies, industry, communities as well as other stakeholders and major groups in addressing the challenges of climate change in a concerted and holistic manner. Emphasis is on strengthening capacity of the nation to reduce its vulnerability to climate change whilst promoting mitigation responses that also enhance sustainable development, including ecosystem based adaptation responses.

### **Conventions**

126. The Federal Government of Malaysia is a signatory to several international conventions related to the conservation of nature. As a signatory to the Convention of Biological Diversity (CBD)

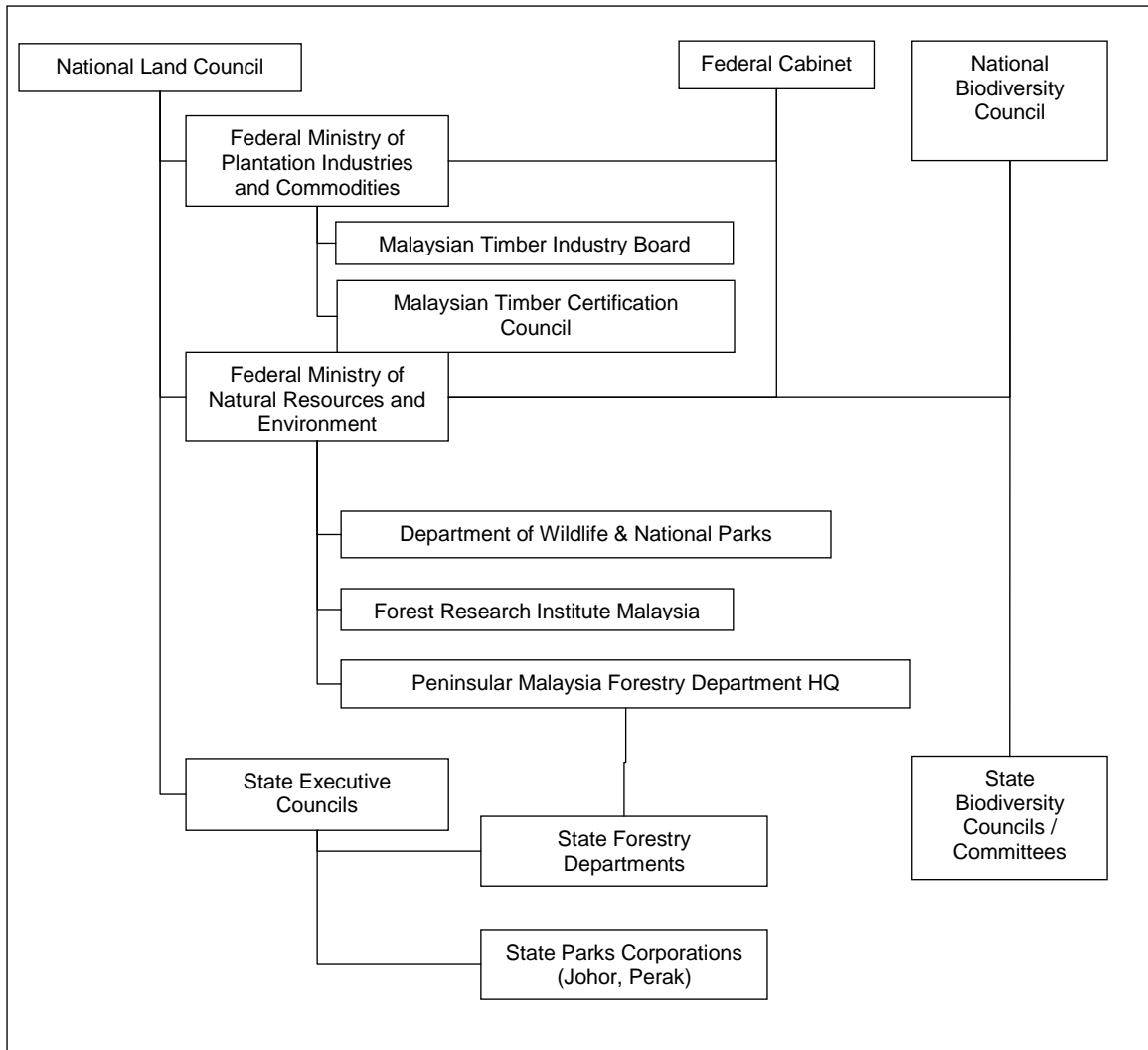
(1992), Malaysia has made a commitment to maintain at least 50% of forest cover in perpetuity. It has also achieved the 2010 target of conserving 10% of its national biodiversity. Malaysia's Second and Third National Reports to the CBD consider incentive measures and financing as medium priorities; they also acknowledge that the lack of financial resources and weak mainstreaming of biodiversity concerns into the activities of other sectors pose major obstacles to conservation and sustainable use.

127. As a signatory to CITES (1973), nearly 35,000 species of plants and animals have been accorded protection in the form of regulating trade in these species. Other conventions Malaysia is signatory to include the United Nations Framework Convention on Climate Change (UNFCCC) 1992, the International Tropical Timber Agreement (ITTA) 1994, and the Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) 1971; Malaysia has also signed the St. Petersburg Declaration on Tiger Conservation adopted by the range states at the Global Tiger Summit in November 2010.

## ***INSTITUTIONAL AND GOVERNANCE CONTEXT***

### **The Federation and State Governments**

128. Malaysia follows a federal governing system with divided responsibilities for federal and state governments. For example, land is a state matter; the Federation has no authority over land except under Articles 83 to 86 and Article 88, which deal with the reservation and disposition of land held for federal purposes. However, the Federation may legislate to the extent of ensuring common policies over land matters and a common system of land administration, under Article 76 (4) of the Federal Constitution, though such legislation again has to be ratified by the respective states.
129. Regarding land and forestry matters, the federal government (the ministry or ministries with responsibilities for timber and forestry) provides technical advice on forest management and the development of wood-based industries and trade; the 13 states are then empowered to enact their own laws and formulate policies on land and forestry matters. Other relevant matters such as agriculture, rivers and water resources, land and soil conservation and local government also come under the State List. Most of the communication and transport sector, as well as water supply and tourism, come under the Federal List; the protection of wild animals, town and country planning, drainage and irrigation and the rehabilitation of land come within the Concurrent List.
130. The institutional arrangement for forestry matters is illustrated in Figure 6 below.



**Figure 6. The Institutional Framework for Forest Area Management in Peninsular Malaysia**

131. The National Land Council (NLC) is responsible for the coordination of and guidance for planning, management, development and use of land in Peninsular Malaysia (including forest resources). It was set up in order to ensure that national policies would be implemented uniformly across states, since each state has authority over its own land. The NLC also acts as a point of contact for the federal and state governments for discussions and problem solving regarding land policies, administration and management, in order to combat a somewhat disjointed governance system. The NLC decided that each state of Peninsular Malaysia would be its own Forest Management Unit.
132. The Department of Town and Country Planning, Peninsular Malaysia, provides technical advice to the state and local authorities on spatial planning matters. The NPPC, chaired by the Prime Minister and comprising the chief ministers of each state, oversees coordination of spatial planning in Peninsular Malaysia.
133. The National Forestry Council was established by the NLC in 1972 and coordinates forest management policies between federal and state governments, with membership of the heads of forestry departments from each state in Malaysia and relevant federal ministers. It developed the National Forestry Policy in 1972 in order to harmonise the various individual state policies. All decisions made within this council must be endorsed by the NLC.

134. The National Biodiversity Council (NBC), which was established in 2002 as the National Biodiversity and Biotechnology Council, is the highest-level decision-making body of the government pertaining to biodiversity management. The Council is chaired by the Prime Minister and comprises 10 Cabinet Ministers and 13 State Chief Ministers. However, this Council has not met for several years.
135. The Ministry of Natural Resources and Environment (NRE) is a federal government ministry, responsible for biodiversity conservation, wildlife and forest management, as well as REDD+ readiness, and houses key departments such as FDPM, the DWNP, the Legal Division and the Department of Irrigation and Drainage, which is an important stakeholder of water resource management in the CFS. It has been appointed as the lead implementing agency for the CFS, and a National CFS Steering Committee has been established, composed of representatives from state governments, agencies and NGOs, to oversee the coordination and implementation of the CFSMP. Within this steering committee a CFS Technical Committee has been formed, headed by the Director-General of FDPM. NRE also supervises statutory organisations such as FRIM, which is an important co-implementer of the CFS-wide biodiversity and ecosystem services monitoring activities; and the National Hydraulic Research Institute of Malaysia. The figure below shows the institutional structure for the management and implementation of the CFSMP.
136. The Federal Department of Wildlife and National Parks (DWNP) was one of the earliest established institutions in the country. With laws dating back to the 1800s, the country's first WRs created in early 1900s, and the formation of the department in 1937 (the then Game Department), it has undergone reformation over the last century. Today it remains Peninsular Malaysia's lead agency tasked with managing and protecting wildlife. The DWNP manages 35 terrestrial National Parks and wildlife reserves in Peninsular Malaysia, covering 714,253 ha. The department is responsible for protected area management, wildlife management, law enforcement activities, and issuing licenses and permits for all activities involving protected wildlife species including the CITES permits. It also deals with human wildlife conflict cases and is involved in planning and development of sustainable ecotourism products. According to its mission, "DWNP is to lead the integration and implementation of conservation programme and sustainable management of the nation's biodiversity efficiently and effectively."
137. DWNP is comprised of nine divisions: a) Protected Area, b) Law and Enforcement, c) Biodiversity Conservation, d) Ex-situ Conservation, e) Ecotourism, f) Management, g) Institute of Biodiversity, h) Zoological Parks, and i) Consultancy. The Protected Area Division oversees the planning and management of the national wildlife PA network, while the Law and Enforcement Division is entrusted to enforce the Wildlife Conservation Act 2010 and the CITES Act 2008. The implementation of conservation and monitoring programmes within the PAs are the responsibility of Biodiversity Conservation Division, whereas the planning and implementation of sustainable ecotourism development projects in PAs such as National Parks and wildlife sanctuaries are the domains of the Ecotourism Division.

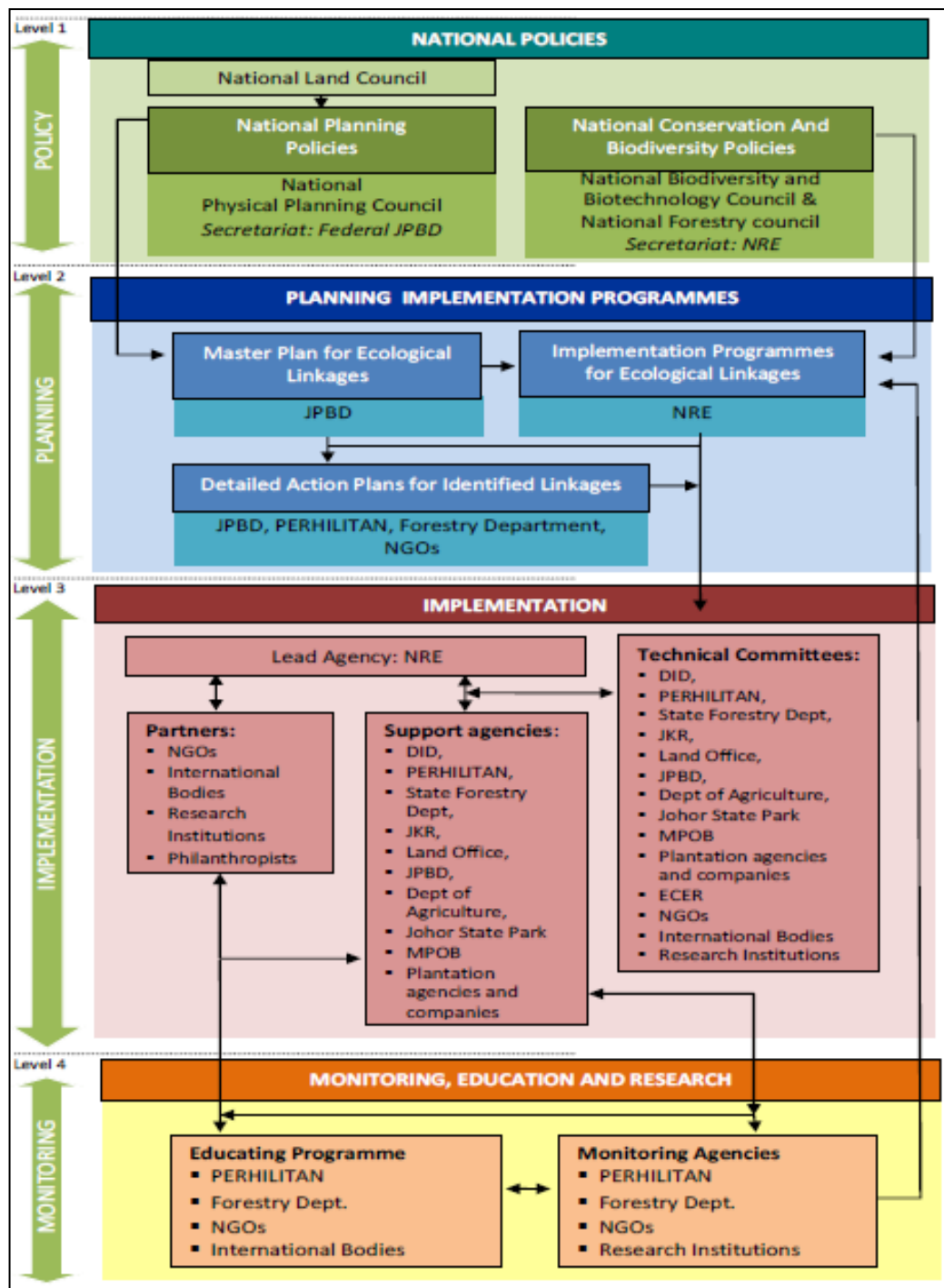


Figure 7. The Institutional Structure for the Management and Implementation of the CFSMP

138. The Wildlife Crime Unit (WCU) was established in 2005 and is managed by the DWNP specifically to deal with enforcement issues. It serves to enforce, monitor and coordinate all enforcement activities, including coordination with other law enforcement agencies through information exchange and joint operations, in order to strengthen enforcement, border control, gather information and conduct investigations. This WCU does not overlap with state enforcement units. The WCU is divided into zones: south, east, central and north. The Unit has been established at 12 permanent border posts and has around 40 staff. The granting of licences and permits for hunting and trade of wildlife species is at the behest of the Minister and of the Director General of the DWNP, which comes under the purview of the ministry.

139. The Malaysian Wildlife Law Enforcement Network (MY-WEN) was established by the federal government, as a contribution to the Association of South-East Asian Nations Wildlife Enforcement Network (ASEAN-WEN). The ASEAN-WEN is a regional platform aimed at improving effectiveness of wildlife crime law enforcement through collaboration between countries. The key issues to be tackled include: the need to strengthen enforcement of CITES and other legislation for wildlife protection, and to address the serious problem caused by illegal domestic and international trade in wild fauna and flora.
140. The Institute of Biodiversity (IBD) was established in 2004 to provide training to DWNP staff and to develop and conduct research on the nation's biodiversity resources. The establishment of IBD by the government is a long-term strategy under the National Biodiversity Policy. IBD also plays an important role to ensure DWNP staff receives sufficient training in their daily job towards effective delivery services. To achieve these roles, IBD carries out 3 major programs related to wildlife conservation: a) training, b) awareness creation, and c) collaborative research. While the IBD offers a range of training and educational courses there will be a need to review and upgrade existing content, identify new areas where courseware is needed, particularly PA finance, organise the courses into formal framework curricula, identify appropriate faculty and partners (including more at the state level), and incorporate a more 'demand driven' approach to its work.
141. The Economic Planning Unit (EPU) of the Prime Minister's Department is a federal government agency and is responsible for economic and development planning, as well as development of strategies and policies in determining financial allocations for the various sectors of the national economy. EPU compiles the 5-year Malaysia Plan, and reviews and determines development budgets under the plan. In 2003, the Natural Resources and Environment Section was established within the EPU, to lead and coordinate the national environmental and natural resources affairs with better efficiency and effectiveness. This section is the focal point for bilateral and multilateral co-operation in the field of environment, and liaises with such agencies as the Danish International Development Assistance (DANIDA) Environmental Development Cooperation programme; Green Partnership Programs from the Government of Japan, technical assistance programmes from UNDP, Global Environment Facility (GEF) and others. Each state has its own state EPU.
142. The Forestry Department Peninsular Malaysia (FDPM) is responsible for the management, planning, protection and development of PRFs in accordance with the National Forestry Policy and National Forestry Act 1984. FDPM has thirteen divisions and one unit. Respective state forestry departments that report to the various state executive councils on operational matters but get broad policy direction from the NLC and technical advice from FDPM carry out actual management of the PRFs.
143. The Forest Research Institute Malaysia (FRIM) was established in 1929 as a research unit of the FDPM. It is now a statutory body responsible for research on all aspects of forestry and forest products. Such research includes that of ecology and silviculture, wood properties, forest products and, more recently, genetic engineering; all aimed at increasing the efficiency and sustainability of forestry in Malaysia.
144. The Department of Environment (DOE) is a federal authority established in 1975. Its vision is to conserve the uniqueness, diversity and quality of the environment, and is responsible for the prevention, control and abatement of pollution in the country. As part of this, it is the authority responsible for the approval and monitoring of Environmental Impact Assessments (EIAs) in development project planning.

145. The Malaysian Timber Council was established in 1992 in order to drive forward Malaysia's timber industry as a global competitor. Some of its main objectives are to expand market opportunities for timber products, support skills development, supplement the raw materials supply for timber processing industries and provide information services to the industry.
146. The National Committee on Sustainable Forest Management was established in 1994 in order to ensure that all forest resources were managed to international best practices, measured using the Malaysian Criteria and Indicators for Sustainable Forest Management, based on the criteria and indicators of the International Tropical Timber Organisation (ITTO). These were then adopted by the Malaysia Timber Certification Council.
147. The Ministry of Energy, Green Technology and Water has spearheaded the Sustainability Achieved via Energy Efficiency program to improve energy efficiency in Malaysia, by creating a series of environmental-fiscal reforms that aim to provide businesses, producers and consumers with incentives for sustainable environmental management.
148. The Ministry of Culture, Arts and Tourism 1990 (formerly the Ministry of Culture and Tourism) is responsible for planning, implementing and coordinating strategic policy decisions regarding the promotion of tourism and ecotourism in Malaysia. It also manages development funds to provide basic infrastructure facilities for improving access to ecotourism projects as well as some amenities.
149. Jabatan Kemajuan Orang Asli (JAKOA) was set up in 1954 and is the federal government agency responsible for overseeing the affairs of the Orang Asli. It aims to achieve the socio-economic development of the Orang Asli while also retaining traditional values. JAKOA recognises the need for installing good governance, i.e. efficiency and transparency in all stages of management, and it is now adopting a multi-agency approach to address development challenges.
150. State governments in the CFS landscape are critical stakeholders in ensuring the security of the priority areas and corridors in their respective state, since forestry policy formulation and implementation is the responsibility of the state forestry departments rather than the FDPM. The key state government agency is the state EPU which oversees the development direction of the state. Within each state, a CFS Technical Committee has been established in order to manage the implementation of the CFSMP.
151. The Johor National Parks Corporation (JNPC) is a state government-owned corporation, set up in 1989, which manages the four terrestrial PAs and one terrestrial/marine PA in Johor that are designated as "National Parks" (although they are owned and managed by the state government). The corporation is governed by a Board, chaired by the Chief Minister, while the overall administration is the responsibility of the Director of National Parks (Johor). There is also a Technical Advisory Committee comprising members from relevant federal and state government agencies and NGOs to advise the corporation on technical matters.
152. The Perak State Parks Corporation (PSPC) manages two parks, the Royal Belum State Park, a Category II park covering 117,500 ha and Pulau Sembilan State Park covering 182 ha. PSPC has a similar organisational set up as JNPC where it is governed by a Board and supported by a Technical Advisory Committee. Administratively, PSPC is divided into four divisions, including a) Development and Marketing, b) Management Services, c) Education and Research, and d) Enforcement.
153. The International Criminal Police Organisation (INTERPOL) is an intergovernmental

organisation that aims to increase cooperation between law-enforcement agencies on an international level. It facilitates communications and assists with database management; it also tracks criminal movements across the world. The INTERPOL Wildlife Crime Working Group initiates and leads a number of projects to combat the poaching, trafficking, or possession of legally protected flora and fauna. The INTERPOL Wildlife Crime Working Group brings together specialised criminal investigators from around the world to work on project-based activities on an international level. In Malaysia INTERPOL works with the Police, DWNP, MY-WEN and TRAFFIC.

### ***CIVIL SOCIETY AND DEVELOPMENT PARTNERS***

154. The Malaysian Timber Certification Council (MTCC) was created in 1998 in order to develop and operate a voluntary and independent national timber certification scheme in Malaysia (the Malaysian Timber Certification Scheme (MTCS)). The MTCS has been endorsed by the Programme for the Endorsement of Forest Certification (PEFC) schemes, and uses the Malaysian Criteria and Indicators to set the standards for participating forest management units (FMUs) in sustainable forest management. The main principles for Forest Management Certification consider the legal and customary rights of indigenous people to their lands; social and economic sustainability; the conservation of the forest's biodiversity and ecosystem values; the necessity for monitoring forest condition as well as management practices and impacts; the point that high conservation value forests should maintain the attributes which define them. The Council processes applications for certification of both forest management (to FMUs) and chain-of-custody (to manufacturers and exporters). It works with independent assessors to ensure transparency and compliance to its regulations.
155. The Malaysian Conservation Alliance for Tigers (MYCAT) was formed in 2003 by the Malaysian government. MYCAT is an alliance of conservation organisations, which include the MNS, WWF Malaysia, WCS Malaysia Programme and TRAFFIC South-East Asia (the Wildlife Trade Monitoring Network). With the overarching objective of saving the Malayan tiger in the wild, MYCAT provides a platform for communication and coordination towards joint implementation of the NTCAP and is an important stakeholder and possible collaborator to the project. MYCAT hosts a nationwide 24-hour Wildlife Crime Hotline and conducts the CAT Walks and Trailblazer programme that involves carrying out regular recreational activities for the members of public in the Sungai Yu Tiger Corridor. This initiative helps to ensure that there is a regular presence on the ground, with an overall aim of deterring poaching and encroachment.
156. WWF Malaysia has supported tiger conservation since 2002 through its Tigers Alive programme. This project currently focuses on the Belum-Temengor Forest Complex and encompasses conservation initiatives such as ecological corridors, patrolling, land-use monitoring, community engagement and education, and wildlife monitoring. It is an important stakeholder/collaborator and possible co-implementer of landscape level actions on the ground, especially in Belum-Temengor.
157. TRAFFIC SouthEast Asia is part of a global wildlife trade monitoring network working to ensure that trade in wild plants and animals does not threaten conservation of nature. TRAFFIC has implemented selected initiatives looking at illegal hunting and trade of wildlife throughout Malaysia and is working closely with the DWNP and the NRE and its Legal Division in addressing enforcement related issues, including those involving tigers and tiger prey.



TRAFFIC's conservation programme in the Belum-Temengor Forest Complex began in 2008. TRAFFIC South-East Asia will be an important stakeholder and possible co-implementer of some activities under the wildlife monitoring system strengthening component of the project, in particular the intelligence-based national wildlife trade surveillance system strengthening linked to the international wildlife trade enforcement network.

158. The Malaysian Nature Society (MNS) has been active in all three focal landscapes of the proposed IC-CFS project. It was one of the main drivers behind the creation of Belum-Temengor's State Park, as a result of two scientific expeditions that were conducted in 1998 and 1990 respectively, and has since been actively campaigning to stop logging in the rest of the landscape. MNS Selangor Branch is one of the supporters of the MYCAT Citizen Action for Tigers Walks in the Sungai Yu Tiger Corridor. MNS was also the main party responsible for the creation of the Endau-Rompin National Park which was the result of an expedition and campaign in the 1980s.
159. The Wildlife Conservation Society (WCS) is a partner in a tiger conservation programme in the Endau-Rompin forest landscape, together with JNPC, DWNP, State Forestry Departments, Royal Malaysia Police and Kulim (M) Bhd., which involves systematic monitoring of tiger populations, prey occupancy surveys, enforcement activities and some environmental education activities. WCS also monitors and conducts assessments on HEC cases in the Endau-Rompin forest landscape and provides assistance to set up community-based early warning systems and elephant response teams.
160. The Smithsonian Conservation Biology Institute has a long-standing relationship with partners in Malaysia, including through collaborations with DWNP on diverse conservation and science programmes focused on high-profile species of Malaysia, including tigers, elephants, sambar deer and gaur. It has supported capacity building in subject areas including conservation and wildlife management techniques, environmental education and zoological biology. In recent years, Smithsonian convened and facilitated workshops including *Cross-sectoral Leadership Forum for Mainstreaming Priority Tiger Habitats* in 2012, and *Pilot National Program Workshop* to facilitate implementation of the National Tiger Recovery Plan in 2013.

### ***THE PRIVATE SECTOR AND COMMUNITY COOPERATIVES***

161. There are several private sector companies situated in the three landscapes (outside PAs). These range from companies involved in extractive industries such as timber, mining and agriculture to those involved with power generation, road maintenance and tourism. Many of these companies are linked to the various state governments and all are operating with permits authorised by the states. Both Endau-Rompin and Taman Negara have interests from tourism and iron-ore mining companies; in Belum-Temengor, there is a wide variety of interests such as the logging company Perak ITC Sdn. Bhd., agricultural companies such as the State Agricultural Development Corporation and the Rubber Industry Smallholders Development Authority (RISDA); tourism companies such as MK LandBhd; and the Tenaga Nasional Berhad power company.
162. There have been several successful community cooperatives in Malaysia that over the last fifty years have succeeded in bringing many poor communities out of poverty. These schemes include the government-backed Federal Land Development Authority (FELDA) that has recently been privatised and listed publicly as FELDA Global Ventures Berhad. Other similar schemes include RISDA and the Federal Land Consolidation and Rehabilitation Authority.

However, in many instances, such as in the case of several Orang Asli villages in the focal landscapes, the Orang Asli only receive a monthly dividend from the scheme that is operating on their land. The Orang Asli are usually not involved in management decisions and often foreign labourers are preferred by the scheme managers to work on the plantations.

163. The table below shows the successful community-based natural resource management cooperatives set up during the last 10 years amongst the Orang Asli.

**Table 8. Current Orang Asli CBNRM Cooperatives in Peninsular Malaysia<sup>92</sup>**

Project/Community	Objectives	Post-project
Co-Management in Protected Areas: Rehabilitation of Resources Involving Indigenous Communities 2007-2008 Funded by DANIDA Implemented by local community based organisations (CBOs), JOAS-CBNRM, MENGO	<ol style="list-style-type: none"> <li>Promote idea of co-management</li> <li>Develop community based monitoring system for biological diversity within PA</li> <li>Document learning and best practices of co-management</li> <li>Sensitise communities, NGO, government agencies towards the concept of co-management</li> </ol>	<ol style="list-style-type: none"> <li>Strong organisation structure and local support</li> <li>Networked within Indigenous CBOs and NGOs through JOAS</li> <li>Project sustained</li> </ol>
Local Community Based Eco-Tourism and Conservation Training among Indigenous of Ulu Groh 2002-2005 Funded by UNDP SGP Implemented by MNS, SEMAI, Perak Department of Forestry, JHEOA, Tourism Action Committee of Perak	<ol style="list-style-type: none"> <li>Introduce ecotourism and conservation training to the indigenous Semai community to conserve and sustainably manage their natural resource and forests</li> <li>Reduce rate of cultural erosion and increase appreciation for Semai culture and identity within their community</li> </ol>	<ol style="list-style-type: none"> <li>Received additional funding under the EC-UNDP SGPPTF (2006-2007)</li> <li>Received grant from CBNRM Facility (DANIDA) in 2009</li> <li>Received corporate finding</li> <li>Managed to win conflict against private company encroaching into their site</li> <li>In 2010 Perak Department of Forestry recognised the <i>Rafflesia</i> sites as high conservation-value forests</li> <li>Strength in CBO structure, capacity building and support from community</li> <li>Project sustained</li> </ol>
Micro-Hydro Project Kg Rambai Hulu Langat 2010-2012 Funded by GEF SGP, Shell, Selangor State government Implemented by local CBOs, Tonibong, JOAS	Hydro-electric project (5Kw)	<ol style="list-style-type: none"> <li>Network with local support</li> <li>Project sustained</li> </ol>
Micro-Hydro project, Kg. Sungai Rellang 2012 Funded by GEF SGP Implemented by local CBO, UIAM, Tonibong, JOAS	Hydro-electric project (1.5Kw)	<ol style="list-style-type: none"> <li>Sharing experience with other members of network</li> <li>Project sustained</li> </ol>

<sup>92</sup> Taken from results of PPG study of indigenous communities

## SECTION 1B: BASELINE COURSE OF ACTION

### PART 1.4: Threats to Biodiversity

#### *THREATS TO THE BIODIVERSITY OF PENINSULAR MALAYSIA*

164. The key threats to Peninsular Malaysia's globally significant terrestrial biodiversity and their root causes and impacts are summarised below.

##### **Forest loss: caused by conversion to agriculture, planted forests and settlement**

165. At the turn of the 19<sup>th</sup> Century, primary (unlogged) rainforest covered over 90% of Peninsular Malaysia. Although present forest covers 45% of the Peninsula, only 9.8% of 13.3 million ha of the land area is intact primary forest. The main current driver of this forest loss is conversion, primarily to planted forests.

166. Habitat loss in the highlands is also occurring due to active land development activities, especially in hill stations. The main vectors of these pressures include commercial agriculture and tourism, which lead to peri-urban development in ecologically sensitive areas. The rate of deforestation has gradually fallen as lowland forest cover has declined and industrialisation and the services sector have developed. However, the residual effects of past habitat loss combined with continuing forest fragmentation due to construction of roads, pipelines and railways, and conversion to perennial crop plantations (oil palm and rubber), although all essential for Malaysia's economic development, pose a threat to biodiversity when not planned and managed carefully.

167. Furthermore, forest loss severely undermines the quality and quantity of ecosystem services such as water provision and regulation, soil conservation and carbon sequestration. A recent analysis of land use change and water flow and quality data from 1971 to 2005 provides evidence that there is a strong correlation between the base flow in CFS and forest cover above 1,000 m of forests. There is also a clear correlation between the sedimentation loads and forest cover.

##### **Forest fragmentation: caused by increasing forest conversion and the construction of infrastructure**

168. Due to habitat conversion and infrastructure development, the last remaining forests of Peninsular Malaysia have become increasingly fragmented, as shown in Figure 7.

169. The loss of connectivity between forest patches results in reduced movement of animal species, particularly of large mammals, which limits the amount of resources available to them and increases their genetic isolation. Fragmentation particularly affects large mammals such as tigers, which require a habitat block (under strict protection) of at least 100,000ha to support a viable population which includes six breeding females<sup>93</sup>. Fragmentation also increases the likelihood of HWC as animals attempt to move through settlements between patches.

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<sup>93</sup> Karanth and Stith, 1999. In: DWNP, 2008. *National Tiger Conservation Action Plan 2008-2020*. Peninsular Malaysia: Department of Wildlife and National Parks.

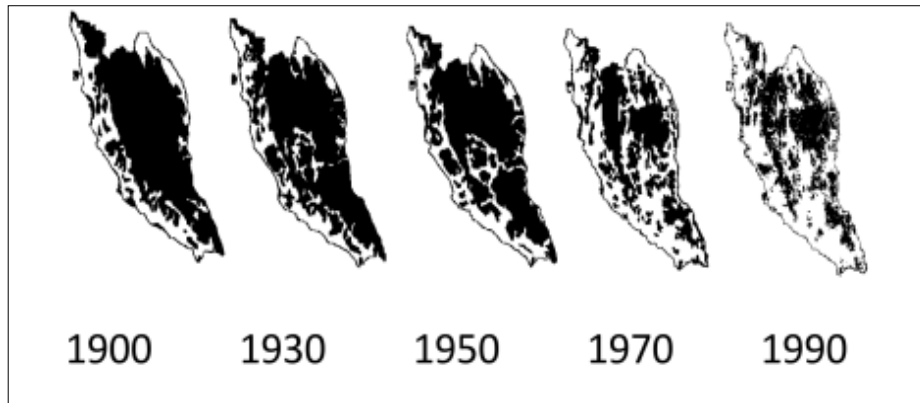


Figure 8. Forest Fragmentation in Peninsular Malaysia between 1900 and 1990<sup>94</sup>

### **Forest degradation: caused by the edge effect of fragmentation and the illegal harvesting of forest resources**

170. Forest fragmentation increases the risk of degradation through the ‘edge effect’, whereby the outer part of the forest is exposed to a different climate from the interior, and these differences, such as temperature and wind exposure, for example, result in changes in species composition; and increased rates of tree mortality and fire susceptibility (and thus indirectly increased carbon emissions)<sup>95</sup>
171. Many patches of relatively undisturbed natural habitats on the peninsula are effectively “islands in a landscape” characterised by transformed and/or degraded ecosystems. For example, extensive tree-crop monocultures (predominantly of rubber and oil palm) or agricultural land surround many surviving high-quality lowland forest areas; in addition to causing the edge effect, this compromises the integrity of adjacent protection forest through the creation of access roads and logging trails that facilitate encroachment (land clearance for agriculture and settlements), the illegal harvesting of forest products and poaching, as elaborated on below. This can reduce the biodiversity of the forest. A degraded habitat and loss of keystone species can lead to an ecological cascade whereby species richness can decline significantly.

### **Wildlife and forestry crime**

172. Although large-scale unlicensed logging is not regarded as a major threat, unlicensed encroachment (land clearance for agriculture and settlements), poaching and the illegal collection of non-timber forest products are viewed as growing pressures. These activities have the danger to lead to a decline in the productive capacity of the forest and also the ecosystem services value of the landscape. Overharvesting of forest produce and the over-hunting of wildlife has the danger of resulting in “empty forests” whereby the forest exists but it is vastly impoverished in terms of biodiversity.
173. Agarwood, or gaharu, of the genus *Aquilaria*, is native to South East Asia and is particularly threatened by illegal harvesting. Used for medicinal and spiritual purposes, it is a rare species and therefore fetches a high price, making it an attractive resource to harvest for trade. As a result of its overharvesting, in 2004 all *Aquilaria* species were listed as Appendix II (potentially

<sup>94</sup> Jomo et al, 2004 and Stibig et al, 2002, in: Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

<sup>95</sup> Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

threatened) species by CITES. In Peninsular Malaysia gaharu is under serious threat but so far FDPM has been unable to stem the influx of foreigners illegally harvesting it from the forests.

174. Poaching is widespread across Malaysia. It is a county rich in biodiversity, with many charismatic species such as tigers and bears. A wide range of these species is targeted for a variety of end-uses, from medicine to decoration. Illegal wildlife trade occurs both locally and internationally, as evidenced by the seizures of smuggled wildlife throughout the country, at border crossings and regional markets. In particular, the long-term survival of the tiger is threatened by the illegal trade in tiger skins, bones and other body parts used in traditional medicine, as well as the poaching of tiger prey such as the sambar deer; tiger populations have been decimated by poaching in many parts of their range. Between 2010 and 2012, Malaysia and Thailand made seizures amounting to 72 tigers (36 tigers each)<sup>96</sup>, a rate which will put the tiger at serious risk of extinction if it continues. In addition, the poaching of fish from rivers in PRFs has led to a severe loss of fish stocks in many areas. The forestry department urgently needs to upgrade its capacity for enforcement, investigation and prosecution
175. In the states of Pahang, Perak and Johor, the number of wildlife offences recorded in 2010 were 264, 354 and 305, respectively. However, the true scale of poaching is difficult to estimate since the detection rate of wildlife hunting and trade is generally low. In addition, there is currently limited monitoring or systematic estimation of remaining populations for wildlife species such as tigers and elephants; law-enforcement efforts are currently not effective enough in deterring poachers, although the legal framework for wildlife crime is strong. If poaching continues it is likely to both lead to species extinctions and to impoverished forests with reduced capacity for ecosystem functions.

**Human-wildlife conflict: caused by decreasing areas of natural habitat and increasing contact between animal and human populations**

176. With an increasingly human-dominated landscape, whether in terms of settlement or agriculture, and corresponding increasingly fragmented forest habitat, HWC is increasing. There were 40 cases of tiger attacks between 1991 and 2005 with at least 11 fatalities, and at least 13 tigers were killed between 1991 and 2003; although the shoot-to-kill policy was abolished in 1980, the killing of tigers still occurs. If human fatalities continue, tiger fatalities are likely to also continue. This has severe implications for the rest of the tiger population, and the Malayan tiger subspecies as a whole, if forest landscapes continue to be converted for human use.
177. The increase in incidences of HEC, as is currently occurring in the Endau-Rompin forest landscape, is a result of significant loss and fragmentation of forest habitats, and has severe implications for wild elephant populations. The killing of 97,200 macaques in 2011<sup>97</sup> has similar implications for these mammals, particularly if the rate continues to increase. If HWC is not prevented nor mitigated more effectively, it could significantly threaten biodiversity.

**Climate change**

178. Similarly to other parts of the globe, Malaysia is experiencing a warming trend. The impacts of temperature and precipitation changes through climate change can have severe impacts on forest biodiversity; increased intensity of precipitation and drought can destroy habitats rapidly, leading to biodiversity loss. For example, in 1883 a hurricane hit parts of Kelantan and

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<sup>96</sup>Stoner, S.S, and Pervushina, N., 2013. *Reduced to Skin and Bones Revisited: An Updated Analysis of Tiger Seizures from 12 Tiger Range Countries (2000–2012)*. TRAFFIC, Kuala Lumpur, Malaysia.

<sup>97</sup>Murali, R.S.N. 2013. Uproar over macaque culling. *The Star/Asia News Network*, 18 Mar.

Terengganu in Peninsular Malaysia and devastated the forest; these events are likely to increase in frequency as the climate changes. Prolonged droughts in Sabah in 1986 and 1997-98, exacerbated by the El Nino phenomenon, led to significant forest fires.

179. Temperature changes may cause shifts in current ecosystems both latitudinally and altitudinally, meaning that species have to move to keep up with their optimal habitats. Fragmentation of forest habitats in Peninsular Malaysia will increase the risk of species extinction due to their reduced ability to move. The resulting combination of changes in climate and in species composition of ecosystems will increase the spread of disease among plant and animal species, further increasing the risk of biodiversity loss.
180. Other negative impacts of climate change in Peninsular Malaysia could include saltwater intrusion from sea level rise; reduced crop yields; erosion of shorelines; increased flood intensities; and decreased water availability. These impacts will indirectly affect forests in Peninsular Malaysia due to increased pressure on remaining resources; for example, failing crops could necessitate increased rates of conversion of habitat to allow for more production.

### ***THREATS TO BIODIVERSITY IN THE THREE FOREST LANDSCAPES***

181. The table below shows a summary of the threats faced by each of the three forest landscapes according to the results of the PPG studies (a further elaboration is given in Annex III).

***Table 9. Threats to Biodiversity in the Three Forest Landscapes<sup>98</sup>***

<b>Threats</b>	<b>Belum-Temengor</b>	<b>Taman Negara</b>	<b>Endau-Rompin</b>
<b>Forest loss</b>	Oil palm and rubber plantations are being set up either side of the highway on private land and in the Orang Asli reserves; vegetable plantations are also planned	Previous clearing of forest cover along the north and west edges of the park has created an ecological bottleneck that hinders wildlife movement	Rapid agricultural expansion, including, oil palm and fruit/vegetable plantations  An iron-ore mine is being set up in the buffer zone of the National Park
<b>Forest fragmentation</b>	A petrol pipeline and high speed train line have been proposed; plantations are causing fragmentation	A new highway is being built alongside the existing Federal Route 8. This also threatens the safe movement of wildlife	3,000ha oil palm plantation is located in centre of linkage between Mersing PRF and Lenggong Timur PRF;
<b>Forest degradation</b>	The state land along the East-West highway is vulnerable to logging	Non-PRF forests in the buffer zone of the park are subject to logging	Non-PRF forests in the buffer zone of the park and those in the wildlife reserves are subject to logging
<b>Human-wildlife conflict</b>	High rate of HEC, plus conflict with primates, tigers and bears	Minimal/not reported	Moderate rate of HEC, and increasing
<b>Illegal activities</b>	Poaching, agarwood harvesting and fish bombing is widespread	Poaching, agarwood harvesting and illegal tree felling, widespread along the west boundary of the park; illegal land clearing for rubber plantations, encroachment into the park and PRFs from the Federal Route 8	Poaching and agarwood harvesting is widespread, some Orang Asli land clearance has occurred inside the park

<sup>98</sup> Regional Planning Division, 2009. *CFSI: Master Plan for Ecological Linkages*. Peninsular Malaysia: Department of Town and Country Planning.

## PART 1.5: Analysis of Baseline Situation

### *LONG-TERM SOLUTION AND BARRIERS TO ACHIEVING THE SOLUTION*

182. The proposed long-term solution for Malaysia is sustainable land and forest management in the CFS landscape, which secures critical wildlife habitats, conserves biodiversity and secures flows of multiple ecosystem services. For this, there is a need to secure ecological connectivity between forest blocks and engineer a paradigm shift from site focused management (i.e. of PAs) to landscape management, which not only provides a viable tool for integrated land management but also offers cost-effective measures for achieving connectivity. Value-addition of the natural resources in the CFS is crucial in order to provide the incentive to manage the land in a less-intensive, more sustainable manner. This needs to be coupled with strengthened efforts to reduce poaching and the illegal trade of wildlife. However, reaching this goal depends on a favourable political and institutional environment. There are three main barriers to overcome in order to achieve this long-term vision:

*a. Inadequate framework for planning, compliance monitoring and enforcement for integrated forest landscape management:*

183. **Environmental governance system.** Under the Federal Constitution, land allocation and management are under the jurisdiction of state governments. Similarly, in terms of forestry administration, although guidelines and standards are set at the federal level, the state governments are empowered to enact laws and formulate policy on land and forestry matters and manage the resources. This framework has led to the disconnection of environmental governance. In addition, the EIA requirement introduced in 1987 under the Environmental Quality Act is constrained by the constitutional limits on federal agencies' jurisdiction with respect to forest management, which has resulted in a lack of federal and state coordination and control of the EIA approval process. For example, an application for a development project needing approval from the State Executive Committee requires input on environmental aspects from the DOE; at the same time the EIA needs to be completed, which also requires coordination by the DOE. This means that often the project may be approved by the state before it has been accepted according to the EIA, leaving the EIA redundant. Instead, the EIA should be carried out during the early stages of the project planning rather than at the state approval stage. In addition, the conditions within the EIA approval are not then followed up by the appropriate agency, due to lack of coordination and monitoring. Finally, although public participation is a compulsory part of the EIA process, in practice it is limited.

184. **Mainstreaming of biodiversity into development planning.** Land use and management decisions are made at the state level. With the exception of the recently developed Belum-Temengor Integrated Master Plan and landscape-level plans within the CFSMP, these decisions are often made with insufficient consideration to biodiversity, ecosystem services attributes, carbon accounting and ecological linkages. There is no decision support system based on environmental information for guiding landscape planning at either the federal or the state level. Malaysia has both a biodiversity clearing house mechanism and a geographic database for mapping biodiversity, using remote sensing; however, the data currently available is insufficient, particularly with regards to tiger and prey populations and habitat conditions.

185. **Legal obligation to implement the Master Plan.** The CFSMP identifies a number of areas between forest complexes that need to be conserved and restored as viable habitats in order to establish ecological connectivity of the complexes, and suggests a variety of ways and means of

achieving this through both physical and socioeconomic measures. However, the CFSMP remains an official proposal from the federal government whereas implementation rests with state governments and there is currently no legally binding system to ensure that landholders comply with all the provisions of the CFSMP.

186. **Capacity for monitoring compliance to plans for sustainable landscape management as part of the CFSMP.** As described above, the DOE is not able to regulate the conduct of EIAs before any development plans are implemented and the absence of any regulatory framework for monitoring impacts of land uses over time means that any lack of compliance to the CFSMP, and consequent negative impacts on biodiversity and ecosystems, will continue without the NRE's knowledge. Similarly, impacts of forestry activities within PRFs on biodiversity and ecosystem health are not sufficiently monitored due to lack of appropriate mechanisms. The CFS Steering and Technical Committees have been established to oversee the implementation of and compliance to the CFSMP; however, despite these committees encouraging better coordination for monitoring, inadequacies still exist in terms of technical resources and skills.
187. **Budget for the CFSMP.** Despite the development of the CFSMP covering eight states in Peninsular Malaysia and fulfilling the NPP, there is no automatic annual budget allocated for its implementation at state level. So far only Selangor has part of its budget allocated towards implementation of the Plan (under the 10<sup>th</sup> Malaysia Plan).
188. **Effective system to deal with human-wildlife conflict.** HWC prevention and response systems are in place but capacity and resources for their implementation is inadequate and reported incidents are sometimes not dealt with accordingly. The challenge in addressing the problem lies with the fact that often other parties, such as RELA, other local communities or the police, often attempt to respond to reports before the DWNP has reached the area; these parties are not fully briefed on existing protocols. This results in the continuation of HWC incidents and inadequate mitigation, and an increasingly negative attitude of local communities towards wildlife, particularly elephants, which reduces any initial incentive to conserve the forests.
189. **Resources for wildlife and forestry crime law enforcement.** Resources are lacking in forestry and wildlife departments for sufficient patrolling of forests for both poaching of wildlife and illegal harvesting of forest resources such as gaharu. For example, DWNP's WCU has a total of just 15 enforcement officers in Gerik and Belum Conservation Education Centre. Despite the establishment of Perak State Security Council endorsed Belum-Temengor Joint Enforcement Taskforce in 2010, comprising 10 enforcement agencies, to date less than 10 joint patrols are known to have been conducted. Boundaries are not being effectively protected; as a result, key sites are being encroached into by both local and foreign poachers and illegal harvesters. In terms of prioritising interventions and activities, field patrolling ranks the highest. If site protection is ineffective, all other subsequent and supporting efforts will result in very little net positive impact to conservation efforts.
190. Additionally, the absence of an intelligence-based law-enforcement mechanism drastically reduces the efficiency and effectiveness of law enforcement activities, particularly with regards to organised criminal networks. Coordination between enforcement agencies (DWNP, state forestry departments, Police and Customs, for example) has been established through MY-WEN but there is no system in place for monitoring activities or for the sharing of data between agencies. This needs to be significantly strengthened for improved coordination of efforts and increased success in arrests.
191. Furthermore, although Malaysia's laws against wildlife crime have become much stricter, with



higher penalties, observations in court have shown that prosecutors are not well versed in the country's wildlife laws. Conviction rates are very low, and lack of forensic and prosecuting experience and ability is the primary cause. Evidence is difficult to collect, analyse and preserve, as is the process of investigations. Staff tasked to carry out their duties in this regard, particularly from the DWNP and government prosecutors, need further training to not just boost capacity, but their confidence in carrying out their duties, which includes providing expert testimony in court.

***b. Limited experience among key government and civil society stakeholders in implementing sustainable forest landscapes management on the ground:***

192. **Institutional knowledge of biodiversity.** The number of professional wildlife conservation biologists and ecologists in government departments and conservation NGOs is low, which results in wildlife management decisions being made based on opinions or political pressure rather than evidence collected and analysed using scientific methods. In addition to this, there is relatively little demand for professional wildlife biologists in the corporate sector, especially amongst commercial entities that have negative impacts on wildlife or wildlife habitats, such as oil palm and rubber plantations, and mining and logging companies. There is also a lack of institutional capacity and/or enthusiasm for interacting with universities and supporting future conservation biologists, particularly with regards to large mammals which are difficult to study.
193. **State and local level capacity for implementing sustainable landscape management.** Landscape level biodiversity management is a relatively new concept in Malaysia; the management of the CFS is split between federal, state and local government agencies, plantation companies, smallholders and local communities; therefore, the operationalisation of an effective integrated forest landscape management system has so far been inhibited. Under the CFSMP state-level technical units composed of members from various relevant state departments and chaired by the EPU have been established. However, due to the past lack of coordination amongst agencies, capacity building and training is required for long term coordinated and effective management of the CFS.
194. In addition, as mentioned above, without tools for integrating biodiversity and ecosystem services values into landscape planning, or for monitoring the environmental impacts of land management activities, knowledge of best practice for sustainable landscape management is unlikely to be learned. Furthermore, although guidelines have been provided in the CFSMP for decision-making in land use involving the consideration of all stakeholders, with little experience in this method of landscape planning the potential for effectiveness of these guidelines is low. Finally, even with effective landscape management plans in place, action on the ground is constrained by weak landholders' capacities for internalising biodiversity conservation and sustainable management in land management activities.
195. **Land tenure rights of indigenous communities.** Although the Aboriginal People's Act 134 1954 allows for areas to be gazetted so as to both guard against alienation or occupation by others, and permit a certain exclusivity of land and resource use to Orang Asli communities, it does not specify any right over the revenues generated by the resources on that land. The Orang Asli utilise forest resources for both subsistence needs and as a source of income, but most communities do not have legal ownership of their land and thus are likely to lack the sense of ownership needed to incentivise the organisation of any kind of land management system, particularly if revenues are not guaranteed to remain amongst themselves.

*c. Lack of incentive and political will to implement the CFSMP:*

196. **Valuation of ecosystem services.** The ecosystem services provided by the CFS, and their economic values, are not fully appreciated and are not reflected in policies, market and prices. For the state governments to be able to set aside sufficient amounts of forest landscapes for conservation there needs to be stronger recognition of the ecosystem services value and income needs to be derived from such land use. The economic values of these services can be calculated using tools such as Integrated Valuation of Ecosystem Services and Trade-offs (InVEST), developed by WWF with the Natural Capital Project; however, capacity for the application of these tools is lacking.
197. **No mechanisms to compensate for utilisation of land for conservation of biodiversity and ecosystem services.** The CFSMP does not contain any mechanisms through which the landholder may benefit from his compliance to the plan, thus, in addition to lack of capacity there is no financial incentive at the local level to manage land for biodiversity and ecosystem conservation and increase protection areas to enhance connectivity.
198. **Previous experience of PES schemes.** Although there has been a growing interest in the establishment of PES schemes in the country, it is a relatively new concept and just one mechanism has been established to date. The general absence of experience of previous PES schemes results in: (i) knowledge gaps on ecosystem services for informed policy making on defining land use planning and incentive schemes; (ii) institutional and operational capacity weakness for PES, including systems and mechanisms for transparent payment for services, and standards and oversight to ensure the adequate delivery of services; (iii) almost non-existent practical experience of PES application; (iv) lack of awareness on ecosystem services and PES among the local stakeholders including communities and private businesses.
199. **Provincial policy and regulatory framework.** Policy and fiscal instrument support to land and resource activities in and around forests is still very much focused on extractive industries and commercial activities. For example, incentives introduced under the Promotion of Investments Act 1986 (Act 327) allow companies that undertake forest plantation projects to be eligible for pioneer status with a tax exemption of 100% of the statutory income tax for 10 years, and an investment tax allowance of 100% on qualifying capital expenditure incurred within 5 years. The Income Tax Rules 2009 (Deduction for investment in an approved forest plantation project) and the Income Tax Order 2009 (Exemption) (No. 10) both aim to promote the development of large-scale forest plantations; the federal government also grants soft loans to fund forest plantation projects. In encouraging economic development, these policies are effective; however, as long as the financial gains from planted forests are greater than those from conserving the forest, conversion to planted forests is likely to be the more desirable option for landholders.

***BASELINE COURSE OF ACTION***

200. Currently, Malaysia has a strong awareness of the issues the country is facing regarding biodiversity. Plans are written, for example, to conserve the CFS (through the CFSMP) and the Malayan tiger (through the NTCAP); a national REDD+ strategy is being developed; also, the majority of production forests in Peninsular Malaysia have been certified under the MTCS. These activities are elaborated on below.

201. In 2005, the NPPC approved the NPP, which highlighted the need for a “Central Forest Spine” to be established “to form the backbone of the Environmentally Sensitive Area network”. This plan was subsequently elaborated by the CFSMP for Ecological Linkages that was prepared by the Department of Town and Country Planning in 2010 and highlighted by the second NPP (NPP2) approved later that year by the NPPC. The CFSMP identifies 37 ecological corridors critical for linking major forest blocks in the peninsula. The Master Plan provides detailed and costed action plans for maintaining and enhancing ecological linkages through the peninsula, from Thailand in the north to the state of Johor in the south. The NRE has taken the lead in coordinating the execution of the CFS, with the FDPM being the foremost implementing agency and the DWNP playing a key supporting role, along with other agencies’ involvement. Within the NRE a national CFS Steering Committee has been formed, composed of representatives from state governments, agencies and NGOs, as well as a CFS Technical Committee, headed by the Director-General of FDPM. These committees will serve to oversee the implementation of the CFSMP and to monitor compliance to its regulations. State-level CFS technical committees have also been established to address land and other technical issues concerning the CFS. The total necessary cost of implementing the Master Plan is estimated to be in excess of USD 257 million, with the majority of the cost attached to land acquisition and wildlife corridor development. In addition, the imputed opportunity cost of setting aside the state forest land for conservation purposes is estimated to be over USD 1.3 billion. The government aspires to implement the Plan over the next 15 years through the 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup>, 5-year Malaysia Plans, and has so far allocated USD 1.83 million to DWNP in order to establish a corridor to the north of Taman Negara National Park, and a further USD 20 million for establishing ecological linkages within the Belum-Temengor forest landscape in Perak State. In addition, a CFS project budget of USD 317,000 has been allocated to the FDPM for necessary data gathering, field survey and rehabilitation of degraded areas inside the PRFs. In 2010 FDPM’s annual budget for CFS management was estimated to be USD 13 million per year, excluding infrastructure costs and land acquisition.
202. In an attempt to control poaching and illegal trafficking of wildlife, Malaysia’s Parliament passed the International Trade in Endangered Species Act in 2008. The new Wildlife Conservation Act was passed in May 2010 to repeal the 38-year-old Protection of Wildlife Act 1972. The new law, which came into force in June 2011 after a six month amnesty period, provides significantly higher penalties and mandatory jail terms for a wide range of wildlife crimes.
203. In 2011 the federal government combined MY-WEN with a National Taskforce in Combating Illegal Logging (NATFIL) in order to further increase efficiency in law enforcement through better coordination and a larger scale of coverage. Coordinated by NRE, agencies include CITES, forestry departments, the Malaysian Royal Police (with INTERPOL) and Customs, Anti-Smuggling Unit, Maritime Enforcement Agency, Port and Airport Authorities, state governments, Anti-Corruption Commission and related NGOs.
204. DWNP allocates USD 12.7 million per year for wildlife conservation and law enforcement, and the EPU is allocating USD 330,000 for a survey of tiger and prey populations in the tiger landscape, focusing on Taman Negara National Park. The DWNP also facilitated the establishment of MYCAT in 2003, which is an alliance of conservation organisations, including the MNS, WWF Malaysia, WCS and TRAFFIC South-East Asia, with the objective of saving the Malayan tiger in the wild. MYCAT established the Wildlife Crime Hotline in 2007 in order for the general public to support law enforcement efforts, and another hotline has more recently

been initiated by NRE for DWNP; these hotlines have been effective in intercepting individual cases of wildlife crime. For example, reports to the Wildlife Crime Hotline of gunshots heard have led to the arrest of poachers and the removing of snares. Since 2008 the number of actionable and relevant reports sent to the enforcement authorities has increased from 21 to 106 in 2011, with the vast majority acted upon<sup>99</sup>.

205. In 2008 the NTCAP was developed between the government and conservation NGOs using the MYCAT platform in order to combat the threats to the tiger population, namely wildlife crime and habitat reduction, with the vision of increasing its population to 1,000 by 2020. Implementation on a national scale has been poor with progress assessments showing limited success. However, WCS is supporting tiger conservation in the Endau-Rompin forest landscape with an annual budget of USD 400,000 per year, entailing support for patrols by DWNP, JNPC, FDPM rangers and systematic monitoring of tiger population, prey occupancy surveys and environmental education activities. This programme has been relatively successful, with anti-poaching patrols improved, priority tiger areas protected, expanded or sustainably managed, and the tiger and ecology knowledge base improved<sup>100</sup>. In Greater Taman Negara corridors have been secured and viaducts constructed, but poaching and encroachment remains a major threat.
206. In Belum-Temengor, with funding of USD 820,000 (from 2009-2011), WWF's Tigers Alive Programme aims to achieve the NTCAP goals through conservation initiatives such as ecological corridors, patrolling, land-use monitoring, community engagement and education, and wildlife monitoring. The Belum-Temengor Joint Enforcement Taskforce was formed in August 2010 after continued consultation with WWF and TRAFFIC; it is the first of its kind in the state of Perak and consists of ten enforcement agencies: PSPC, DWNP, Royal Malaysian Police, FDPM, the People Volunteers' Corps (RELA), Anti-Smuggling Unit, Customs Department, Fisheries Department, Marine Police and Immigration Department. These agencies are tasked with conducting joint anti-poaching patrols in four designated zones: the Royal Belum State Park, Belum and Temengor PRFs, Gerik-Jeli Highway and the state land forest on both sides of the Highway. In its first operation in August 2010, members of the taskforce seized two tonnes of agarwood and 31 mahseer (Kelah) fish. The effectiveness of this taskforce is uncertain, given that members have conducted a very limited number of joint operations since its establishment.
207. Over the last few decades, elephant translocation has been the primary vehicle in managing elephants and preventing conflict with humans. The National Elephant Conservation Action Plan (NECAP) was formulated in early 2013 in a combined effort from DWNP and WCS Malaysia as a more comprehensive plan for elephant management and the curbing of poaching and illegal trade of this species. Scientific research-based management is a key part of the plan, as well as taking a holistic approach and involving all stakeholders in actions against poaching, from the government to NGOs and the general public<sup>101</sup>.
208. There are several resources available to manage poaching data; some relevant agencies such as TRAFFIC have officers trained in their use, but none of these systems are currently implemented in Malaysia. One example is i2, which consists of iBase, a database application that contains unique collaboration and search capabilities enabling the capture, management of

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<sup>99</sup> Malaysian Conservation Alliance for Tigers. 2012. Malaysia's progress towards 1000 tigers. *MYCAT Tracks*, 4, Petaling Jaya, Malaysia.

<sup>100</sup> Ibid.

<sup>101</sup> Wildlife Conservation Society, 2012. Saving the wildlife elephants of Peninsular Malaysia. [online] Available at: [http://www.wcsmalaysia.org/MIKE\\_elephants.htm](http://www.wcsmalaysia.org/MIKE_elephants.htm) [Accessed 03 June 2013]

data and the dissemination of information and insight in support of an intelligence-led approach. Another function of i2 is the Analyst Notebook, which is a comprehensive range of visualisation and analytical tools enable the timely delivery of intelligence by quickly identifying connections, patterns and trends in complex data sets. In addition, the DWNP uses a Management Information System (MIST) to monitor the work performance and effectiveness of law enforcement activities against poaching in the Endau-Rompin landscape and Taman Negara with capacity building support from WCS and MYCAT. A new and improved system from MIST, the Smart Patrol System, is currently considered for implementation by enforcement agencies and conservation partners. Through Smart, patrol data is managed through an analytical database that generates reports in the form of maps, tables, enforcement effectiveness and gaps which can be used to guide and plan for the long term management of PAs and forests. Another tool is the World Customs Organisation's (WCO) ENVIRONET, which is a secure internet-based tool to share information quickly and securely amongst environmental law enforcement officers worldwide to enhance environmental border protection.

209. Most of the CFS is production forest managed by state forestry departments that are independently certified under the MTCS, which requires the maintenance of attributes that define high conservation value forest (HCVF). WWF Malaysia issued a national guide for identifying, managing and monitoring HCVF in 2009 that stressed the need to maintain connectivity of large landscape-level forests such as the CFS.
210. The government has embarked on a REDD+ readiness process, establishing a dedicated unit within NRE. With USD 280,000 (2011-2012) from the federal budget combined with a USD 700,000 grant from the UNDP, the government is developing a national REDD+ strategy, including baseline setting, Land Use, Land-Use Change and Forestry (LULUCF) monitoring, Monitoring, Reporting and Verification (MRV), and development of an institutional framework and capacity for implementation.
211. However, despite these initiatives and budgetary allocations for wildlife and forestry management, the knowledge, capacity, resources and readiness of the relevant stakeholders is lacking, from federal and state government level and judiciary staff to patrol officers and local communities. These barriers will obstruct the successful implementation of these strategies meaning that the CFS and its wildlife and ecosystem services will remain vulnerable to the threats described above.

## SECTION II: PROJECT STRATEGY

### PART 2.1: Project Rationale

#### *RATIONALE AND SUMMARY OF GEF ALTERNATIVE*

212. A considerable financial investment is being made by the government in the implementation of the CFSMP and activities for each landscape have sound scientific reasoning. However, while these activities would have some positive impacts on biodiversity, ecosystem functioning and connectivity within the CFS, the barriers identified above will prevent the achievement of maximum project impact. The greatest barriers to the project's success include the lack of resources available for incorporation of biodiversity and ecosystem services into land-use planning; lack of capacity for efficient and coordinated wildlife and forestry law enforcement; and, lack of sustainability of funding mechanisms for future CFS conservation. In consideration of these barriers, below summarises the most significant baseline scenarios likely to continue without the intervention of the IC-CFS project (referred to hereafter as "the Project").

#### **Land and natural resource management: baseline scenario**

213. Without mechanisms for monitoring and ensuring compliance to the CFSMP, its implementation at state level will be limited. Those states implementing the plans do not have the capacity for incorporating biodiversity and ecosystem services values into land use planning, nor do they regularly conduct EIAs before planned development projects are implemented. Therefore, there is a significant risk that landscape-level plans will not contain the level of biodiversity and ecosystem information that is required for appropriate landscape decision making and sustainable management.

214. In areas outside the geographical coverage of the CFSMP, individual land units will continue to be managed independently without sufficient attention paid to ecological connectivity or consideration of integrated natural resource management. Plantations (predominantly oil palm and rubber) will continue to be managed for maximum short-term profit without due consideration for long-term sustainability, in many cases leading to soil erosion, pollution, and loss of biodiversity and ecosystem services.

215. The quality of biodiversity and ecosystem monitoring systems for measuring impacts of forestry and forest management activities is currently not sufficient to ensure the environmental integrity of PRFs is maintained. Forests on alienated land and stateland are prone to conversion, encroachment, degradation and poaching activity, and without biodiversity and ecosystem monitoring in these areas, these activities will continue with no recognition of their environmental impacts. Communities, including indigenous communities, utilise forest resources for their livelihoods, but with ambiguous utilisation rights and with limited land ownership recognised by the state; this lack of sense of ownership of their natural resources will reduce the incentive for sustainable utilisation.

#### **Wildlife and forestry law enforcement: baseline scenario**

216. MY-WEN was established due to the fact that there was no collaborative platform for a taskforce, or body of any form, specifically to survey and investigate the illegal hunting and trade in wildlife in Malaysia. However, MY-WEN has been effectively non-operational, with no means of monitoring or reporting mechanism in place; therefore, strong, coordinated and

efficient efforts to tackle wildlife crime have not been made. Despite its combination with NATFIL, resources for tackling forestry crimes also remain inadequate. Without the Project's intervention, law enforcement efforts will continue with no monitoring of activities or collation and analysis of intelligence data.

217. This weak overall capacity for enforcing wildlife and forestry crime laws is then compounded by the lack in knowledge of wildlife and forestry law amongst legal officers, resulting in a very low rate of convictions. This has prevented the action to increase penalties for wildlife crime under the Wildlife Conservation Act 2010 from fulfilling its potential to significantly reduce wildlife crime. The combination of a weak law enforcement presence and low risk of penalties offers a very low resistance to poachers and illegal harvesters of forest resources. Thus, without the Project's intervention, wildlife and forestry crime will continue as it has, potentially leading to the local extinction of certain species of both animals and plants.
218. The NTCAP, progress of which is monitored by the NRE and MYCAT, is the only plan to save the Malayan tiger and its success has been minimal. The majority of 80 actions have failed to be fully implemented and one of the main outcomes, a nationwide survey of tigers to estimate the current population size has been significantly delayed. During 2010 for example, only 18 of the 76 actions scheduled for that year were implemented, including just six out of the 25 protection/enforcement actions, and three out of 12 actions in securing the CFS<sup>102</sup>. The rate of successfully implemented actions is steadily increasing ever year, but in 2012 it was still less than 50% of the total number of actions planned to be implemented in that year. Without the commitment of relevant authorities and sufficient resources and coordination to increase the rate of completed actions, the NTCAP will fail to recover the Malayan tiger populations.

#### **Conservation funding: baseline scenario**

219. Although plans and policies have been formulated to encourage the incorporation of ecosystem values into development, the insufficient allocation of funds towards biodiversity and ecosystem conservation and the lack of knowledge of mechanisms to increase funds for conservation is preventing these plans from being implemented. In particular, no specific funding allocations have been set up for the implementation of the CFSMP except for within Selangor; state governments are unwilling to direct any existing funds for projects which currently are not planned to give them any monetary benefits.
220. In the absence of the interventions proposed under the Project, the 'business-as-usual' scenario would continue, whereby the range of activities related to conservation of the tiger, sustainable timber harvesting and the conservation of the CFS would be undertaken. These activities provide a useful platform upon which the Project can build; however, without the implementation of this Project the barriers identified would remain unaddressed. As a result, under the baseline scenario, Peninsular Malaysia's globally significant biodiversity, the CFS and associated ecosystem services will continue to face significant threats despite the significant efforts of the Malaysian government described in the baseline section. Further fragmentation will not only increase threats of illegal harvesting of both animal and plant species, but will reduce the forest's capacity for providing ecosystem services.

#### **Land and natural resource management: the GEF alternative**

221. Under the GEF alternative, the Project's actions will fill gaps in knowledge of and capacity for sustainable forest landscape management. Strengthened federal and state level CFS management

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<sup>102</sup>Malaysian Conservation Alliance for Tigers, 2012. *MYCAT Tracks*, vol. 4 Petaling Jaya, Malaysia

structures will enable the monitoring of compliance to the CFSMP and ensure that biodiversity and ecosystem service values are incorporated into land-use planning appropriately; they will be able to monitor the effectiveness of each landscape-level sustainable management plan which will be formulated according to plans already in place (such as the CFSMP primary linkage plans and Belum-Temengor's integrated management plan) for each focal landscape. The biodiversity and ecosystem monitoring systems will also be applied in all forest management activities so that impacts of activities will be monitored and unsustainable activities adapted for increased sustainability.

222. Specifically, biodiversity, ecosystem service and carbon stocks conservation will be mainstreamed into management of state forests and PRFs through the development of the national biodiversity clearing house mechanism into a function for informing land-use management decisions and monitoring impacts of land-uses on these resources on a landscape scale. The economic valuation of natural resources will encourage the establishment of new protection forests as part of the management plans where appropriate; a GIS-based decision support system will enable effective spatial planning of land-use zones. Plantation and farm managers will adopt environmentally and socially responsible practices, including taking appropriate measures based on the environmental management and mitigation measures hierarchy of Avoid – Minimise – Mitigate – Offset (AMMO) to minimise and control erosion and degradation of soils, and the enhancement of habitat for indigenous flora and fauna through a combination of forest and riverine conservation areas within their estates.
223. Incentives will be developed for indigenous communities to practise sustainable use of natural resources, through value-addition of current livelihood activities and the establishment of additional conservation-dependent income-generating schemes. The Project will therefore ensure both ecological connectivity and the realisation of economic and social benefits, which should increase local support for conservation. In addition, retaliatory killings of wildlife as a result of HWC will be reduced through improved measures in wildlife defence and damage mitigation as well as through increased awareness amongst local communities of the importance of wildlife, conservation of the CFS and root causes of HWC.
224. With sustainable landscape management successfully implemented in the three key landscapes, examples of best practice will be available for similar management in other focal areas of the CFSMP as well as those areas outside its range of implementation.

#### **Wildlife and forestry law enforcement: the GEF alternative**

225. With GEF support, threats to wildlife and forest resources from illegal activities will be significantly reduced through strengthened law-enforcement activities, with the tiger population in source PAs increasing by at least 20%. State-level WCUs will be established in order to strengthen the coverage of the federal WCU; officers from both forestry and wildlife departments (as part of the WCU) will be better trained in law-enforcement; legal officers will be better versed in wildlife and forestry laws and corresponding procedures to support increased conviction rates of perpetrators. With regards to poaching in particular, an increased visible anti-poaching presence at the most targeted sites will reduce criminal activity; the establishment of a specialised unit for analysis of intelligence data will increase the rate of interception of organised criminal activity. Intelligence data will be efficiently managed through databases such as the i2 ibase and monitoring of activities amongst members of MY-WEN will encourage efficient and effective progress towards achievement of objectives.
226. A higher rate of completion of NTCAP's planned activities will be encouraged through support



with regards to capacity and resources, including improved law enforcement (as described above) and HWC mitigation measures. Additional funding may be secured through the establishment of a specialised vehicle licence plate scheme based on tiger conservation. The gazettelement of a further minimum of 20,000 ha of critical tiger forest habitat and improved landscape management will support the protection and movement of tiger populations, thereby enhancing NTCAP’s progress towards its objectives.

**Conservation funding: the GEF alternative**

- 227. In the GEF alternative, funds for conservation will be increased through a diverse range of sources, including automatic allocations and fiscal transfers across government departments, private sector-based biodiversity and carbon offsets, and public-based voluntary taxes (as well as potentially through vehicle licence plates as described above). PES schemes based on hydropower will be implemented where appropriate. These measures will both increase funds for conservation and encourage the consideration of the environment within several areas of development and industry, particularly with regards to the watershed value of the CFS. The government’s Conservation Trust Fund will be supported and a sub-section of the fund will be designated for the direction of revenue generated from these sources towards CFS conservation, managed by the federal CFS committees.
- 228. Biodiversity and ecosystem services will be mainstreamed into landscape planning and management through the economic valuation of natural resources and the formulation of sustainable financing plans based on optimal land uses according to these values. Land-use planning managers will be trained in this procedure and therefore will be capable of continuing to make decisions based on biodiversity and ecosystem service values as new development and land-use opportunities arise.
- 229. As a consequence of the efficient functioning of sustainable landscape management schemes, anti-poaching activities and sources of financing, the IC-CFS Project will help to ensure the long-term effective management of globally significant biodiversity resources and ecosystem services. The Project’s support for successful CFSMP implementation in the three target landscapes will not only catalyse actions to fulfil the CFSMP on a national level, but provide a demonstration of best practice and guidelines for replication across states. Greater institutional capacity for large-scale conservation will significantly enhance Malaysia’s compliance with international conventions and commitment, thereby improving the country’s contribution to global conservation efforts.

**Table 10. The Baseline Scenario in Peninsular Malaysia and Project Alternative**

Current Practice	Project Alternative
<b>Land and Natural Resource Management</b>	
Disjointed land use management with short-term plans for short-term profits; Plans in place for primary linkages but weak capacity and resources for implementation; Little means of taking into account biodiversity and ecosystems in land management decision making; Weak capacity for monitoring biodiversity and ecological impacts of development, including plantations within PRFs	Improved coordination between, and capacity of, forest and wildlife departments and land users for CFSMP implementation; Sustainable land management plans developed, integrating resource uses across whole landscapes; Increased critical tiger corridor habitat by at least 20,000ha and rehabilitation of at least 4,000 ha; Biodiversity and ecosystem service requirements integrated into land use planning and management; National system for biodiversity and ecological monitoring

Current Practice	Project Alternative
<p><b>Leading to:</b>  Reduced chance of achieving CFSMP targets;  Reduced connectivity and increased fragmentation of the CFS;  Land degradation and loss of biodiversity;  Weakened ecosystem capacity for provision of valuable services</p>	<p>strengthened and made applicable to landscape management planning with specialised taskforce for monitoring environmental impacts of land uses</p> <p><b>Leading to:</b>  Sustainable management of forests and other land units;  Achievement of the CFSMP in target sites and capacity emplaced for achievement in other sites;  Improved condition of natural habitats and soils over the long term;  Healthy ecosystems provide valuable services to dependent populations</p>
<b>Wildlife and Forestry Law Enforcement</b>	
<p>MY-WEN effectively non-operational with no intelligence-based monitoring or reporting schemes in place, and law enforcement capacity is weak;  HWC not effectively mitigated, with elephants and macaques damaging local livelihoods and risking being injured or killed;  NTCAP only partially successful, with wildlife crime and HTC still a threat to tigers;  Negative relationships between wildlife and local communities.</p> <p><b>Leading to:</b>  Continuation of wildlife and forestry crime;  HWC continuing to negatively impact both communities and wildlife;  Reduced local support for wildlife and its conservation;  Increased disconnection between wildlife authorities and local communities;  Population declines and risk of species extinction, including that of the tiger.</p>	<p>Intelligence gathering and analysis facility emplaced, with standardised reporting enabling efficient transfer of information;  Enhanced law enforcement capacity and presence on the ground with strengthened institutional structures;  HWC prevention and mitigation measures improved;  Conservation-based livelihoods enhanced among communities in target sites</p> <p><b>Leading to:</b>  Increased rate of arrests and convictions of wildlife crime perpetrators and significantly reduced rates of poaching;  Increase in tiger population;  Reduced conflict between communities and wildlife, with better support from authorities;  Improved relationship between communities and wildlife and wildlife authorities;  Increased support for conservation;  Overall improved management of the CFS</p>
<b>Conservation funding</b>	
<p>Insufficient allocation of funds towards conservation of biodiversity and ecosystem services, including for the CFSMP;  Low capacity to increase allocations;  Lack of financial benefits emplaced for conservation</p>	<p>Biodiversity and ecosystem services considerations integrated into land management plans through their economic evaluation;  PES schemes piloted in target sites;  Voluntary conservation tax levies in place;  A dedicated CFS conservation fund established;  Sustainable financing plans developed for sustainable management of target sites and for the CFS as a whole</p>

Current Practice	Project Alternative
<p><b>Leading to:</b></p> <p>No incentive among state governments to allocate their own funds to conserve the CFS when no economic returns are foreseen;</p> <p>Failure of CFSMP and continued loss of biodiversity and ecosystem health</p>	<p><b>Leading to:</b></p> <p>Increased funds specifically for conservation;</p> <p>Knowledge and capacity to implement ecosystem-friendly sustainable land management plans with maximum economic benefits;</p> <p>Monetary incentives for local communities and state governments to conserve ecosystems;</p> <p>Increased long term support for conservation</p>

## **PART 2.2: Project Strategy and Structure**

230. This project aims to support the fulfilment of two significant national-level plans for Malaysia: i) the CFSMP, and ii) the NTCAP. These plans will be supported primarily through strengthened capacity of and coordination between federal and state governments to a) sustainably manage the CFS and b) combat wildlife crime. Through the Project's activities to support these plans, biodiversity will be mainstreamed into landscape management and diverse and sustainable sources of funding will be secured for CFS conservation, helping to facilitate the integration of CFS conservation into national economic and development plans and budgets. The involvement of and consideration for all stakeholders in landscape management planning will help to both increase the viability of this approach and further integrate CFS conservation into development considerations of all stakeholders. The Project will provide examples of sustainable landscape management in a total of 693,500 ha of priority landscapes for both CFS connectivity and tiger conservation, acting to significantly support the achievement of CFSMP and NTCAP goals in these areas as well as providing examples to be replicated elsewhere, enabled by the increased institutional and operational capacity also achieved through the Project.
231. The Project contains several distinct strands which will contribute to the achievement of these aims, as described below:
232. 1) The Project will build capacity within federal and state CFSMP authorities for oversight, management and implementation of the CFSMP. A large part of this will be the development and/or introduction and training provided of tools to aid landscapes management planning and implementation, for example through enabling decisions to be made based on scientific considerations and the true economic values of both ecosystems and different land use options and enabling the monitoring of the impacts of these land uses on biodiversity, ecosystems and carbon stocks. This will encourage the mainstreaming of biodiversity into landscape management. The biodiversity monitoring tools will be based on the National Biodiversity Clearing House Mechanism will also assist in the monitoring of tiger populations.
233. Communication mechanisms will also be greatly improved between both federal and state level authorities as well as between CFS committees and their related departments to allow enhanced coordination in CFSMP management both across and between management levels. These measures will enable 4.2 million ha of unprotected forest in the three largest CFS complexes to remain 95% natural forest and with no net loss of forest cover.
234. 2) A significant focus of the Project will be on building capacity for wildlife and forestry crime law enforcement. Through the improvement of monitoring and reporting procedures and the establishment and training of a dedicated wildlife crime intelligence unit, law enforcement will become highly intelligence-based, with rapid sharing of comprehensive intelligence data

enabling strong coordination between all law enforcement agencies and departments and increased rates of interception. Capacity will be built for a strong and effective visible presence on the ground at both state and community levels through the establishment of both state level WCUs and a community-based monitoring network in each landscape and training given at all levels of the arrest-conviction train to ensure that an increase in data gathering (through the community network) will result in increased arrests and each case will be securely transferred through departments resulting in successful conviction.

235. 3) In the three focal landscapes sustainable landscape management plans will be developed, in order to pilot the tools introduced above and provide an example for their application. The plans will support and build upon current land plans as well as plans for the primary linkages within the CFSMP. Using the tools above, a participatory approach to landscape management planning will be taken to ensure support and involvement of all stakeholders. State-level CFS executive committees will be trained in landscape management planning; the training of forestry officers in the use of the biodiversity monitoring tools will aid the monitoring of plantation management within PRFs and ensure negative impacts upon biodiversity and ecosystems are minimised. Overall, the plans will result in 693,500 ha critical forest landscapes under sustainable forest landscape management, taking into account ecological processes such as water flow through the ecosystem and the environmental cost of land uses, and will provide appropriate management frameworks in order to ensure the sustainability of all activities.
236. These landscape management plans will include several biodiversity, sustainable forest management and land degradation aspects, as well as socio-economic aspects. The gazettement of 20,000 ha critical tiger corridor habitat and rehabilitation of 4,000 ha degraded habitat will assist to increase connectivity of forest patches for biodiversity, increase the health and provisional services of ecosystems, and increase carbon stocks. Biodiversity will be protected in key areas and managed appropriately across the rest of the landscape. The socio-economic status of local Orang Asli communities as well as their support for conservation will be improved through the enhancement of livelihoods involving ecotourism and handicrafts projects as well as the improvement of HWC mitigation measures.
237. 4) The final main strand of the Project involves the diversification and sustainability of funds for CFS conservation. Through the Project, mechanisms for diverse sourcing of funds will be implemented, for example through PES schemes and other means, targeting all types of stakeholder from government to corporate sector and the general public, which will both increase the security of a financial base for conservation through diversification as well as helping to raise awareness of CFS conservation among all stakeholders and further mainstreaming it into economic development. The support of the government's Conservation Trust Fund (not yet in operation) will strengthen the direction of revenue to conservation in a transparent and easily measurable manner; in addition a sub-section of this fund will be dedicated specifically to CFS conservation, managed by the federal CFS steering committee and funded by the mechanisms established as part of the Project. These financing mechanisms will also be incorporated into the sustainable landscape management plans and capacity built within CFS committees for the continuation of sustainable financial planning in landscape management. Through improved forest landscape management, and the generation of revenue from their sustainable management, the incentive is there to continue to conserve the CFS and its ecosystem services, enabling the continuous reinvestment of funds into its conservation.
238. This project recognises women as important participants in conservation and development generally and including that they spend a significant amount of time harvesting NTFPs and have

in-depth knowledge of forest resources. It is essential that project outputs contribute to the social development of women; by adding value to the products harvested by the women, such as medicinal plants and weaving materials, and setting up viable livelihoods, this project will enhance the cultural, social, and economic wealth of women. Training and educating women and providing employment through, for example, eco-tourism activities, will add to their empowerment. Participation of women in the project activities will be systematically monitored and quantified. The site level interventions will be designed with due considerations for equity between women and men and among ethnic groups, and to ensure no adverse impact on any particular groups in the society.

### ***PROJECT GOAL, OBJECTIVE, COMPONENTS AND OUTPUTS***

239. **The project goal** is that sustainable forest landscape management in the Central Forest Spine Landscape secures critical wildlife habitats, conserves biodiversity and carbon stocks and maintains the continuous flow of multiple ecosystem services.
240. **The project objective** is to increase federal and state level capacity to execute the CFSMP through the strengthening of institutional and operational structures and the piloting of sustainable forest landscape management plans in three tiger-priority landscapes, financed sustainably through the diversification of funding sources for conservation.
241. In order to overcome the above barriers and to achieve its objective, the project's intervention has been organised in three complementary components with a total of nine outcomes, the costs of which will be shared by GEF and co-financing. Each component addresses a different barrier and has discrete outcomes.

**COMPONENT 1. Planning, compliance monitoring and enforcement framework for integrated forest landscape management**

**COMPONENT 2. Sustainable forest landscape management of three priority forest landscapes within the CFS**

**COMPONENT 3. Diversification of financing sources for conservation**

242. Specifically, the Project will deliver 24 outputs. Each output carries direct indicative activities, which are consolidated in the table List of Outputs and Activities per Outcome in section 5.1. The three components, and their related outcomes and outputs, are as follows:

***Component 1: The planning, compliance monitoring and enforcement framework will be strengthened in order to unite both federal and state level responsibilities regarding i) land-use management decision-making; ii) the monitoring of ecosystem health and biodiversity; and iii) prevention of poaching and illegal trade of wildlife and other forest resources, as part of sustainable forest landscape management in the CFS***

243. This component will support the strengthening of the planning, compliance monitoring and enforcement framework for integrated forest landscape management, removing the aforementioned barriers at the national and state levels.
244. A significant part of the component will be the development and/or introduction of tools for monitoring biodiversity, ecosystem services and their values and carbon stocks, as well as for assisting decision-making with regards to landscape management planning. First, the Project

will support the further development of the National Biodiversity Clearing House Mechanism so that it may be better applied to biodiversity, ecosystem and carbon stocks monitoring within landscape management planning. This will be conducted by a newly established biodiversity indicator taskforce which will collate species data from the clearing house mechanism and other sources in order to accurately calculate the BII for the CFS as well as to monitor populations of tigers and other key species. Second, measures will be taken to facilitate the incorporation of the environmental management and mitigation measures hierarchy into landscape management planning, as well as to ensure that EIAs are implemented in a timely and appropriate manner so that the environmental impacts of development projects are minimised. Third, ecosystem service valuation tools will enable the biodiversity, ecosystem and carbon data to be incorporated into landscape management planning through measuring their economic values and determining optimal land use options through analysing trade-offs with land uses. Finally, GIS-based decision making tools will enable the spatial mapping of these data to assist in landscape management decision making.

245. The Project will then build capacity at both federal and state levels for oversight, management and implementation of the CFSMP through strengthening management structures and communication mechanisms so that both full-time dedication to the CFSMP and coordination between management authorities (between federal and state level as well as between CFS committees and relevant departments) is ensured. The specific allocation of staff to CFS management will encourage accountability for progress against objectives and therefore will enhance compliance to plans and regulations. All CFS committees and units (at federal and state level) as well as members from forestry and wildlife departments will be trained in the above tools as appropriate, enabling scientifically-informed landscape management decisions to be made and impacts to be monitored.
246. The Project will greatly support wildlife and forestry crime law enforcement through several innovative measures. A dedicated wildlife crime intelligence unit will be established within the federal WCU, with training in the i2 ibase database, in order to collate and analyse all intelligence data gathered by other law enforcement departments and agencies, for highly secure intelligence management and rapid distribution to relevant agencies accordingly. State-level WCUs will be established to enhance the effectiveness of the federal WCU; monitoring and reporting mechanisms will be strengthened and standardised to enable the efficient transfer of data to the federal WCU's intelligence unit and monitoring of progress against objectives of all law-enforcement parties by specific members of the WCU. These measures will enable significantly better coordination between parties such as each state level WCU, MY-WEN, state officials, the NRE Legal Division and INTERPOL.
247. In addition to a much improved intelligence base and coordination for crime interception, capacity will be built for ground-level law enforcement, at all levels of the arrest-conviction chain. Community-based monitoring networks will be established, trained and functioning in all three focal sites to vastly increase a visible presence against poachers and enable further monitoring coverage of priority poaching sites, with reporting mechanisms in place. Law enforcement staff will be trained in the use of SMART tools for better monitoring of patrolling effectiveness as well as in intelligence gathering, species identification, commonly used trade routes and smuggling techniques, with a standard operating procedure in place for scene of crime management. This will enable an increased rate of arrest either directly or through a higher quality of data gathered to transfer to relevant agencies via the wildlife crime intelligence unit. Capacity for prosecutions and convictions will also be improved through the provision of

training to officers at all levels from state level law enforcement officers and prosecutors to judiciary officers and magistrates in wildlife and forestry resources laws, their enforcement and practicalities involved, with a standard operating procedure developed for case management and transfer through departments. Following these measures, members of DWNP, FDP and the Legal Division will be supported for the continuation of law enforcement training after the Project.

248. Specific outcomes of the first component are expected to be:

- Strengthened institutional capacity of the federal government to oversee implementation of the CFS Master Plan, ensuring compliance by sub-national actors and monitoring impacts upon wildlife, ecosystems and carbon stocks
- Enhanced wildlife crime law enforcement and wildlife monitoring capacity placed at the national and state level and in target forest landscapes to ensure reduction of wildlife crime.

249. In order to achieve these outcomes, Component 1 will deliver ten outputs:

- **Output 1.1.1: A biodiversity indicator taskforce established, coordinated by the NRE, to accurately calculate and monitor the BII of the CFS and enhance the applicability of the National Biodiversity Clearing House Mechanism for use in landscape management planning.** The project will support the establishment of a biodiversity indicator taskforce to be coordinated by the NRE, to improve the accuracy of the BII for monitoring the biodiversity condition of the CFS in the first year. Existing species richness and abundance data will be collated and drivers of land use-specific biodiversity impact factors will be determined. The task force will include specialists in different taxonomic groups, and will work toward establishing the CFS biodiversity indicator framework, as well as ensuring that the clearing house mechanism will serve a greater purpose in landscape management planning by its utilisation in environmental monitoring. The data gathered will be manipulated to create biodiversity, habitat and ecosystem maps for the three target states, and will be utilised in the calculation of an accurate BII for each landscape as well as for the CFS as a whole. Analysis of the species and habitat data will be conducted in order to calculate carbon stocks in each landscape. The collation of species data will also aid the monitoring of tiger populations as well as their prey populations and other relevant species. These data will then be updated regularly with ground-truthing for monitoring purposes and annual measurements of the BII and carbon stocks of the three landscapes. The possibility for developing a web-based platform for the clearing house mechanism will be explored, in collaboration with international initiative such as the Atlas of Living Australia Programme.
- **Output 1.1.2: The environmental management and mitigation measures hierarchy (avoid-minimize-mitigate-offset) incorporated into landscape management planning and management protocols, building on EIA and other tools.** First, dialogue will be held with the DOE and other involved authorities to secure an agreement and formulate regulations that the current EIA protocol will be adapted to ensure that EIAs are consistently completed during the planning stage of development projects, prior to the approval of these projects by the state. Mechanisms will also be formulated for the appropriate follow up and implementations of conditions supplied by the DOE following each EIA, through better coordination of agencies and monitoring of compliance. Comprehensive guidelines will then be developed for incorporating EIA and AMMO measures into land-use planning, building on any existing materials, and with emphasis on public consultation.

- **Output 1.1.3: ICT-based ecosystem service valuation tools introduced for valuing ecosystem services in target forest landscapes, with models for determining trade-offs between land use options based on the values of ecosystem services and other land uses.** Under this output, the national CFS technical committee will be educated and trained in ecosystem service valuation and in the use of valuation tools such as The Natural Capital Project's and WWF's InVEST and its application in landscape management planning. Following this, the valuation of identified ecosystem services and land uses will be trialled in a selected area of the CFS, with multi-stakeholder participation.
- **Output 1.1.4: A GIS-based decision support system for landscape management planning adopted, incorporating information on current land uses, local communities, biodiversity, carbon stocks, ecosystem services and their valuation.** Data previously gathered on biodiversity and habitats as well as data available on other environmental factors such as topography, soil, river systems and carbon storage will be compiled into a GIS system such as Arcview GIS together with human-based information such as settlement, population density and PRF categories (among others) and various scenarios trialled against specific objective in order to test effectiveness of tool. This data will then be manipulated in order to develop a decision-making tool based on the different properties of each data-type. GIS systems will be used to track land use changes around and within the CFS landscape as well as changes in density and distribution of forest vegetation.
- **Output 1.1.5: The management capacity and operations of the existing national CFS steering and technical committees strengthened through training in the use and application of the above tools in order to efficiently supervise state-level CFS technical committees in CFSMP implementation.** Members of the national CFS technical committee will be trained in the application of the tools developed under the above outputs, according to their specialism. Communication and coordination between the steering and technical committees and their respective related departments (at both federal and state level) will be improved through training in information-sharing mechanisms. Capacity will also be built for monitoring by the steering and technical committees of each state committee's progress against objectives, including their use of the above tools and that decisions are being made accordingly.
- **Output 1.2.1: A wildlife crime intelligence unit established at federal level and fully resourced to control and analyse all intelligence data.** A dedicated wildlife crime intelligence unit will be established within the federal WCU, with a mandate to manage intelligence data for effective law enforcement in addition to the current wildlife crime monitoring functions, and to liaise with MY-WEN. The intelligence data management function of the unit will require a minimum of five positions (Unit Head, Informant Coordinator, Data Manager, Analyst and Data Entry). Liaison officers will be appointed for communications with INTERPOL, TRAFFIC and the police and customs. This unit will be trained in the use of i2 ibase (or similar tools) for managing intelligence data gathered by all parties involved with wildlife crime law enforcement, including both state officials and NGOs. The unit will continuously update and analyse data as it is gathered and distributed to the relevant parties according to the level of security.
- **Output 1.2.2: Monitoring and reporting mechanisms and protocols in place for efficient transfer of information between law enforcement agencies and relevant departments.** A standardised reporting format will be developed for each environmental crime agency, each zone of the WCU and forestry/wildlife and legal department, for efficient contribution of data



to the wildlife crime intelligence unit's database under Output 1.2.1. Reports will also include comprehensive information on actions taken and progress against objectives. Specific members of the federal WCU will be allocated to oversee agencies' efficiency via this reporting mechanism.

- **Output 1.2.3: Capacity built at community level for wildlife and forestry crime monitoring and reporting across all priority sites, to increase law enforcement presence.** A community-based monitoring network will be established in each of the three focal landscapes, potentially based on the Honorary Wildlife Warden approach. These networks will be formed of both Orang Asli and non-Orang Asli members. The network will be educated in the legal context of the illegal wildlife and forestry trade, law-enforcement measures and penalties given, as well as trained in patrolling, species identification and data recording. Mechanisms will be put in place for reporting to members of the state forestry and wildlife law enforcement departments.
- **Output 1.2.4: State official capacity built for wildlife and forestry crime monitoring, interception and conviction through the formation of state-level WCUs and strengthened operational resources and practices.** Selected law enforcement staff from state wildlife, forestry and legal departments will be allocated to form state-level WCUs within each state to mirror and report to the federal WCU. These established units and other agencies will be trained in the use of tools such as SMART, information and intelligence gathering, species identification, trade routes and smuggling techniques. A standard operating procedure will be established for scene of crime management in order for increased efficiency and effectiveness of law enforcement efforts. Further training will then be given to law enforcement officers as well as state level prosecutors, magistrates and judiciary officers on wildlife and forest resources laws, their enforcement and practicalities involved. A standard operating procedure will be established for case management and transfer through departments to ensure no loss of quality during the process. Members of DWNP, FDPM and the Legal Division will also be supported for the continuation of these training programmes so that capacity may be sustained post-project.

*Component 2: A sustainable forest landscape management plan will be operationalised in three priority forest landscapes within the CFS -Belum-Temengor forest landscape (354,600 ha), Endau-Rompin forest landscape (238,900ha) and Greater Taman Negara-Main Range Ecological Corridor (100,000 ha) - with the joint involvement of both state-level agencies and local land users and communities, in order to increase connectivity between forest landscapes with full state-level and local-level support:*

250. Component 2 of the Project will involve the planning and operationalisation of sustainable landscape management. The Project will support the establishment of a dedicated CFS executive unit under each state CFS technical committee and will fill capacity gaps for landscape management planning as well as provide training in the tools developed under Component 1 for the incorporation of environmental data into landscape management planning. Training will also be provided to state forestry and wildlife officers who will be monitoring the environmental impacts of land uses and contributing to the biodiversity and ecosystem monitoring system under Output 1.1.1.
251. In order to improve relations with other stakeholders, an awareness-raising strategy will be implemented for major stakeholders and an outreach programme carried out for local

communities, including both indigenous and non-indigenous members.

252. With capacity emplaced for sustainable landscape management planning, preliminary sustainable management plans for each landscape will be developed in support of and incorporating both current general land management plans (such as Belum-Temengor's Integrated Management Plan) and CFSMP plans for priority linkages. A participatory approach will be taken through the formation of a landscape management planning committee (LMPC) representing all stakeholders, in order to ensure wide-ranging support and benefit-sharing accordingly. Plans will be made based on biodiversity, habitat and ecosystem data, as well as the AMMO hierarchy within the EIA process, using the tools developed above, while ensuring complementation with current plans. The application of the above tools will ensure that firstly appropriate land uses are in place according to the environmental conditions and secondly that the environmental impacts of land use activities may be monitored. A preliminary strategic framework will be formulated, for finalisation according to the determination of sustainable financing options under Component 3. Protocols for biodiversity, ecosystem and carbon stocks monitoring will then be piloted in the management of the landscapes.
253. These management plans will include measures for the gazettement of at least 20,000 ha of critical tiger corridor habitat, in line with the Verified Carbon Standard (VCS) agriculture, forestry and land use (AFOLU) principles<sup>103</sup>, and the rehabilitation of at least 4,000 ha of semi-degraded habitat through afforestation, reforestation and revegetation (ARR) activities. These measures will not only increase total carbon storage of these habitats, thus supporting SFM practices, but will assist in increasing connectivity of important forest patches; furthermore, the ARR activities will enhance the native biodiversity of these semi-degraded areas through planting a polyculture of native species. In addition, connectivity will be enhanced through the construction of wildlife crossing overpasses or viaducts in critical corridors facing infrastructural barriers. Environmental monitoring by the trained forestry and wildlife officers will measure project impacts.
254. A significant aspect of the management approach entails the establishment of two community based organisations (CBOs) formed of members of the Orang Asli communities: ecotourism in Taman Negara and handicrafts projects in Belum-Temengor. As well as increasing incomes for these communities, the activities should help to improve the status of the Orang Asli among the Malaysian population as well as improve relationships between the communities and wildlife. In addition to these activities, the Project will strengthen HWC mitigation measures in Endau-Rompin and Belum-Temengor, firstly through the prevention of conflict between elephants and estate owners by comparing translocation plans with development plans in order to avoid overpopulation of elephants. It will also strengthen communication mechanisms between communities and DWNP so that HWC incidents may be responded to rapidly and appropriately. Implementation of the Tiger Challenge in the pilot areas will bring increased interest and incentive for tiger conservation through a competition for the development of an appropriate tiger conflict management scheme. This will generate funding for HWC mitigation resulting in both increased support from local communities and a sense of local empowerment, as well as increasing the viability of the scheme since the idea will have been generated by the communities themselves.
255. Specific outcomes of the second component are expected to be:

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<sup>103</sup> These requirements may be found at: <http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%2C%20v3.4.pdf> [online] Accessed 01 June 2013

- Biodiversity and ecosystem service provision is mainstreamed in forest landscape management in the three focal landscapes via sustainable forest landscape management plans, resulting in improved status of biodiversity and ecosystem services;
- Corridor establishment increases connectivity of critical ecological linkages identified in the CFSMP and supports carbon emission avoidance and sequestration under SFM practices;
- The socio-economic status of local communities improved and support for conservation increased through the generation of sustainable livelihoods based on wildlife, and the reduction of human-wildlife conflict.

256. In order to achieve these outcomes, Component 2 will deliver eight outputs:

- **Output 2.1.1: Capacity strengthened at state level for CFSMP implementation and management in focal landscapes.** Capacity will be strengthened within each technical committee of the three focal states for CFSMP implementation through the Project's support for allocation and resourcing of specific members of relevant departments (such as wildlife and forestry departments, EPU and legal officers) for full-time secondment to CFSMP implementation within an executive unit. Capacity gaps for implementing sustainable landscape management will be filled through training in land-use planning laws, practice and decision making, as well as compliance monitoring, communication and coordination mechanisms. Training will be given to the relevant members of the state CFS executive unit in the use of the tools introduced under Outputs 1.1.1-1.1.4, for incorporation of environmental data into land-use planning; state forestry and wildlife officers will be trained in biodiversity and habitat data collection for incorporation into the BII and ecosystem monitoring system under Output 1.1.1. To aid local support for and compliance to sustainable landscape management, a communications and stakeholder engagement strategy will also be developed and implemented in each landscape, to include both awareness raising of CFS conservation amongst major stakeholder such as plantation companies, and out-reach programmes for indigenous and non-indigenous communities. The strategy will include systematic knowledge management component to capture experiences and lessons from the pilot landscape for dissemination and replication. Support will also be given for NGO engagement as consultants to the community based monitoring network (under Output 1.2.3).
- **Output 2.1.2: Preliminary site specific management plans developed for each forest landscape in support of current plans, with stakeholder participation, to be finalised according to sustainable financing options established under Component 3.** For fair and well-represented planning of sustainable landscape management, a landscape management planning committee (LMPC) will be selected with representatives of each stakeholder type, and supervised by the state executive unit. Based on the habitat and biodiversity maps created under Output 1.1.1, the executive unit and LMPC will plan appropriate and sustainable land uses through the application of the ecosystem service valuation and GIS-based decision-making tools under Outputs 1.1.3 and 1.1.4. These plans will cover each focal landscape, including PRFs, and will act to support current land management plans in place as well as plans for the primary linkages already part of the CFSMP. Preliminary strategic frameworks will be formulated with roles and responsibilities defined and management and monitoring mechanisms agreed. The AMMO hierarchy will be piloted within the EIA process (with co-financing) for any planned development projects which may impact negatively on the environment.
- **Output 2.1.3: Integration of biodiversity, ecosystem service and carbon stocks**

**monitoring protocols (under outputs of Component 1) piloted in the management of the focal landscapes.** The piloting of the use of the monitoring protocols in landscape management will be carried out by the forestry and wildlife officers trained under Output 2.1.1. Monitoring will be conducted quarterly, with the BII recalculated annually by the biodiversity indicator taskforce. The data will be analysed alongside data on land use management types and changes in order to assess the impact of the Project upon the environment over time.

- **Output 2.2.1: Rehabilitation of at least 4,000 ha of semi-degraded forest landscape in line with ARR methodology, using a mix of native species, in accordance with current plans in place (funded from SFM).** Analysis will be conducted of the biodiversity and habitat maps under Output 1.1.1 using the ecosystem service valuation tool and GIS decision-making system, in order to identify most critical and suitable areas for rehabilitation, with consultations with all three state executive units to ensure targeted areas complement and do not conflict with current CFSMP plans. Priority areas for rehabilitation will be determined by their likelihood of successful rehabilitation as well as potential benefits such as potential land area secured through connectivity and the importance of the habitat for biodiversity, for example. Based on these conclusions, ground-truthing of shortlisted areas will confirm which areas to prioritise. These areas will then be demarcated and rehabilitation measures facilitated. Annual assessments of carbon stocks will assess impact of ARR activities.
- **Output 2.2.2: Gazettement of critical corridor forest of at least 20,000 ha, to supplement targeted corridors of the CFSMP, including proclamation of state forests as protection forests and designation of production forests as protection forests through implementation of Logged-to-Protection Forest practice in line with SFM principles of VCS AFOLU<sup>104</sup> (funded from SFM).** This will first involve the identification of habitat areas most appropriate for gazettelement in terms of biodiversity, human use and position in relation to other important habitat patches. Again, consultations with state CFS executive committees will ensure that these activities support current CFSMP plans. Appropriateness will be determined by the use of tools such as the GIS decision-making system and ecosystem services valuation tools under Outputs 1.1.3 and 1.1.4 and subsequent ground-truthing. If these areas fall on any private landholder's property, consultations will be made to gain consent for the gazettelement. The legal process of gazettelement will then be completed. Carbon stocks assessments and biodiversity and habitat monitoring will then be carried out in order to monitor the impacts of the gazettelement as per Output 2.1.3.
- **Output 2.2.3: Building of wildlife crossing overpasses or viaducts in critical ecological corridors facing infrastructural barriers, to supplement current plans for wildlife crossings within the CFSMP (co-financed).** Current wildlife crossing plans in the CFSMP will be supported through the strategic positioning of additional overpasses or viaducts. Wildlife tracking surveys will be conducted alongside main roads such as the Federal Route 8 to determine species movements. This data will be combined with GIS data of biodiversity and habitat data to assess the most critical areas for wildlife crossings according to movement and proximity to other significant forested areas, for example. Plans will be communicated to transport and infrastructure authorities and construction companies to facilitate construction of either aerial crossings for arboreal species or overpasses and/or viaducts for terrestrial species. These crossings will be demarcated with signposts and enhanced through the

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<sup>104</sup> Details of these requirements may be found at: <http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%2C%20v3.4.pdf> [online] Accessed 01 June 2013

positioning of speed limits and speed bumps. Impacts will be monitored in terms of wildlife movements and vehicle/animal collision rates.

- **Output 2.3.1: Ecotourism and handicrafts projects piloted within indigenous communities in Greater Taman Negara and Belum-Temengor, to be replicated elsewhere.** Two CBOs will be established and functioning under this output: an ecotourism CBO in Taman Negara and handicrafts CBO in Belum-Temengor. Orang Asli communities selected for membership of each CBO will be educated in CFS conservation and sustainable use of natural resources, and handicrafts members trained in all aspects of handicrafts income generation including value-addition, marketing and branding of products and income management while ecotourism members will be trained in species identification and tracking, wildlife behaviour and guide-walking as well as income management. Linkages to known markets in handicrafts and ecotourism will be established and supply chains strengthened.
- **Output 2.3.2: Human-wildlife conflict mitigation measures piloted within Belum-Temengor and Endau-Rompin.** Current land development and elephant translocation plans will be reviewed in order to pre-empt any resulting conflict due to elephant overpopulation in areas that may be in the process of development. Engagement between DWNP and estate owners will be supported to increase understanding of both parties and reduce risk of HEC retaliation. Responses of DWNP to HWC incidents will be improved through strengthened communication mechanisms and action procedures to ensure that the DWNP is able to respond with the correct mitigation measures rather than other organisations or civilians that may respond more quickly but less effectively. Wildlife and HWC awareness sessions will be conducted among affected communities to encourage appropriate actions during HWC incidents. Finally, the Tiger Challenge scheme will be piloted in order to incentivise all stakeholders from government to communities to take part in tiger conservation through devising methods for preventing HTC. Winners of this challenge will be given a grant to implement their scheme, resulting in a potentially effective mitigation measure and increased interest and support for tiger conservation. An emphasis will be placed on the involvement of local communities in this scheme.

***Component 3: The financial sustainability of CFS biodiversity and ecosystem conservation is achieved through the diversification of funding sources and establishment of a CFS conservation fund:***

257. Under Component 3, the Project will work at federal and state levels and in priority landscapes to develop and pilot concrete mechanisms for increasing and diversifying funding for conservation of the CFS, and to strengthen the administrative and planning base for sustainable financing. A set of mutually supporting mechanisms for generating funding, targeting various ecosystem services and beneficiaries, will be demonstrated in priority landscapes in the CFS. These will include at least three hydropower PES schemes, at least three corporate biodiversity or carbon offsets, and several voluntary conservation levies and fiscal transfers, thus targeting all stakeholder types from government to corporate sector and the general public.
258. Strategic, transparent and conservation-oriented procedures for planning and allocating funds for CFS conservation will also be developed, including the support for the government's newly formulated Conservation Trust Fund to earmark, retain and administer financial resources for the various groups and activities that are responsible for conservation. The financing mechanisms will increase the level of revenue for conservation through diversification of

sources, thus enhancing the security and long-term financial sustainability of management efforts in the CFS, as well as providing financial incentives for forest-impacting and forest-dependent groups to participate more actively in biodiversity conservation (through the PES schemes). They also respond to the need to demonstrate tangible on-the-ground mechanisms for improving conservation funding at federal, state and site levels. Finally, the conservation fund will facilitate the appropriate direction of funds towards conservation and act as a marketing tool to win favour from potential donors; for example, tourists may be more willing to make donations if they are destined for a specific conservation fund. Together, these activities will address key constraints relating to funding availability and diversity of sources, which currently act as barriers to effective biodiversity and ecosystem conservation in the CFS.

259. Component 3 also addresses the barriers to sustainable conservation financing and effective management that are posed by weak capacity, awareness and information. Substantial efforts will be made to build the capacity of conservation managers and other key stakeholders to plan for, access and operationalise new financing mechanisms, so as to ensure the replication and long-term sustainability of interventions. These will come to fruition through the participatory formulation of sustainable financings plans for the CFS as a whole as well as the three focal landscapes. Activities carried out under this component will take steps in building constituency and participation in conservation financing between government, the private sector and civil society, including representatives of forest-adjacent communities and businesses.

260. Component 3 provides for a strategic mix in the utilisation of GEF investment and co-finance by utilising GEF funds to provide a catalytic role in bringing about innovative approaches and thinking whilst co-finance will pay for the investment and long-term integration of new approaches into the necessary systems required for their long-term sustainability. Without the GEF increment, the catalytic thinking, collective action and understanding of new approaches in conservation finance would not be in existence, this the GEF investment provides a crucial opportunity to galvanise the necessary changes to bring conservation finance into the mainstream.

261. Specific outcomes of the third component are expected to be:

- The long term biodiversity and ecosystem conservation of the CFS is enhanced through the diversification of funding sources for conservation;
- Funding allocations for biodiversity and ecosystem conservation in the CFS are secured and finalised;
- Strategic planning processes are in place and being used to link financing to conservation and sustainable landscape management needs.

262. In order to achieve these outcomes, Component 3 will deliver seven outputs:

- **Output 3.1.1: New market-based sources of conservation funding developed: a small hydropower watershed PES scheme in Perak, to be replicated in Johor and Pahang (operation of PES schemes paid for under co-finance).** Current and planned hydropower schemes in Perak will be investigated as to their potential for PES and interest in collaboration. Following this, agreements will be made between interested companies and state authorities for a PES scheme and for part of PES revenues to be retained by Perak forestry department. PES rates will be negotiated and agreed and independent verification and reporting measures will be established. Based on lessons learned, the PES scheme will then be replicated in Johor and Pahang states. Furthermore, the project will support active

exploration of the transboundary PES scheme, such as payment for watershed services between Johor State and Singapore, given that Singapore is a primary beneficiary of the watershed services from the CFS.

- **Output 3.1.2: New private-based sources of conservation funding developed: corporate biodiversity or carbon offsets in support of priority species and landscapes.** Appropriate mechanisms and opportunities for biodiversity and/or carbon offsets will be determined through reviews of best-practice elsewhere and market research. Agreements will then be made with at least three environmentally impacting companies already involved in CESR for participation in corporate biodiversity or carbon offset schemes. Potential companies may include Petronas Chemicals Group Bhd, Sandvik Mining Suppliers, Sony Malaysia or FELDA. Baselines and independent monitoring protocols will be emplaced to track the overall performance of the scheme.
- **Output 3.1.3: Voluntary conservation levies introduced at the state level.** This output will provide a simple means to increase funds. Communications will be directed towards authorities, hoteliers and tour operators, with an aim for funds to be raised by tourists to Taman Negara National Park and users of critical roads such as Federal Route 8 in Sungai Yu corridor or along the East-West highway in Belum-Temengor. The charge rates and logistics will be agreed with each participating party. Each scheme will then be implemented, with necessary facilities established such as donation boxes, conservation information boards, and souvenirs designed for each donor, for example car stickers. Development of conservation vehicle license plates will be actively explored to generate additional sources of conservation financing for the implementation of NTCAP. Conservation vehicle license plates with extra registration and annual fees are established conservation financing mechanism in countries such as the United States. .
- **Output 3.1.4: Conservation funding incorporated into sectoral budgets, including through earmarked fiscal transfers.** Tasks for this output will begin with communications with sectoral-line agencies and financial planners at federal and state level to increase understanding of the importance of CFS conservation for economic development (according to the economic values of ecosystems) and secure support for budgetary and fiscal transfers. Other line agencies will then be supported to identify areas of conservation impacts in existing programmes and plans, followed by negotiations of fiscal retention and transfer agreements with the Ministry of Finance and state finance offices and the revision of federal and state Lists accordingly. Mechanisms for budgetary and fiscal transfers will then be emplaced.
- **Output 3.2.1: A dedicated fund established at the federal level, managed by the national CFSMP steering committee, to control funds raised under Outputs 3.1.1-3.1.4 in support of biodiversity and ecosystem conservation in the CFS (including labour and facilities provided under co-fin),. An** internal needs assessment will be conducted to establish any additional federal or state level legal and regulatory provisions followed by the determination of an appropriate structure and mode of operation of the fund. Specific members of the national CFS steering committee will be allocated towards and trained in the design, implementation and monitoring of the conservation fund, and dialogue will then be carried out between these members and the participants involved in revenue generation under Outputs 3.1.1-3.1.4 in order to emplace mechanisms of revenue transfer to the fund. Finally, an operational manual will be produced for training purposes so that the appropriate management of the fund may be continued.

- **Output 3.3.1: Sustainable financing plans developed at both federal and state levels within CFS units, incorporating investment opportunities, with landscape management plans finalised accordingly (secured through GEF investment, provided under co-finance).** With the involvement of the national CFS steering committee and EPU, a sustainable financing plan will be developed for the CFSMP, building on the umbrella schemes already proposed. This will incorporate sustainable conservation financing options under Outputs 3.1.1-3.1.4 as well as a marketing and communications plan, in order to increase general awareness and support for conservation funding. It will be based on various scenarios of predicted income and utilise the ICT-based ecosystem services valuation tools under Component 1. Training will be given to the federal EPU and CFS steering committee and of the state CFS units as well as the LMPCs in the planning and implementation of the sustainable financing mechanisms developed under Outputs 3.1.1-3.1.4. Sustainable financing plans will also be developed for each focal landscape, (again incorporating local-level sustainable conservation financing options under Outputs 3.1.1-3.1.4 as well as a marketing and communications plan), in order to increase general awareness and support for conservation funding. They will be formulated with full stakeholder participation and with consideration of the ecosystem values determined using the valuation tool. They will then be incorporated into the preliminary site-specific landscape management plans in order to produce a final management plan with appropriate and sustainable financing measures.

## ***RISKS AND ASSUMPTIONS***

263. The project strategy makes the following key assumptions in proposing the GEF intervention:

- The Malaysian Government will maintain a strong sense of commitment and ownership throughout the Project's duration, and individual state authorities, CFS units and other local institutions will maintain a clear mandate and authority to fulfil oversight and management obligations for sustainable forest use.
- Federal and state governments will agree to reallocate public funds towards the conservation of the CFS and will support the establishment of an extra-budgetary conservation fund; they will agree to set aside land from development activities in order to increase conservation areas.
- State governments will realise their role in the Project and will be willing to implement activities without requiring fiscal incentives.
- The limited number of conservation experts from NGOs will be available to give their time to offer expertise and share knowledge as and when needed.
- Production sectors, such as forestry and plantation production companies or infrastructure developers, will be receptive to new means of landscape management and agree to adapt their resource use and development habits.
- Local land users, including indigenous communities, trust the Project's intentions and adapt their previous level and type of resource use in order to gain benefits from more sustainable livelihoods.



- State governments will recognise the rights of the indigenous communities in being involved in land management due to the strong relationship they hold with natural resources.
- Baseline conditions in the selected areas can be extrapolated with high confidence level to other areas within the CFS and lessons learnt from the Project can be successfully disseminated across states.
- The capacity built in at federal and state levels of governance will not be lost through transfer of the personnel over time.
- Increased awareness and capacity will lead to a change in behaviour with respect to land management and development, and the sustainable management of the CFS will steadily grow as a national priority for Peninsular Malaysia as knowledge and information regarding its economic, cultural and environmental value is made available.
- Climate change will not affect the successful achievement of the Project’s objectives.

264. In accordance with the above assumptions there are certain risks that may limit the success of the Project if not prepared for and mitigated. Project risks presented at the PIF stage were updated during the PPG phase. They have been further elaborated and classified according to UNDP/GEF Risk Standard Categories<sup>105</sup>, and assessed according to criteria of ‘impact’ and ‘likelihood’ (Box 1):

**Table 11. Project Risks Assessment and Mitigation Measures**

Risk	Category	Rating	Mitigation Measure
Federal and state governments may be reluctant to reallocate public funds towards the conservation of the CFS and to support the establishment of an extra-budgetary conservation fund; they will not agree to set aside land from development activities in order to increase conservation areas.	Financial/political	High	Efforts to secure government support and buy-in to the development of new financing mechanisms and arrangements will be accompanied by a concerted communications and awareness campaign. A key feature of this will be to articulate and demonstrate the economic and development benefits of enhanced public investment in biodiversity and ecosystem conservation in the CFS. By introducing several new financing mechanisms, the Project aims to lessen the potential impacts should one of these sources be somehow constrained in its development or otherwise perform below target. The Project will invest in development of a decision support system for land-use, with valuation tools for different types of ecosystem services, with models for determining trade-offs between land use options based on the value of ecosystem services and other land use values. The Project will demonstrate actual monetisation of ecosystem values through developing the PES mechanism within the CFS landscape. This will demonstrate to the state governments the monetary benefits of setting aside specific areas for conservation.
Poaching pressure fuelled by the existence of global illegal wildlife trade may fast decimate the	Social/environmental	Medium-High	Given the high level of this risk, one of the pillars of the Project design is to increase Malaysia’s capacity for surveillance and intelligence driven law enforcement in the CFS and at border posts, to fully implement the existing wildlife laws. It will also strengthen the country capacity for effective participation in regional and global networks to eliminate wildlife trade

<sup>105</sup> Includes the following eight categories: environmental; financial; operational; organizational; political; regulatory; strategic; and other.

Risk	Category	Rating	Mitigation Measure
tiger population			
State governments may view the CFS as a federal government project and be reluctant to implement it without fiscal incentives	Political	Medium	Since the Project involves landscape management, all natural resources and forest types will be accounted for, which are under state responsibility. The design of the plan means that all resources and land uses will be enhanced and improved, thus benefiting the state. With the implementation of a PES scheme and other diverse financing sources, funding will be secured and eliminate the need for fiscal incentives. State governments have been engaged through the PPG process and therefore are already aware of the project plans and reasoning; however, there will be physical presence of the project at the state and site levels so these points will continue to be emphasised through close discussions at the start and throughout the project.
Implementation of the CFSMP may encounter resistance from production sectors such as infrastructure and agriculture, leading to continued construction of roads and forest conversion to agricultural plots	Strategic	Medium	An effective communication strategy and stakeholder involvement plan will be developed and implemented in order to gain stakeholder support. The Project will work towards developing capacity of local government officials and stakeholders in different sectors for translating the CFSMP into local land-use and development planning. The process will be carried out with full participation of the stakeholders in government, non-government and the private sector, including infrastructure companies. This will increase understanding of the need for striking the right balance between development and safeguarding of biodiversity. In addition, forestry officers will be trained to better monitor the biodiversity impacts of plantations within PRFs. Human wildlife conflict mitigation measures will also be supported, such as promotion of compatible land uses in wildlife ranges.
Land users and local communities may distrust project intentions or ignore obligations due to lack of support for conservation and continue to conduct unsustainable activities, leading to overharvesting of forest resources, continued creation of forest trails and agricultural plots, and failure of sustainable livelihood objectives.	Strategic	Medium	Establishment of landscape level management units and landscape level management planning through participatory processes, as well as robust implementation of monitoring mechanisms for biodiversity and ecosystems, will work towards minimising the risk of continuation of unsustainable activities. With all stakeholders involved in every step, full awareness of the benefits of the plan and support for its implementation should be gained. Development of PES schemes is expected to work as an incentive for good behaviour and peer monitoring pressure. Local support for livelihood enhancements has already been established at the PPG stage and so deviation from these schemes towards unsustainable activities should be minimised. Local communities also support the conservation of the CFS as long as human-wildlife conflict is controlled; one of the project's aims is to strengthen mitigation measures against human-wildlife conflict, thus minimising risks to local support for conservation.
State governments may be reluctant to recognise the customary rights of local communities	Political	Medium	The establishment of the sustainable landscape management plan will involve all stakeholders. Close discussion with governments as well as local communities is expected to ensure that governments realise the close relationship between the communities and the forests, their unique knowledge of forest resources, and therefore the importance of their consideration in management discussions. By providing employment for the Orang Asli in law enforcement activities as well as established CBOs, the first steps will be made in increasing their involvement in management, potentially leading to improved rights and stronger CBNRM activities in the future.
The capacity built in at federal and state levels of governance may be lost through transfer of the	Strategic	Medium	A significant proportion of the Project will focus on creating training procedures and documents to be disseminated across states. For example, members of DWNP, FDP and the Legal Division will be trained for the continuation of training of law enforcement officers post-project. This will ensure that training and guidelines may be

Risk	Category	Rating	Mitigation Measure
personnel over time.			passed on to new personnel so that capacity for sustainable landscape management may be sustained. In addition, the strengthened institutional structures supported through the Project, including the development of tools and coordination mechanisms, are physical, permanent factors improving capacity, which will assist its sustainability through the transfer of personnel
The benefits of forest conservation may not be recognised by land managers; biodiversity considerations will not become integral to land use planning and the CFS will not gain wider support for its conservation	Financial/strategic	Medium	The Project's inclusion of PES schemes development through the dedicated component as well as the establishment of sustainable livelihoods that both depend on biodiversity and enhance income for those involved will clarify the link between forest conservation and economic development. The landscape-scale approach will result in cost-effective management, which should be recognised by authorities. Other state governments and land owners will also see that the Project's outcomes are a more desirable alternative to the baseline scenario.
Governments and other relevant institutions may lose sight of the Project goal and neglect their obligations	Political	Low	The Project will ensure the specific allocations of responsibilities within the federal and state CFS units and other relevant institutions through a participatory approach, accommodating each member's availability, so that focus on the CFS will remain uninterrupted. Compliance monitoring mechanisms in place will ensure that each party remains committed to its responsibility. The importance of the CFS for the Malaysian economy in terms of wildlife tourism and ecosystem services, as well as the Project's contribution to national targets and global conventions will be made well known and should secure their long-term commitment.
Climate change may undermine the conservation objectives of the Project through, for example, extreme weather events destroying parts of the CFS in target landscapes	Environmental	Negligible	The Project will work to address the anticipated negative impacts of climate change by increasing resilience of the forest landscape, through promoting sustainable management of large-scale landscape in the CFS. Maintenance of large-scale resilience is critical in securing flow of ecosystem services and avoiding irreversible ecosystem regime shifts, which may be caused by climate. If climate-related forest destruction occurs, it will be revived more rapidly with healthier surrounding forests.

Box 1. Risk Assessment Guiding Matrix						
		Impact				
		CRITICAL	HIGH	MEDIUM	LOW	NEGLIGIBLE
Likelihood	CERTAIN / IMMINENT	Critical	Critical	High	Medium	Low
	VERY LIKELY	Critical	High	High	Medium	Low
	LIKELY	High	High	Medium	Low	Negligible
	MODERATELY LIKELY	Medium	Medium	Low	Low	Negligible
	UNLIKELY	Low	Low	Negligible	Negligible	Considered to pose no determinable risk

## PART 2.3: Project consistency with international and national priorities and plans

### ***FIT WITH THE GEF FOCAL AREA STRATEGY AND PROGRAMME***

265. The IC-CFS Project's primary goal is to address the threats to biodiversity posed by habitat loss and degradation in the CFS by improving connectivity between forest patches and reducing wildlife and forestry crime; thereby increasing forest cover, habitat quality and biodiversity. The Project is also expected to achieve improved water provisioning and regulation services and the protection of carbon reservoirs. In achievement of this, the Project will address three focal areas under the GEF-5 period (2010-2014): Biodiversity (BD), Land Degradation (LD) and Sustainable Forest Management (SFM)/(REDD+), as listed in the table below.

***Table 12. Project Contribution to GEF Focal Area Strategies***

<b>Objective and Strategic Outcome</b>	<b>Output</b>	<b>Project outputs in contribution</b>
BD-2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation	<p>2.1: Policies and regulatory frameworks for production sectors</p> <p>2.2: National and sub-national land-use plans that incorporate biodiversity and ecosystem services valuation</p>	<p>1.1.5, 2.1.1: Management structures and capacity will be strengthened at both federal and state level for CFSMP implementation and compliance monitoring</p> <p>2.1.2: Site-specific sustainable forest landscape management plans will be developed and implemented in 3 target landscapes of the CFS (supporting plans currently in existence), with decisions made based on information from biodiversity, ecosystem services values and carbon stocks;</p> <p>2.3.1: Socio-economic development activities will incorporate wildlife-dependent livelihoods in order to integrate conservation with local development;</p> <p>1.2.1-1.2.4: Within the three forest landscapes wildlife and forestry law enforcement capacity will be significantly improved with intelligence-based data systems, state level WCUs established, and standardised monitoring and reporting procedures in place; increased monitoring presence (through employment of local communities; improved capacity for patrolling, arrests and convictions;</p> <p>3.3.2: Sustainable financing plans developed for each focal landscape and for the CFS as a whole, incorporating valuation of ecosystem services (including PES mechanism) and other financial sources based on CFS conservation</p>
<p>LD-3.1: Enhanced cross-sector enabling environment for integrated landscape management</p> <p>LD-3.3: Increased investments in integrated landscape management</p>	<p>3.1: Integrated land management plans developed and implemented</p> <p>3.2: INRM tools and methodologies developed and tested</p> <p>3.3: Appropriate actions to diversify the financial resource base</p>	<p>2.1.2: Site-specific sustainable forest landscape management plans will be developed and implemented in 3 target landscapes of the CFS (supporting plans currently in existence);</p> <p>1.1.1-1.1.4: Mechanisms for monitoring biodiversity, ecosystems and carbon stocks will be enhanced; EIA and AMMO considerations will be better incorporated into landscape management plans; Ecosystem valuation tools will be introduced in order for land use planning decisions to be made appropriately based on true economic values of ecosystem services (as well as land uses); GIS-based decision support system developed for incorporating all environmental and human/economic data into spatial planning;</p> <p>2.1.3: Integration of above tools for monitoring protocols targeted in the three focal landscapes;</p> <p>3.1.1 – 3.1.4: Several diverse and sustainable sources of</p>

Objective and Strategic Outcome	Output	Project outputs in contribution
		conservation funding will be developed, including three PES mechanisms, several voluntary conservation levies and corporate biodiversity offset schemes, as well as fiscal transfers
SFM REDD+ 1.2: Good management practices applied in existing forests	<p>1.1: <b>Three</b> PES systems established</p> <p>1.2: <b>693,500 ha</b> of forest under sustainable management,</p> <p>1.3: <b>1.49 million tC emissions avoided and 17,600 tC/yr sequestered</b> through SFM</p>	<p>3.1.1: A watershed PES scheme will be developed in one of the target landscapes, to be replicated in the other two based on lessons learned;</p> <p>2.1.2: Site-specific sustainable forest landscape management plans will be developed and implemented in 3 target landscapes of the CFS (following review of plans currently in existence), ensuring sustainable forest landscape management in 693,500 ha of critical forest landscapes;</p> <p>1.1.2: The environmental management and mitigation measures hierarchy will be incorporated into landscape management planning;</p> <p>2.2.1: At least 4,000 ha of semi-degraded forest will be rehabilitated in line with ARR methodology, sequestering approximately 17,600 tC/yr;</p> <p>2.2.1: At least 20,000 ha of critical corridor forest will be gazetted, avoiding emissions from deforestation of 1.49 million tC;</p> <p>1.1.1: The National Biodiversity Clearing House Mechanism will be made more applicable to landscape management planning, including through incorporation of mechanisms for monitoring carbon stocks (this will be supplemented with ground-truthing)</p>

266. The BD-2 objective “Mainstream Biodiversity, Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors” is addressed by incorporating measures to conserve and sustainably use biodiversity in land use planning, allocation and management processes within the biodiversity rich CFS. For example, the Project will support the application of tools for biodiversity and ecosystem monitoring and ecosystem service valuation in landscape management planning, with the objective of developing sustainable landscape management plans in three priority areas for both the CFSMP and the NTCAP. CBOs will be established for Orang Asli communities involving ecotourism and natural resource-based handicrafts, so that income generated is based on the sustainable management of natural forest habitats. A large focus of the project is to encourage a supportive institutional framework to provide for biodiversity considerations in development and land management plans, through supporting the conservation trust fund within the federal government and enhancing its applicability to CFS conservation; it will also develop sustainable financing plans, for both the CFS as a whole and each focal landscape, which will incorporate finance sources based on ecosystem services, such as PES schemes, as well as through fiscal transfers, corporate biodiversity and carbon offsets and voluntary conservation levies. Regulatory frameworks will be strengthened through the enhanced capacity at federal and state level to oversee, manage and implement the CFSMP as well as monitor compliance to CFSMP regulations.

267. The Project will also contribute to several of the Aichi Biodiversity Targets. Strategic Goal A, ‘Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society’ will be contributed to through increasing awareness of the values of biodiversity of the CFS amongst all stakeholder types from government to local community, and providing guidance as to how to manage it sustainably; integrating biodiversity into

development poverty reduction strategies for the Orang Asli via CBOs based on the sustainable use of natural resources; increasing positive incentives for the conservation of biodiversity through PES schemes and limiting the negative impacts of utilisation of natural resources through AMMO protocols and monitoring. The Project will contribute to Strategic Goal B, *‘Reduce the direct pressures on biodiversity and promote sustainable use’* through reducing the rate of loss, degradation and fragmentation of the natural habitats of the CFS and encouraging the sustainable management of agriculture and forestry through sustainable landscape management plans. Strategic Goal C, *‘To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity’*, will be contributed to by strengthening wildlife crime law enforcement capacity so preventing the extinction of the Malayan tiger and other species targeted for wildlife crime, with an aim to increase the tiger population by 20%; improving mitigation measures for HWC conflict. The Project will contribute to Strategic Goal D, *‘Enhance the benefits to all from biodiversity and ecosystem services’*, through the safeguarding the provisional ecosystem services of the CFS, namely water provision, and the involvement of indigenous and poor communities in sustainable resource use activities with an emphasis on gender equality; avoiding emissions of carbon through the gazettment of at least 20,000 ha forest as well as sequestering carbon through ARR activities in at least 4,000 ha semi-degraded forest. Finally, the Project will contribute to Strategic Goal E, *‘Enhance implementation through participatory planning, knowledge management and capacity building’*, through improving the knowledge base of biodiversity and ecosystem services values of the CFS via developing and introducing relevant tools for monitoring these aspects and applying them to landscape management, and improving information sharing mechanisms; mobilising financial resources for CFS conservation through PES schemes, fiscal transfers, corporate biodiversity and carbon offsets and voluntary conservation levies. Altogether these measures will improve capacity for biodiversity management, sustainable resource use and CFS conservation as a whole.

268. The Project addresses the LD-3 objective “Reduce pressures on natural resources from competing land uses in the wider landscape” through the development of integrated land management plans. Into these plans the use of biodiversity, ecosystem and carbon stocks monitoring tools, ecosystem service valuation tools, and GIS-based decision making tools will be incorporated for scientifically and economically sound decision making.
269. The Project also addresses the LD-3 objective “Increased investments in integrated landscape management” by diversifying and increasing funding sources for conservation. The most significant of these measures is the implementation of hydropower PES schemes, which will not only provide a sustainable source of funding for the CFS but will demonstrate to land users the true economic value of conserving the ecosystems of the CFS. Other measures include the earmarking of specific funds for conservation through fiscal transfers at the government level, implementing voluntary conservation levies targeting the public sector (primarily tourists and users of roads which currently obstruct wildlife movement), and targeting the private sector through corporate biodiversity and carbon offsets.
270. Finally, the Project addresses SFM/REDD+ Objective 1: “Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services”, through the development and implementation of sustainable landscape management plans, which will cover approximately 693,500 ha of critical forest landscape in the CFS, incorporating tools such as the environmental management and mitigation measures hierarchy, for use in land-use planning. The Project aims to gazette at least 20,000ha of critical tiger corridor habitat through the implementation of Logged-to-Protection Forest practice, in line with the SFM principles of VCS AFOLU. It will



also conduct ARR activities in at least 4,000ha of semi-degraded forest, with a mix of native species. These activities will result in the reduction of forest degradation threats and the enhancement of carbon pools. As part of funds diversification, a hydropower PES scheme will be piloted, and will ensure the sustainable flow of water sources and ecosystem-related incomes for the local communities as well as a secured carbon store. The monitoring tools developed and introduced will enhance the institutional capacity to account for carbon emission reduction and increases in carbon stocks.

### ***LINKAGES WITH GEF FINANCED PROJECTS***

271. GEF currently supports a broad range of initiatives in Malaysia. The Project will collaborate closely with, and build on the findings of, several of these initiatives without any duplication of the efforts made. It will build on the outputs, outcomes and lessons emanating from the GEF/UNDP supported Conservation of Biological Diversity through Improved Forest Planning Tools Project, which is developing decision making tools for determining timber harvesting protocol and regime in order to contribute to improvement in the maintenance of biodiversity and ecosystem services in tropical forest landscapes managed primarily for timber production. The Project will also closely collaborate with two GEF/UNDP financed projects in Peninsular Malaysia and Sabah: “Enhancing Effectiveness and Financial Sustainability of Protected Areas”, which will establish a performance based payment mechanism to strengthen PA management, establish a government conservation trust fund, as well as supporting improving management effectiveness within the PAs; and “Biodiversity Conservation in Multiple-Use Forest Landscapes in Sabah”, aiming to institutionalise a multiple-use forest landscape planning and management model within the State of Sabah.
272. The increase in management effectiveness of the PA systems in Peninsular Malaysia will directly complement the objectives of the proposed project, which will enhance the management of areas between PAs. The piloting and enhancing of multiple-use forest landscape planning and management and the development of alternative revenue generating mechanisms such as biodiversity offset schemes and PES schemes will provide tools and experiences that could be adapted to the situations in the target states for the IC-CFS Project. A regular meeting between the three projects will be organised during the implementation.

***Table 13. Directly Associated GEF Financed Projects in Malaysia***

<b>GEF-ID</b>	<b>Project Name</b>	<b>Focal Area</b>	<b>Status</b>
<b><u>1176</u></b>	Conservation of Biological Diversity through Improved Forest Planning Tools	Biodiversity	Complete
<b><u>3906</u></b>	Enhancing the Effectiveness and Financial Sustainability of Protected Areas	Biodiversity	Under implementation
<b><u>4182</u></b>	Biodiversity Conservation in Multiple-Use Forest Landscapes in Sabah	Biodiversity	Under implementation

273. **Conservation of Biological Diversity through Improved Forest Planning Tools.** This project aims to improve the management of forestry production systems by developing aids and tools for decision-making and best-practice in timber plantations with regards to sustainable harvesting and the conservation of biodiversity and ecosystem services. The tools will then be disseminated for broader application.

274. **Enhancing Effectiveness and Financial Sustainability of Protected Areas in Malaysia.** This project aims to establish a uniform PA system for the whole of Peninsular Malaysia with a performance-based financing structure in order to combat the lack of efficiency and capacity of current PA management systems, and the lack of understanding by PA authorities of the importance of PAs and consequent lack of incentive to invest in PA management. This is expected to result in improved management effectiveness in addressing the increasing threats to biodiversity in 886,000 ha of terrestrial wildlife PAs, and also to provide an example for all other PAs in Malaysia. The three target PAs for site level interventions are within the CFS.
275. **Biodiversity Conservation in Multiple-Use Forest Landscapes in Sabah.** This project aims to set up an integrated management system across three PAs and their connecting landscape for all land uses, including include timber production, tree plantation, rehabilitated forests and conservation purposes. The project's ultimate goal is for the mainstreaming of biodiversity, ecosystem functions and resilience into a sustainable land use plan. It will provide an enabling environment for multiple use, financing, management and protection of forest landscapes; a demonstration of multiple-use landscape planning and management systems; and a demonstration of innovative sustainable financing methods for this type of management system.

### ***FIT WITH UNDP COUNTRY PROGRAMMES***

276. With respect to SFM, UNDP is central to the implementation of the UN-REDD programme. UNDP is working in 29 countries around the world on SFM and REDD+, focusing on forest governance frameworks, planning, and monitoring. The Project fits very closely with these principles by implementing sustainable forest landscape management systems including ARR activities and gazettement of critical tiger corridor habitat, as well as improving governance of land uses, strengthening institutional frameworks, landscape planning and compliance, and monitoring of biodiversity, ecosystem services and carbon storage under different management systems. The UNDP Country Programme Document (CPD) for 2013-2015 includes a goal for 'a climate-resilient growth strategy ensuring the equitable and sustainable use of environmental resources, incorporated into the 10<sup>th</sup> Malaysia Plan, the outcome of which is 'strengthened institutional capacity for managing climate change, including achieving... an enhanced national framework for biodiversity management of the central forest spine in Peninsular Malaysia...'. Strengthened institutional capacity for biodiversity management in the CFS is one of the primary aims of this Project, and will be achieved through the strengthening of current management structures, and the establishment of new structures where necessary, specifically for sustainable land management and law enforcement. The resulting improvement in forest ecosystem health and extent will help to mitigate the impacts of climate change.
277. Through the establishment of several sustainable financing mechanisms such as PES schemes and corporate biodiversity offsets, this project fits within the UNDP CPD covering 2008-2012, directly contributing to the achievement of CPD Outcome 3, "Improved environmental stewardship through sustainable energy development and environmental management". Through the establishment and/or enhancement and implementation of sustainable landscape management plans in three priority areas of the CFS, including the use of watershed PES mechanisms, the Project will contribute to the component outcomes of "Enhancing environmental management of biodiversity and natural resources, including water resource management" by fulfilling the intended output of "implementation of improved integrated ecosystem management". By involving all stakeholders the Project will ensure the sustainable integration of all land uses within the ecosystem.



278. The Project also directly implements the intended output of “Incorporation of NPP elements into structure and local plans” under the component outcome of “Incorporation of environmental considerations into planning and development of non-environmental agencies”, by acting to conserve the CFS, in support of Policy 19 of the NPP of 2005. It also supports the NPP-2 (2010-2020) by using large-scale spatial planning in land use management schemes, in order to maintain biodiversity and ecological stability, as well as by developing PES mechanisms. In support of the same outcome, the Project aims to mainstream biodiversity and ecosystem services in economic development, by developing and introducing tools for determining optimal land uses based on the economic values of biodiversity, ecosystems and other uses of resources, as well as demonstrating the viability of revenue generation from PES schemes.
279. The Project will also contribute to the 7<sup>th</sup> Millennium Development Goal to ‘Ensure environmental sustainability’ through using and encouraging the principles of sustainable development; reducing biodiversity loss; increasing the proportion of land covered by forests and reducing CO<sub>2</sub> emissions; conserving water resources; finally, helping to ensure that access to water supplies is sustained in the long term through conservation of the CFS and implementation of PES schemes. It will also increase the area of protected habitat on the peninsula and will reduce threats to a number of species threatened with extinction.

### ***COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND DRIVENESS***

280. Malaysia is a signatory of the CBD, and is committed to achieving the ‘Provisional framework of goals, targets and indicators to assess progress towards the 2010 Biodiversity Target’. Its Fourth National Report explains that Malaysia is taking many actions to achieve Goal 4, ‘Promote sustainable use and consumption’: at the end of 2007, eight states in the peninsula had been assessed and awarded the Forest Management Certificate and currently almost all selectively logged forests are certified under the Malaysian Timber Certification Scheme (MTCS) or the Forest Stewardship Council (FSC). Malaysia is committed to implementing the CITES obligations and has other national laws besides the International Trade in Endangered Species Act 2008, such as the Wildlife Conservation Act 2010, to contribute to its target of no species endangered by international trade.
281. In order to achieve Goal 5, ‘Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced’, Malaysia is taking efforts to establish and maintain PAs, protection PRFs and other conservation areas; develop and implement the CFSMP; and invest in mangrove replanting projects. Goal 7, ‘Address challenges to biodiversity from climate change and pollution’, is being worked towards also through the CFS initiative, by increasing resilience of biodiversity to climate change indirectly through improved habitat and ecosystem service health.
282. The establishment of conservation areas acts as a means to achieve Goal 8, ‘Maintain capacity of ecosystems to deliver goods and services and support livelihoods’; for example, by 2008 657,589 ha of PRFs were gazetted for their watershed functions. Various projects have been initiated in Malaysia in order to achieve Goal 9, ‘Maintain socio-cultural diversity of indigenous and local communities’, for example Sarawak Biodiversity Centre’s Traditional Knowledge Documentation Programme, initiated in 2001.
283. By signing the St. Petersburg Declaration on Tiger Conservation (2010), Malaysia has committed itself to several targets, some of which include a) doing everything possible to effectively protect tiger habitats (for example by mainstreaming biodiversity into planning and

development); b) working collaboratively to eradicate poaching and illegal trade of tigers; c) engaging with indigenous and local communities to gain their participation in biodiversity conservation and reduce HTC (for example via sustainable livelihoods); d) increasing the effectiveness of tiger and habitat management (for example through increasing institutional capacity and developing knowledge-sharing platforms); and e) exploring domestic funding, including mechanisms such as PES.

284. Other conventions that Malaysia is signatory to include the United Nations Framework Convention on Climate Change (UNFCCC) 1992, the International Tropical Timber Agreement (ITTA) 1994, and the Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) 1971. This shows the country's support of global conservation initiatives and its willingness to contribute to their goals.

### ***FIT WITH NATIONAL PRIORITIES AND PLANS***

285. The Federal Government of Malaysia has committed to improving the sustainability of forest management in biodiversity-rich natural forest areas, with the aim of conserving biodiversity and securing critical ecosystem services. The Project plans to contribute towards the implementation of the National Physical Plan (NPP); first developed in 2005 by the federal Department of Town and Country Planning, the NPP provides a spatial framework for sustainable development in Peninsular Malaysia. It is also the key tool for implementing the national programme to combat land degradation under UNCCD<sup>106</sup>. The NPP's Policy 18 (retained in NPP-2 as Policy 22) specifies that "Environmentally Sensitive Areas shall be integrated in the planning and management of land use and natural resources to ensure sustainable development". In particular, the Project supports implementation of the NPP's Policy 19 (in NPP-2 as Policy 23), which states that "A Central Forest Spine (CFS) shall be established to form the backbone of the Environmentally Sensitive Area Network." The Malaysian government has already developed a plan for the enhancement of ecological linkages within the CFS, which this project contributes directly towards through its focus on strengthening capacity for CFSMP management and implementation at both federal and state level, and the provision of best-practice examples in three priority forest landscapes within the CFS.
286. The Project plans to contribute to many of the 15 strategies under the NBSAP 1998, particularly strategies 1) 'Improve the scientific knowledge base' (through introducing and enhancing mechanisms for biodiversity, ecosystem and carbon monitoring and data management and sharing); 4) 'Strengthen the institutional framework for BD management' (by building capacity for sustainable landscape management within federal and state CFS committees as well as for wildlife and forestry crime law-enforcement units, and supporting mechanisms for directing funds towards conservation); 6) 'Integration of BD considerations into sectoral planning strategies' (through sustainable landscape management plans and decision-making tools based on biodiversity, ecosystem services and carbon stocks and the economic values of these); and 15) 'Establish funding mechanisms' (by developing PES schemes and other conservation funding mechanisms).
287. Through its development and enhancement of integrated and sustainable forest landscape management plans and improvement of biodiversity monitoring mechanisms for measuring

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<sup>106</sup> Department of Agriculture, 2006. *National Report on the Implementation of the UNCCD: Combating Land Degradation and Promoting Sustainable Land Resource Management in Malaysia*. Malaysia: Department of Agriculture

land-use impacts, the Project will also contribute to the achievement of Malaysia's aim for improved sustainable forestry within a) the National Forestry Policy (1992) which states that forests must be conserved and managed sustainably, with a comprehensive programme in community forestry and active participation of local communities in management projects; and b) the Third National Agriculture Policy (2006) which states that sustainable management and utilisation of resources should be the guiding principle for agriculture and forestry.

288. The Project will greatly enhance efforts directed into reducing wildlife crime and conserving the Malayan tiger. For example, it is directly aligned with the NTCAP 2008-2020 with the aim of conserving the tiger population by enhancing the connectivity of habitat blocks within the CFS, combating poaching and reducing human wildlife conflict. The underlying philosophy of the NTCAP is that wider benefits will accrue as a consequence, including protection of threatened flora and fauna and multiple ecosystem services. The Project will also directly contribute to the implementation and enforcement of the International Trade in Endangered Species Act (2008) and the Wildlife Conservation Act (2010) through strengthening the law enforcement system against wildlife crime. Consequently, this Project will help to secure Malaysia's status as one of only 14 tiger range countries.
289. By including a focus on the valuation of ecosystem services and generation of natural resource-related revenue, the Project contributes towards several national policies and plans. For example, it contributes to Vision 2020, namely one of its 10 Big Ideas, 'Valuing our environmental endowments'. Furthermore, there are several policies which include the valuation of the environment and/or improving its status: the National Policy on the Environment (2002) states that incentives should be used to promote environmentally-friendly development; the Third Outline Perspective Plan 2001-10 emphasises the use of economic instruments for environmentally sustainable development; the Economic Transformation Programme 2011-2020 states that development plans should consider the full environmental costs before decisions are made. A Common Vision on Biodiversity 2009 takes a three-pronged approach to biodiversity management: Strengthening the protected areas system; Landscape management for biodiversity; and Mainstreaming of biodiversity into development; emphasising the need to overcome the undervaluation of biodiversity in markets and to develop financial incentive mechanisms for conservation, which this Project fully supports.

290. In general, the project will be carefully coordinated to fit in with ongoing and planned initiatives in Malaysia. The steering committees of the IC-CFS project and other GEF, UNDP-GEF and UNDP projects will all be chaired by a representative from the NRE ministry. The members of the project steering committees of these projects will comprise many of the same people representing many of the same institutions. The design of this project, as well as that of the other projects has explicitly taken into account the ongoing and planned activities of the other projects. For example, the protected areas financing project is looking primarily at conservation within protected areas while the IC-CFS project will focus on activities outside of PAs.

## **PART 2.4: Benefits of the Project**

### ***INCREMENTAL REASONING ANDEXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS***

291. First and foremost, this project will head-start the implementation of the CFSMP. Scientifically-sound and comprehensive plans have been formulated for the conservation of primary and

secondary linkages within the CFS; however, the success of these plans depends on a) sustainable landscape management, which is a relatively new concept in Malaysia; b) strong management structures at both federal and state levels, which are currently lacking; and c) adequate and continued funding, and as yet these funding sources have not been secured, with Selangor the only state to have allocated part of its budget towards the CFSMP. Therefore, there is a strong need for building institutional and local capacity for sustainable landscape management and CFSMP implementation and increasing the level of funding for its implementation. Therefore this project will be crucial for its initiation. Ultimately, the success of the CFSMP will be enhanced through a more supportive environment for conservation planning and funding and sustainable landscape management.

292. The Project aims to increase the implementation capacity of the federal and state governments for the CFSMP. It will **improve coordination** between management and implementing agencies by strengthening the management structures within the national CFS steering and technical committees and supporting the creation of state-level CFS executive units within the technical committees in each target state; all four units will act to complement and support each other's efforts in sustainable forest management. Similarly, the coordination between law enforcement agencies will be improved through the establishment of state-level WCUs, standardised reporting procedures and comprehensive intelligence gathering and sharing mechanisms. Coordinating and combining efforts of the various institutions involved in CFS management will increase efficiency by preventing duplication of efforts or conflicts of activities, as well as increasing cost-effectiveness (explained in more detail below).
293. The Project will **improve the institutional knowledge and decision-making capacity base** with regards to forest management and law-enforcement. It will develop, introduce and train relevant authorities in the use of biodiversity, ecosystem and wildlife crime monitoring systems as well as tools for ecosystem valuation, decision-making and data analysis. These tools will be used specifically for forestland use planning, allocation and management, as well as for forestry and wildlife crime law enforcement, illegal trade monitoring and sharing of criminal activity data. The Project will support the training of land use managers and development planners in the identification, planning and implementation of sustainable landscape management plans and sustainable conservation financing plans.
294. The Project will **increase the influence of biodiversity and ecosystems in development and land management planning** through incorporating the biodiversity, ecosystem and carbon stocks monitoring tools, as well as ecosystem valuation tools, into land use planning, meaning that land managers are able to identify the benefits of including conservation areas within landscapes and have the ability to allocate land uses accordingly. The Project will develop several diverse conservation funding mechanisms such as PES schemes and biodiversity offsets which support the conservation of the CFS and improve land resource quality for land users. These funding mechanisms will be incorporated into sustainable financing plans for landscape management, thus playing a key part of landscape management. With successful sustainable landscape management and conservation funding mechanisms in place, the environmental and economic benefits will be made evident to other states, thus helping further to mainstream biodiversity into land planning.
295. It will **increase support** for CFS conservation by involving all stakeholders in planning and decision-making with regards to sustainable landscape management plans, ensuring that their needs are taken into account, including those of local and indigenous communities. In particular, local livelihoods such as forest resource-based handicrafts and ecotourism activities will be

enhanced through the establishment of CBOs, thus increasing the linkage between conservation and livelihood incomes. Together with HWC mitigation measures, the relationship between land users and natural habitats and wildlife will improve. Finally, the development of sustainable conservation funds will ensure the continued allocation of funds for conservation activities without sacrifices having to be made within other state budgets.

296. The Project will **enhance the effectiveness of NTCAP**. It will directly support the NTCAP by supporting sustainable forest landscape management in three tiger priority sites and gazetting an additional 20,000 ha of critical tiger corridor forest, which will increase connectivity between major forest complexes and support greater movement of tiger populations. The Project will also significantly improve the wildlife crime monitoring and intelligence system and increase the capacity of wildlife law-enforcement agencies which will reduce the illegal poaching of tigers. It will strengthen biodiversity monitoring mechanisms so that populations of the tiger and its prey may be better monitored; finally, it will support efforts in HTC reduction with improved prevention and mitigation measures.
297. The immediate **global benefits** are sustainable management of 5.3 million ha of predominantly forested land in the tropics with an array of globally significant biodiversity, as well as achievement of Malaysia's targets set under the Global Tiger Initiative. Specifically, 693,500 ha of land deemed a priority area in both the CFSMP and NTCAP will be under sustainable forest landscape management; with strengthened institutional capacity there will be no net loss of forest within 4.2 million ha of unprotected forest in the CFS, with 95% remaining natural forest. Due to increased connectivity and significantly strengthened law enforcement capacity, the Malayan tiger population will increase by 20% from its current estimated 500 individuals. Through safeguarding of the CFS by increasing the compatibility of different land uses with biodiversity conservation and maintenance of multiple ecosystem services as well as by realising payments for ecosystem services, the Project is directly contributing to arresting and reversing the global trends in land degradation, in particular deforestation. Specific activities include: 1) increasing the status of at least 20,000 ha of valuable forest from state or production forests to protected forests status in line with the Integrated Forest Management principles of VCS AFOLU, resulting in avoidance of 1.49 million tC emissions; 2) rehabilitating at least 4,000 ha of vital tiger habitat using native species reforestation in line with ARR category of VCS AFOLU, which will trigger sequestration of roughly 17,600 tC/yr; 3) development of viable PES mechanisms under Component 3. The successful implementation of these PES mechanisms will support the sustainability of the peninsular's water supply, of which the CFS provides the vast majority. In addition, the establishment of PES mechanisms will provide the world with a model for low carbon, climate resilient development.
298. With regards to biodiversity, the Project's primary focus is on conservation of the tiger; through greatly improved law enforcement capacity wildlife crime will be significantly reduced, resulting in the conservation (and increase in population) of the Malayan tiger in one of only 14 tiger range countries in the world. However, the positive impacts of improved law enforcement will cover numerous other species targeted by poaching, many of which are globally threatened.
299. Securing sustainable management of forests in the CFS will have significant socioeconomic benefits to the country at both **national and local levels**. Nationally, it will increase the sustainability of ecosystem services for Malaysia, in particular of water resources. It will also prevent significant costs, both in terms of asset loss and human lives, of possible natural disasters including floods and landslides. In addition, by protecting the globally significant tiger population and other endangered wildlife, Malaysia's attraction as a major tourism destination

(tourism is already the second largest contributor to the GDP) will continue to increase, with a real potential for substantially increasing tourism revenue and employment creation. The secure CFS will also provide amenity, scientific research opportunities and spiritual and cultural values.

300. On a local level, communities, especially the Orang Asli, will be able to benefit from enhanced livelihoods based on sustainable use of forest resource base, including ecotourism and handicrafts. The establishment of conservation funding and PES mechanisms will provide some local revenue. Community members will participate in the landscape level management planning and implementation process, with agreed sustainable use regimes and monitoring mechanisms. In order to ensure socioeconomic benefits and their sustainability, local level activities will be carried out with the participation of local stakeholders, with full consideration given to gender dimensions. The involvement of the Orang Asli in law enforcement activities, as well as in ecotourism and handicrafts projects, could potentially initiate the strengthening of their land rights and pave the way for the mainstreaming of CBNRM in landscape management in the future. Finally, following the UNDP and GEF gender policies and strategies, special attention will be placed on gender equity; in particular the Project will ensure participation of women in livelihood enhancement activities and in the landscape management planning processes.

### ***COST-EFFECTIVENESS***

301. In the 'business as usual' scenario, with the exception of the primary landscapes covered by the CFSMP, governance and management of land uses in forest landscapes will remain fragmented, resulting in missed opportunities for cost reductions through efficiencies of scale and cooperation across landscapes. Within this GEF project, such opportunities will be captured, thus resulting in significantly more cost-effective forest landscape management and providing an example for similar management in other states.
302. The CFSMP contains plans for each landscape holding a primary or secondary linkage; although comprehensive, the implementation of these plans may be negatively affected by the lack of capacity and financial resources for its implementation. The IC-CFS project will support its implementation in the three focal landscapes and ensure that activities are undertaken as cost-effectively and efficiently as possible, based on the factors below.
303. **Funds generation.** The Project will be more cost effective than the baseline scenario of largely government or ad hoc funding for conservation projects, since investments will be partly directed towards the exploration of additional streams of funding. For example, the PES scheme to be piloted in Perak (then replicated in Johor and Pahang) will generate a sustained income for conservation and thereby reduce the level of investment needed for new projects, as would happen were funding to become depleted. With the initial set-up costs covered by this project, this financing mechanism will continue at low running costs, thus ensuring cost-effectiveness of the Project. In addition, funds generated through the PES scheme as well as other diverse sources such as fiscal transfers, voluntary conservation levies and corporate biodiversity and carbon offsets, will be placed in a dedicated conservation fund to ensure a secure source of conservation financing as well as increased transparency and accountability of funding.
304. **Improved management in unprotected landscapes.** This project is considered more cost effective than investing in PA management or expansion alone. State governments have the ability to de-gazette PAs without public consultation, and so could make these activities

redundant. A PA focus does also not take into account the surrounding landscapes, which are crucial in retaining connectivity between PAs and core forest areas. Without consideration for these areas which allow the movement of wildlife between core areas, success in terms of increases in wildlife populations will be limited, and therefore cost-effectiveness too will be reduced. Instead, the Project addresses issues of unsustainable land uses between forest landscapes and illegal activities within forests. With increased connectivity between forest patches, including PAs, the effects of connectivity will be on a much wider scale than if focusing on PAs alone.

305. **Complementation of activities.** Linked with the above, the greater coordination between PA management authorities, other land use authorities, law enforcement agencies as well as local organisations and private landholders, will reduce the risk of either unnecessary replication of activities or conflicting activities, both of which would reduce cost-effectiveness.
306. **Planning for sustainable land uses.** The Project's focus on sustainable landscape management planning, whereby biodiversity and ecosystem services considerations are included, will also have a long-term cost-saving impact through the implementation of preventative measures rather than the alternative of post-crisis responsive actions. For example, improving forest connectivity and implementing PES mechanisms as part of integrated landscape management plans will prevent the degradation of watershed regulation in the CFS, which would otherwise lead to water shortages and high costs incurred as a result.
307. **Replicability.** Although the Project focus lies in forest connectivity within just three states, the activities are designed so that it will be replicable across all other states in Malaysia. For example, the formulation and introduction of tools and models for incorporating biodiversity and ecosystem services into land-use planning will be easily transferred to other states in the Peninsula with appropriate training so that the CFSMP may be implemented elsewhere with minimal investments made into redesigning landscape management plans. Aspects of project replicability are explained in more detail below.

## ***SUSTAINABILITY AND REPLICABILITY***

308. Sustainability has been a major consideration throughout the development of this project. There are four key interlinked factors in assuring full sustainability; institutional, financial, social and environmental:

### **Institutional sustainability**

309. This project, primarily the first component, aims to strengthen frameworks and build capacity within both federal and state institutions so that both levels of governance and management are able to continue the sustainable management of the CFS with a unified approach. Institutional structures such as state-level CFS executive units will be emplaced for strengthened resources and increased accountability for CFS management; a dedicated wildlife crime intelligence unit will provide an intelligence-based law enforcement system; permanent state-level WCUs will be established; a dedicated biodiversity indicator taskforce will be established to monitor the biodiversity of the CFS. However, additional measures are needed to ensure sustainability of these structures; a significant investment will be put into training relevant departments and institutional structures in the use of newly developed or introduced tools for a variety of applications such as biodiversity monitoring, ecosystem service valuations, landscape planning decision-making and wildlife crime data management. Federal and state CFS units will also be

trained in sustainable landscape management planning and sustainable finance planning. Finally, training will be given to officers involved in all areas of law-enforcement, including the WCUs, community-based monitoring networks, state forestry and wildlife law enforcement officers, members of MY-WEN and those specifically dedicated to managing confidential intelligence data, and legal officers involved in prosecutions and convictions. Capacity will also be built for DWNP to continue training sessions in activities related to law enforcement post-project.

310. In support of this, guidance and training materials regarding the above tools and activities will be produced for dissemination elsewhere as appropriate, both within institutions and across states, which will ensure that institutional expertise may be passed onto assistants and collaborators as appropriate. With enhanced information-sharing between institutions there will be more scope for learning lessons, improving methods and sharing information and ideas, which will further increase institutional sustainability.

### **Financial sustainability**

311. The third component of this project specifically targets the financial sustainability of CFS management by putting in place diverse sources of conservation funding such as a replicable PES scheme in one of the target sites, voluntary conservation levies and corporate biodiversity and carbon offsets. The combination of improved forest management and related income generation creates an incentive to continue to conserve the ecosystem service, enabling the continuous reinvestment of funds into their conservation. The Project will assist conservation managers to continue to incorporate ecosystem service values into landscape planning by working together to develop sustainable financing plans with identified investment opportunities at both federal and state levels.
312. By providing an example of financial sustainability of three target landscapes, the Project aims to enhance the overall financial sustainability of CFS conservation efforts through the replication of these schemes in other states, resulting in sustainable economic development at both local and national levels. Furthermore, by improving the state of the CFS and its wildlife, including charismatic species such as the tiger in particular, Malaysia should increase in popularity as a tourist destination, thus bringing an even greater contribution to the country's GDP.

### **Social sustainability**

313. Under the first component of the Project, members of local communities will be selected to form community-based networks for monitoring illegal wildlife and forestry activities; this will provide a source of income for these communities. The second component will involve significant participation of local land owners and indigenous communities in sustainable landscape management planning and the discussion of responsibilities, benefits and management mechanisms. It will also build capacity among local stakeholders to manage their ecosystem services appropriately. This will not only ensure that all stakeholders benefit from the landscape but they will gain an increased sense of ownership of their resources and consequently continue to support its conservation, thus sustaining their own social wealth. The Project will also enhance local livelihoods in terms of sustainability and income-generation, for example through ecotourism projects and the value-addition and marketing of handicrafts. The formation of CBOs for these purposes will help to sustain appropriate management of these livelihood schemes. Finally, through taking measures to reduce HWC, such as through local competitions to devise appropriate mitigation schemes (the Tiger Challenge), awareness programmes and improving response mechanisms, the loss experienced during conflict should be minimised and social wealth sustained.



314. This project recognises women as equal stakeholders to men, thus will encourage their participation in project activities. According to the PPG study of indigenous communities, women visit the forests to harvest NTFPs and have in-depth knowledge of forest resources. They also give great value to their forests and are therefore important participants in this project. It is essential that project outputs contribute to the social development of women in order to encourage gender equality within local communities; by adding value to the products harvested by the women, such as medicinal plants and weaving materials, and setting up viable livelihoods, this project will enhance the cultural, social, and economic status of women. Training and educating women and providing employment through eco-tourism activities, for example, will add to their empowerment.
315. Once local communities begin to receive monetary benefits from sustainable management of the forests and start to feel an increased sense of ownership as well as experience less damage from HWC, it is expected that they will continue to support these methods of sustainable forest management and in turn continue to reap the benefits, thus achieving social sustainability.

### **Environmental sustainability**

316. Environmental sustainability will be addressed through the mainstreaming of biodiversity and ecosystem services into institutional frameworks and development plans regarding landscape management; for example, via PES schemes, which will improve the sustainability of the watershed services of the CFS. Integrated and sustainable forest management at a landscape level will take into account ecological processes such as water flow through the ecosystem and the environmental cost of various land uses and, through appropriate management frameworks and decision-making tools, will ensure the continuation of all sustainable landscape management activities. In order for land-use plans to be adaptively managed, capacity will be built for monitoring of impacts of project and land-use activities on biodiversity and ecosystem services and impacts of law-enforcement activities on wildlife and forestry crime. Since sustainable landscape management will provide long term incomes for stakeholders, unsustainable resource use by stakeholders, such as overharvesting of forest resources, should be much reduced; increased capacity to enforce relevant regulations will ensure the prohibition of such activities. Furthermore, biodiversity will be protected in key areas and managed appropriately across the rest of the landscape according to assessments of both natural resource values and land-use values; by planning conservation activities appropriately, accounting for land use and development needs, environmental sustainability should be supported due to minimised conflict with land users.
317. At project completion there are expected to be three sustainable landscape management schemes in place within three states of the CFS, which have financial, social, institutional and environmental sustainability. The Malaysian federal and state governments will then have the knowledge, experience and incentive to replicate these schemes across every state in Malaysia, thus encouraging country-wide environmental sustainability; above all, the continued healthy existence of the CFS, its biodiversity wildlife and ecosystem services.

### **Project Replicability**

318. The two primary aims of this Project are to a) demonstrate to Peninsular Malaysia the appropriate methods to use to successfully implement the CFSMP through enhancing current efforts in three important forest landscapes and b) provide support to the NTCAP for effectively completing their objectives through emplacing improved law enforcement and crime monitoring systems in the three tiger priority areas. The successful results of the Project with regards to

CFSMP implementation should then encourage all other CFS states to follow with similar methodologies to support their individual CFS plans, particularly with regards to conservation financing mechanisms, allowing the fruition of the full CFSMP and ultimately the conservation of the entire CFS. The implementing parties of the NTCAP, too, will be able to follow examples set in the Project's activities. Therefore, most project outputs are designed to be replicable.

319. Firstly, several outputs and activities of this project are based on the development or application of tools for monitoring and managing information, which can easily be used by other states and applied to their own circumstances. These include: 1) an improved national system for monitoring biodiversity, habitats, ecosystems and carbon stocks for use in landscape management planning; 2) the application of the environmental management and mitigation measures hierarchy in land use planning; 3) ICT-based ecosystem service valuation tools with models for determining trade-offs between land use options, for use in landscape management planning; 4) a GIS-based decision support system for landscape management planning, incorporating biodiversity, ecosystem services and carbon stocks; 5) the application of SMART tools in law enforcement activities; and 6) intelligence data management system such as i2 ibase in place for improved wildlife crime law enforcement.
320. The collaborative formulation of sustainable management and financing plans for each forest landscape, as well as at federal level, should also contain replicable aspects for other states: although developed specifically for each focal landscape, the principles applied will be replicable in other landscapes.
321. Several new sustainable conservation financing schemes will be implemented in each pilot state. A PES scheme will be trialled in Perak; voluntary conservation levies will be set up around Taman Negara National Park in Pahang and along environmentally-impacting roads such as Federal Route 8 in the Sungai Yu corridor; and corporate biodiversity or carbon offset schemes will be piloted with several companies already involved in CESR activities. The testing of several different financing methods will enable the determination of the most effective methods, which can then be replicated elsewhere. In addition, HWC mitigation measures will be piloted in Belum-Temengor and Endau-Rompin; if successful, these may be replicated in other high HWC areas. Ecotourism activities will be piloted in Greater Taman Negara, handicrafts projects piloted in Belum-Temengor, and in all three sites Orang Asli will be involved in community-based monitoring networks for law enforcement. If successful, these activities may be replicated within other state of the peninsula and beyond.
322. As part of all project outputs, project experiences and lessons learned will be documented for dissemination to other relevant parties across states as appropriate. In particular, where training is included in project outputs, training and guidance documents will also be produced for dissemination. Malaysia is one of many high-biodiversity countries with examples of unsustainable conversion of forested habitats. Therefore, with the CFSMP implemented successfully in Malaysia, other countries, particularly within South-East Asia, will be able to learn from the Project's experiences and use its principles and components as guidelines for their own large-scale forest conservation projects. Alongside this, other tiger range countries in Asia will be able to learn from the successful implementation of the NTCAP and improved wildlife crime law enforcement in the peninsula.

### ***CLIMATE CHANGE ADAPTATION***

323. Climate change adaptation is the process to improve society's ability to cope with changes in

climatic conditions across time and policy scales. It will be increasingly important to enhance the efficiency of water use and to manage the supply and demand of water by means of the conjunctive use of water resources, including landscape level approaches to water management. Spatial planning that takes ecosystem requirements with a landscape scope into consideration will be crucial.

324. The health of the CFS will be essential for buffering the effects of climate change such as drought, flooding and other extreme weather events, by increasing absorption and reducing fluctuations of water flow through the system. Also importantly, the forests of the CFS store over 85% of the 1.139 billion tonnes of carbon stocks of the peninsula. Their conservation and sustainable management, therefore, is essential for mitigating the effects of climate change and keeping further carbon emissions to a minimum.
325. Malaysia is predicted to experience a loss in habitat quality as temperature and precipitation changes cause species to shift; this will result in reduced resilience of its forests to extreme events, invasive species and disease, and a degraded ecosystem which cannot a) provide ecosystem services and b) sustain biodiversity. This project will improve the resilience of the CFS by increasing connectivity, and thereby reducing poor quality 'edge' habitats, through sustainable forest management. It will provide three active examples of large-scale spatial planning for natural resource utilisation which take into account ecosystem services, biodiversity and carbon stocks. Furthermore, the implementation of a watershed PES scheme and other conservation financing schemes will result in sustainably financed forest and watershed management in the target landscapes. By encouraging the mainstreaming of biodiversity into development plans, natural habitats will be less negatively affected by development activities and will therefore remain more resilient to climate change. Finally, by enhancing the sustainability and income-generating potential of local livelihoods, households will still have a source of income when unfavourable climatic conditions reduce agricultural productivity. The socio-economic status of these communities should improve and as a result their dependence on natural resources should decrease, in turn reducing their vulnerability to climate change in this regard.
326. Replication of the Project across all other states will result in improved health of the entire CFS, increasing its resilience to climate change and ability to provide good quality habitats for wildlife and a sustained water supply and other provisional services for most of the population of Peninsular Malaysia.

## **SECTION III: MANAGEMENT ARRANGEMENTS**

### **PART 3.1: Project Management and Implementation**

327. The project will be implemented over a period of six years beginning in 2014. The project implementation plan is presented below. An inception period will be used to refine the implementation plan where appropriate and bring on board fully the relevant stakeholders for implementation. It will also be used for establishing the baseline for the indicators where they are missing.

## ***EXECUTION MODALITY***

328. The project will be executed under National Implementation (NIM) modalities where UNDP will be the National Implementing Agency, acting as the provider of the services and facilities that come about through a successful proposal. The project will be funded by GEF through UNDP, which is accountable to GEF for project delivery. UNDP thus has overall responsibility for supervision, project development, guiding project activities through technical backstopping and logistical and financial support.
329. The NRE shall retain overall responsibility for UNDP support and shall be the National Executing Agency. Within NRE, FDPM and DWNP will be the chief executors of the project, with FDPM taking overall responsibility and housing the project. FDPM will work in close cooperation with DWNP, which shall be allocated specific wildlife based elements of the project) and with the Perak, Johor and Pahang state governments that shall receive direct support and engagement, as well as the NRE Legal Division and state WCUs. Additional government agencies and networks such as MY-WEN and MYCAT will gain support through close liaison throughout and engagement in specific specialist activities as appropriate. FDPM will also coordinate activities on a local pilot level through direct engagement with its provisional level offices, sister government agencies and local stakeholders. Further details on the roles are defined in the strategic results framework and the stakeholder involvement plan.
330. The project will thus be primarily federal government-managed but in close collaboration on an implementation level with state governments and local stakeholders including plantation managers and indigenous communities as well as with civil society and private sector partners.

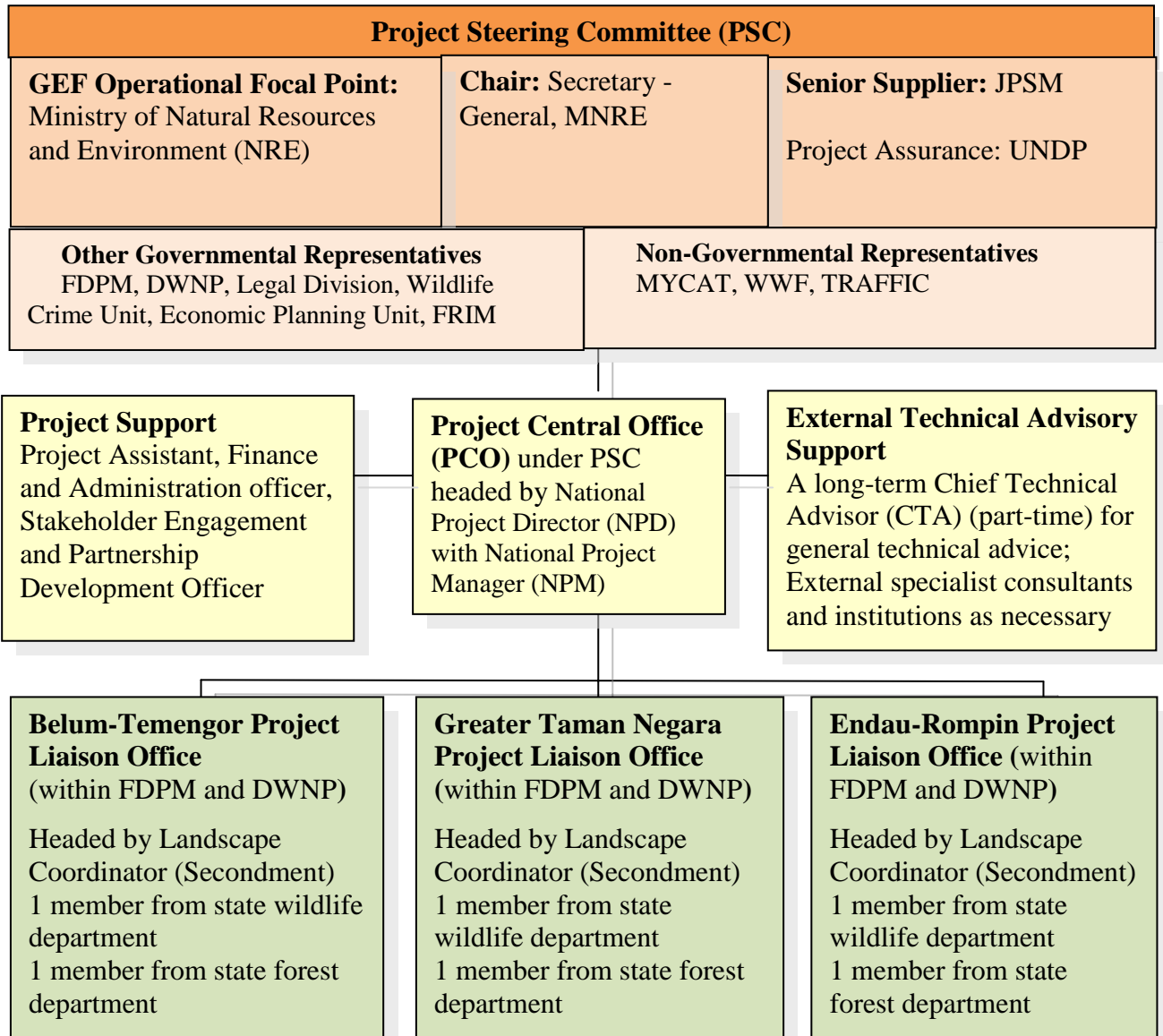
The project will link directly to the GEF Focal point through the project steering committee and have a close association to other federal ministry officials in ensuring top-level project oversight.

## ***IMPLEMENTATION MODALITY***

331. Coordination among the federal government ministries and state governments will be achieved through creation of a **Project Central Office (PCO)**. A Project Steering Committee (PSC) will allow for project assurance and technical advisory support from UNDP and will oversee the PCO. The PSC will allow not only high-level coordination between government agencies, but will also provide a mechanism for open and effective project management.
332. Project activities will be implemented at the overall management and landscape levels. The PCO will be responsible for overall coordination of project activities, but in particular, it will coordinate national and intra-landscape level activities that are largely linked to policy and systematic and institutional capacities for managing landscapes.
333. The PCO will also be responsible for coordination and mainstreaming of lessons and experiences into government operations, lessons learnt from activities in other related GEF funded projects and linking with additional ongoing related projects. Funds will flow from UNDP to a dedicated project account, managed by NRE. The PCO will be headed by a National Project Manager (NPM), for 46 weeks per year, employed by the project, who will supervise the implementation of the project and ensure various technical components are implemented according to requirements. The NPM will be supported heavily by a part-time Chief Technical Advisor (CTA), funded by the project, to provide technical advice for all project activities as and when necessary. When requirements for technical skills fall beyond the skills of the CTA,

specialist external consultants or institutions shall be contracted. Such technical skills required may include for the biodiversity indicator and monitoring framework, the ecosystem valuation and economic/ecological modelling, intelligence-led law enforcement, community livelihoods development, or the development of the PES scheme. With regards to individual consultants, it has proved difficult to find national consultants for a number of projects in Malaysia in the past; therefore, it is expected that national expertise in these fields may be lacking and so a large proportion of the consultancies will be contracted to international consultants in order to achieve greater success in a more cost-effective manner. In particular, the CTA is highly likely to be an international consultant. These factors have been accommodated in the project budget. Where local expertise is available for a particular consultancy, they will be selected. The NPM and CTA will be supported by one Landscape Coordinator per landscape, with a specific liaison office provided by DWNP or FDPM, each then supported by one member of each state level wildlife and forestry department, dedicated to support the implementation of the project via the PCO on the landscape level. The Landscape Coordinator will liaise between all involved agencies, departments and NGOs as necessary, with monthly review and planning meetings. The NPM will also be supported by a project assistant, a finance and administration officer, a stakeholder engagement and partnership development officer, as well as volunteer researchers when necessary.

## PROJECT ORGANISATION STRUCTURE



## **The Project Steering Committee**

334. The PSC will be chaired by an agreed senior MNRE representative, likely from FDPM, who will also take the role of National Project Director and shall be responsible for supervising project development, guiding project activities through technical backstopping and for contracting staff where necessary. In total one representative of each government agency shall be a member (membership to be finalised at inception, but likely to include FDPM, DWNP, Legal Division, the federal WCU and the federal EPU). UNDP will have one representative present who will advise the PSC in its deliberations and may vote in cases where a majority has not been met. Members shall have been elected during the Inception meeting. The PSC shall report to UNDP and GEF.
335. The PSC members shall meet at least twice in a year prior to PCO meetings, with a specific member responsible for taking and distributing minutes. Other PCO staff working under the NPM shall attend meetings of the PSC by invitation and only on a need to basis.
336. The role of the PSC will be to:
- Provide strategic advice to the PCO for the implementation of project activities to ensure the integration of project activities with poverty alleviation and sustainable development objectives
  - Ensure coordination between the project and other ongoing activities in the country
  - Ensure interagency coordination
  - Ensure full participation of stakeholders in project activities
  - Provide technical backstopping to the project
  - Assist with organisation of project reviews and contracting consultancies under technical assistance
  - Provide guidance to the PCO

## ***PROJECT COORDINATION***

337. The PCO project management team will be responsible for day-to-day oversight and coordination of the implementation of project activities including supervision of activities contracted to consultants by government. The NPM heading the PCO will report to the Project Steering Committee, on a quarterly basis and maintain a direct liaison with UNDP through the Energy and Environment cluster. The NPM shall be assisted by an Administrator/ Accountant and will be based at NRE headquarters. The NPM will receive reports and feedback from the pilot level, fed through NRE liaison officers for the three offices within the three states (Perak, Johor and Pahang). Each liaison officer shall act as a lynch pin to coordinate activities on a pilot level between the partners.
338. The NPM will link with other GEF project coordinators sharing lessons learnt relevant to mainstreaming activities and also to other government led initiatives such as institutional strengthening activities, policy and preparation of management plans. The NPM will report directly to the PSC on the basis of the approved workplan and participate directly at the PSC

with the agencies reports and workplan approved at the same meeting, and shall work under the guidance of outputs from PAC meetings.

### ***LANDSCAPE LEVEL PROJECT IMPLEMENTATION***

339. Overall management of activities in these pilots will be managed by the PCO through the Landscape Coordinator in each landscape (three in total). This Landscape Coordinator will be secondees of the government and will be supported for project implementation by two state-level government members, one each from the forest and wildlife departments. The PSC will provide guidance for implementation and both the NPM and CTA will conduct regular site visits. Where there are lessons learnt, intra-landscape / intra-pilot area crossover issues, or higher-level engagement required, responsibility will be decreed to the NPM with support from the CTA.

### ***PROJECT COMPONENTS***

340. The project will comprise three complementary components. Each addresses a different barrier and has distinct outcomes. Overall management of these shall be coordinated by the PCO under the leadership of the Project Steering Committee.

### ***INCEPTION SESSION***

341. The project will begin with an inception session. The Project Steering Committee, with the support of the NPM, will review the project document prior to the meeting and recommend revisions in light of the prevailing situation. This may include updating the log-frame and institutional arrangements. The NPM will present the finalised work plan and first quarterly plan to the Steering Committee, copied to the PSC. All key stakeholders will participate and the training will offer an opportunity to ensure coordination between all the players and establish a common ground of understanding necessary to ensure the smooth running of project implementation.

342. A fundamental objective of the Inception Session (IS) will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalise preparation of the project's first annual workplan on the basis of the project's log frame matrix. This will include reviewing the log frame (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalise the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.

343. Additionally, the purpose and objective of the IS will be to: (i) introduce project staff with the UNDP-GEF expanded team which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and the project team; (iii) provide a detailed overview of UNDP-GEF reporting and M&E requirements, with particular emphasis on the Annual Project Implementation Reports (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Reviews, as well as mid-term and final evaluations. Equally, the IS will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget re-phrasings.



344. The IS will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, and broadened, as needed, in order to clarify each party's responsibilities during the project's implementation phase.

### ***TECHNICAL ASSISTANCE***

345. Short-term national and international technical assistance will be provided by the Project, on a consultancy basis, in order to overcome barriers and achieve the project outputs/outcomes where the skills or knowledge required lie beyond the limits of the CTA. Technical assistance will be directly contracted by the PSC, through a transparent procurement process (i.e. the development of Terms of References and recruitment) following UNDP regulations and will directly assist the implementing entities and report to the Project Steering Committee. Many of the project components are innovative and need some level of consultancy input. These include issues such as landscape management planning, ecosystem economics, wildlife crime interception, institutional capacity building and gap analysis. Where needed, these consultancy inputs have been identified and budgeted. While it is expected that for stakeholder engagement activities (such as communication and awareness raising strategies and stakeholder involvement in land use planning and the conducting of EIAs) a national consultant will be essential, it is likely that for most other project components an international consultant (from elsewhere in Asia, or beyond) will be required, due to the level of specialism and expertise necessary. However, wherever local expertise is available, it will be prioritised over international expertise (as explained above).

### ***FUNDS FLOW***

346. Project funds will pass from GEF to UNDP and thereafter to MNRE, which in turn may commission funds to consultant bodies, civil society specialists or other government agencies, according to the specific tasks agreed upon and based upon standard UNDP bidding, recruitment, transparency and auditing requirements and regulations, against specific outputs.

### ***PUBLIC INVOLVEMENT PLAN***

347. At the national level the project will engage with governments, the private sector, communities, donors, NGOs and experts over meeting the project objective according to its strategy. Please refer to the stakeholder involvement plan for more details. The project will also seek to inform all stakeholders of the values of landscape level activities, the problems that they are facing, why they need to support project outcomes and how this should go about in an equitable and efficient manner.

### ***PROJECT REPORTING***

348. As head of the PCO, under the Steering Committee, the NPM will be responsible for the preparation of reports for the Project Board, PSC and UNDP on a regular basis, including the following: (i) Project Inception Report (PIR); (ii) APR; (iii) Project Implementation Report; (iv) Quarterly Progress Reports; and (v) Project Terminal Report. The Quarterly progress reports will provide a basis for managing project disbursements. These reports will include a brief summary of the status of activities, explaining variances from the work plan, and presenting work-plans for each successive quarter for review and endorsement. The APR will be prepared annually, and will entail a more detailed assessment of progress in implementation, using the set indicators. It will further evaluate the causes of successes and failures, and present a clear action plan for addressing problem areas for immediate implementation.

349. Annual Monitoring will occur through the Tripartite Review (TPR). The TPR will be composed of government representatives, UNDP and the Project. This will serve as the highest policy-level meeting of the parties directly involved in the implementation of the project. The project will be subject to TPR at least once every year. The first such meeting will be held within the first twelve months of implementation. The APR will be prepared and submitted to UNDP-CO and the UNDP-GEF Regional Office at least two weeks prior to the TPR for review and comments. The project will be subjected to at least two independent external evaluations:
- **Mid-term Review**- will be undertaken at the end of **the third** year of implementation. The Mid-Term Review will determine progress being made towards the achievement of outcomes and will identify course correction if needed;
  - **Final Technical Evaluation** - will take place three months prior to the terminal TPR meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals.
350. The PCO will, utilising input from the NPM, provide the country UNDP Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognised auditor of the government, or by a commercial auditor engaged openly by the PCO.
351. MNRE will provide the country UNDP Resident Representative with certified periodic financial statements, with an annual audit of the financial statements relating to the status of funds according to the established procedures set out in the Programming and Finance Manuals. The Audit will be conducted by the legally recognised auditor of the government, or by a commercial auditor engaged by the government.

## **PART 3.2: Legal Context and Audit Requirement**

### ***LEGAL CONTEXT***

352. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Malaysia and the United Nations Development Programme, signed by the parties. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.
353. UNDP acts in this Project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to UNDP as per the terms of the CPAP shall be extended mutatis mutandis to GEF.
354. The UNDP Resident Representative in Malaysia is authorised to effect in writing the following types of revision to this Project Document, provided that s/he has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:
- a) Revision of, or addition to, any of the annexes to the Project Document;

- b) Revisions which do not involve significant changes in the immediate objectives, outcomes or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

### ***AUDIT REQUIREMENT***

355. The government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted according to UNDP financial regulations, rules and audit policies by the legally recognised auditor of the government, or by a commercial auditor engaged by the government.

## **SECTION IV: MONITORING AND EVALUATION PLAN AND BUDGET**

### **PART 4.1: Inception Workshop**

356. A Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goal and objective, as well as finalise preparation of the project's first AWP. This will include reviewing the log-frame (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise, finalizing the AWP with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.

357. Additionally, the purpose and objective of the IW will be to: (i) introduce project staff with the UNDP-GEF team which will support the project during its implementation, namely the CO and responsible Regional Technical Advisor (RTA); (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RTA vis à vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting M&E requirements, with particular emphasis on the Annual PIRs and related documentation, the Annual Review Report (ARR), as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget rephasings. The IW will also provide an opportunity for all parties to understand their roles and responsibilities within the project's decision-making structures, including reporting and communication lines.

358. A detailed schedule of project review meetings will be developed by project management, in

consultation with project implementation partners and stakeholder representatives and incorporated in the PIR. Such a schedule will include: (i) tentative time frames for Project Steering Committee Meetings and (ii) project related M&E activities. Day-to-day monitoring of implementation progress will be the responsibility of the NPM, supported by the CTA, based on the project's AWP and agreed indicators. The NPM will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The NPM will also fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF RTA. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the AWP. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

359. Measurement of impact indicators related to global biodiversity benefits will occur according to the schedules defined in the Inception Workshop, using tracking tool scores, assessments of forest cover, wildlife movements and other means. Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the Implementing Partner, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities. Annual Monitoring will occur through the Project Steering Committee Meetings (PSCM). This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to PSCMs at least two times a year. The first such meeting will be held within the first six months of the start of full implementation.
360. A terminal PSCM will be held in the last month of project operations. The NPM is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP-GEF RCU after close consultation with the PSCM. It shall be prepared in draft at least two months in advance of the terminal PSCM in order to allow review, and will serve as the basis for discussions in the PSCM. The terminal meeting considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its objectives and contributed to the broader environmental objectives. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation.
361. UNDP COs and UNDP-GEF RCU as appropriate, will conduct yearly visits to project sites based on an agreed upon schedule to be detailed in the project's PIR/AWP to assess first hand project progress. A Field Visit Report/BTOR will be prepared by the CO and UNDP-GEF RCU and circulated no less than one month after the visit to the project team, all PSC members, and UNDP-GEF.

## **PART 4.2: Project Reporting**

362. The core project management team (under the NPM), in conjunction with the UNDP-GEF RTA, will be responsible for the preparation and submission of the following reports that form part of the monitoring process. The first six reports are mandatory and strictly related to monitoring,

while the last two have a broader function and their focus will be defined during implementation.

363. A Project Inception Report (PIR) will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly time frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan will include the dates of specific field visits, support missions from the UNDP-CO or the RCU or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the AWP, and including any M&E requirements to effectively measure project performance during the targeted 12 months time-frame.
364. The PIR will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. When finalised, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP CO and UNDP-GEF's RCU will review the document.
365. The Annual Project Report/ Project Implementation Review must be completed once a year. The APR/ PIR is an essential management and monitoring tool for UNDP, the Executing Agency and PCs and offers the main vehicle for extracting lessons from ongoing projects at the portfolio level.
366. Quarterly progress reports: Short reports outlining main updates in project progress will be provided quarterly to the local UNDP CO and the UNDP-GEF RCU by the project team, headed by the Policy Specialist using UNDP formats.
367. UNDP ATLAS Monitoring Reports: A Combined Delivery Report (CDR) summarising all project expenditures, is mandatory and should be issued quarterly. The NPM will send it to the PSC for review and the Executing Partner will certify it. The following logs should be prepared: (i) The Issues Log is used to capture and track the status of all project issues throughout the implementation of the project. It will be the responsibility of the NPM to track, capture and assign issues, and to ensure that all project issues are appropriately addressed; (ii) the Risk Log is maintained throughout the project to capture potential risks to the project and associated measures to manage risks. It will be the responsibility of the NPM to maintain and update the Risk Log, using Atlas; and (iii) the Lessons Learned Log is maintained throughout the project to capture insights and lessons based on the positive and negative outcomes of the project. It is the responsibility of the NPM to maintain and update the Lessons Learned Log.
368. Project Terminal Report: During the last three months of the project the project team under the NPM will prepare the Project Terminal Report. This comprehensive report will summarise all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure the long term sustainability and the wide replicability of the Project's outcomes.
369. Periodic Thematic Reports: As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare Specific Thematic Reports, focusing on specific issues or

areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

370. Technical Reports are detailed documents covering specific areas of analysis or scientific specialisations within the overall project. As part of the PIR, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialised analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.
371. Project Publications will form a key method of crystallising and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team, under the NPM, will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognisable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

## **PART 4.3: Independent Evaluations**

372. The project will be subjected to at least two independent external evaluations as follows: An independent Mid-Term Review will be undertaken at the mid-point of the project lifetime. The Mid-Term Review will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation including review of the GEF tracking tool mid-term assessment; will review and update the ESSP report; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organisation, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-Term Review will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.
373. An independent Final Technical Evaluation will take place three months prior to the terminal Project Steering Committee meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The evaluation will review the GEF tracking tool and end of the project assessment. The Final

Technical Evaluation should also provide recommendations for follow-up activities in view of ensuring sustainability of project outcomes and impact.

**Table 14. Project Monitoring and Evaluation Plan and Budget**

Type of M&E activity	Responsible Parties	Budget USD <i>Excluding project team Staff time</i>	Time frame
Inception Workshop	<ul style="list-style-type: none"> <li>▪ NPM</li> <li>▪ UNDP CO</li> <li>▪ UNDP GEF</li> </ul>	\$15,000	Within first two months of project start up
Inception Report	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ UNDP CO</li> </ul>	None	Immediately following Inception workshop
Measurement of Means of Verification for Project Purpose Indicators	<ul style="list-style-type: none"> <li>▪ NPM will oversee the hiring of specific studies and institutions to establish baselines and targets where necessary including BII, and delegate responsibilities to relevant team members</li> </ul>	62,000 To be finalised in Inception Phase.	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	<ul style="list-style-type: none"> <li>▪ Oversight by NPM</li> <li>▪ Monitoring and Evaluation Officer</li> <li>▪ Project team</li> </ul>	30,000 To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR and PIR	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ UNDP-CO</li> <li>▪ UNDP-GEF</li> </ul>	None	Annually
Quarterly progress reports	<ul style="list-style-type: none"> <li>▪ Project team</li> </ul>	None	Quarterly
CDRs	<ul style="list-style-type: none"> <li>▪ NPM</li> </ul>	None	Quarterly
Issues Log	<ul style="list-style-type: none"> <li>▪ NPM</li> <li>▪ UNDP CO Programme Staff</li> </ul>	None	Quarterly
Risks Log	<ul style="list-style-type: none"> <li>▪ NPM</li> <li>▪ UNDP CO Programme Staff</li> </ul>	None	Quarterly
Lessons Learned Log	<ul style="list-style-type: none"> <li>▪ NPM</li> <li>▪ UNDP CO Programme Staff</li> </ul>	None	Quarterly
Mid-term Review	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP- CO</li> <li>▪ UNDP-GEF Regional Coordinating Unit</li> <li>▪ External Consultants (i.e. review team)</li> </ul>	\$45,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>▪ Project team,</li> <li>▪ UNDP-CO</li> <li>▪ UNDP-GEF Regional Coordinating Unit</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	\$50,000	At the end of project implementation
Terminal Report	<ul style="list-style-type: none"> <li>▪ Project team</li> <li>▪ UNDP-CO</li> <li>▪ local consultant</li> </ul>	15,000 Funds are budgeted for local consultants to assist where needed	At least one month before the end of the project
Lessons learned	<ul style="list-style-type: none"> <li>▪ Project team</li> </ul>	5,000	Yearly

Type of M&E activity	Responsible Parties	Budget USD <i>Excluding project team Staff time</i>	Time frame
	Monitoring and Evaluation Officer <ul style="list-style-type: none"> <li>▪ UNDP-GEF Regional Coordinating Unit (suggested formats for documenting best practices, etc.)</li> </ul>		
Audit	<ul style="list-style-type: none"> <li>▪ UNDP-CO</li> <li>▪ Project team</li> </ul>	\$ 15,000 (\$2,500 per annum)	Yearly
Visits to field sites	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ Government representatives</li> </ul>	\$ 25,000	Yearly
<b>TOTAL INDICATIVE COST</b>			
<b>*Excluding project team staff time and UNDP staff and travel expenses</b>		<b>USD 262,000*</b>	

## PART 4.4: Learning and Knowledge Sharing

374. Results from the Project will be disseminated within and beyond the project intervention period through a number of existing information sharing networks and forums. In addition, the Project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organised for Senior Personnel working on projects that share common characteristics. UNDP/GEF Regional Unit has established an electronic platform for sharing lessons between the project coordinators. The Project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The Project will identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identify and analysing lessons learned is an on-going process, and the need to communicate such lessons as one of the Project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorising, documenting and reporting on lessons learned.

375. **Branding and Visibility:** Full compliance is required with UNDP's Branding Guidelines and guidance on the use of the UNDP logo. These can be accessed at <http://web.undp.org/comtoolkit/reaching-the-outside-world/outside-world-core-concepts-visual.shtml>. Full compliance is also required with the GEF Branding Guidelines and guidance on the use of the GEF logo. These can be accessed at [http://www.thegef.org/gef/GEF\\_logo](http://www.thegef.org/gef/GEF_logo). The UNDP and GEF logos should be the same size. When both logs appear on a publication, the UNDP logo should be on the left top corner and the GEF logo on the right top corner. Further details are available from the UNDP-GEF team based in the region.

376. **Audit arrangement:** The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by a special and certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the Project Implementing Partner. UNDP and the project Implementing Partner will provide audit management responses and the Project Manager and project support team will address



audit recommendations. As a part of its oversight function, UNDP will conduct audit spot checks at least two times a year.

377. Total project financing amounts to USD \$47,360,000, excluding preparatory costs. Of this, the GEF is expected to finance USD \$10,860,000. See details on Total Budget and Workplan below.

## SECTION V: STRATEGIC RESULTS FRAMEWORK (SRF)

### PART 5.1: Strategic Results Framework, SRF (formerly GEF Logical Framework) Analysis

#### INDICATOR FRAMEWORK AS PART OF THE SRF

**Project's Development Goal:** Sustainable forest landscape management in the Central Forest Spine Landscape secures critical wildlife habitats, conserves biodiversity and carbon stocks and maintains the continuous flow of multiple ecosystem services

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
<p><b>Objective</b> To increase federal and state level capacity to execute the CFSMP through the strengthening of institutional and operational structures and the piloting of sustainable forest landscape management plans in three tiger-priority landscapes, financed sustainably through the diversification of funding sources for conservation</p>	<p>Natural forest of 4 forest blocks of CFS (Main Range Forest Complex, South-east Pahang Peat Swamp Forest, Greater Taman Negara complex, Endau-Rompin-Sedili complex)</p> <p>Funds invested into CFS conservation (apart from GEF funds)</p> <p>Overall score of CFS Capacity Development Scorecard</p>	<p>4.5 million ha of PRF and National Park in CFS complexes</p> <p>Currently mostly government or ad hoc NGO funding</p> <p>Current score is 12</p>	<p>No net loss of forested area , with 95% remaining natural forest</p> <p>CFS conservation fund receiving regular income through diverse sources</p> <p>Score of at least 22 by project end</p>	<p>GIS remote sensing, project M&amp;E reports</p> <p>CFS conservation fund statements, project M&amp;E reports</p> <p>Capacity Development Scorecard</p>	<p>Assumption: Project plans are accepted willingly and activities are carried out with due diligence, ensuring the successful completion of the project and therefore sustainable management of forest, conservation of tiger populations, increase in funding for conservation and increased institutional capacity for CFSMP implementation</p> <p>Risk: Governments and other stakeholders are not willing to participate in project activities and do not heed to regulations, leading to the continuation of unsustainable forest management, wildlife crime, lack of funding for conservation and weak capacity to fulfil the objectives of the CFSMP</p>
<p><b>Outcome 1.1</b> Strengthened institutional capacity of the Federal Government to oversee implementation of the CFSMP, ensuring</p>	<p><b>Outputs:</b></p> <p><b>1.1.1: A biodiversity indicator taskforce established, coordinated by the NRE, to accurately calculate and monitor the BII of the CFS and enhance the applicability of the National Biodiversity Clearing House Mechanism for use in landscape management planning</b></p> <p><b>1.1.2: The environmental management and mitigation measures hierarchy (avoid-minimize-mitigate-offset) incorporated into landscape management planning and management protocols, building on EIA and other tools</b></p> <p><b>1.1.3: ICT-based ecosystem service valuation tools introduced for valuing ecosystem services in target forest landscapes, with models for determining</b></p>				

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
compliance by sub-national actors, and monitoring impacts upon biodiversity, ecosystems and carbon stocks	<b>trade-offs between land use options based on the values of ecosystem services and other land uses</b> <b>1.1.4: A GIS-based decision support system for landscape management planning adopted, incorporating information on current land uses, local communities, biodiversity, carbon stocks, ecosystem services and their valuation</b> <b>1.1.5: The management capacity and operations of the existing national CFS steering and technical committees strengthened through training in the use and application of the above tools in order to efficiently supervise state-level CFS technical committees in CFSMP implementation</b>				
	Existence of environmental monitoring and management systems applicable to landscape management planning	There are no effective mechanisms in place for incorporating biodiversity, ecosystem services and carbon stocks considerations into landscape management planning	Environmental monitoring and management tools (developed under Outputs 1.1.1-1.1.4) are positioned for application in landscape management planning across the peninsula	Guideline documents produced for each tool, project M&E reports	Assumption: Biodiversity and ecosystem experts from government departments, NGOs and academic institutions will be available to give their time to offer expertise and share knowledge  Risk: Biodiversity experts are not available to collate biodiversity data in order to develop tools for application in landscape management planning
	National CFS steering committee equipped to apply environmental monitoring and management tools in supervision of state level landscape management planning and monitoring of compliance to CFSMP	National CFS steering committee has little knowledge on applications of environmental considerations in landscape management planning and monitoring	National CFS steering committee is fully trained in the application of the tools (developed under Outputs 1.1.1-1.1.4) for supervision of state level landscape management planning and monitoring of compliance to CFSMP	Training reports, project M&E reports	Assumption: National CFS Steering Committee will be willing to be trained in and utilise the tool in landscape management planning and oversight  Risk: National CFS Steering Committee is not willing to incorporate the use of the tools into landscape management planning and oversight
<b>Outcome 1.2</b> Enhanced wildlife crime law enforcement and wildlife monitoring capacity emplaced at national and state levels and in target forest landscapes to ensure reduction of wildlife and forestry crime	<b>Outputs:</b> <b>1.2.1: A wildlife crime intelligence unit established and fully resourced to control and analyse all intelligence data</b> <b>1.2.2: Monitoring and reporting mechanisms and protocols in place for efficient transfer of information between law enforcement agencies and relevant departments</b> <b>1.2.3: Capacity built at community level for wildlife and forestry crime monitoring and reporting across all priority sites, to increase law-enforcement presence</b> <b>1.2.4: State official capacity built for wildlife and forestry crime monitoring, interception and conviction through the formation of state-level WCUs and strengthened operational resources and practices</b>				
	Tiger populations in source PAs	Estimated to be 0.3 individuals per 10,000 ha	Population increased by at least 20%	Tiger population survey data of each landscape (co-fin) , project M&E reports	Assumption: With improved resources and capacity, law enforcement officers and agencies conduct duties and succeed in

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
	Percentage of recorded wildlife crime cases that are prosecuted and convicted in court	Between 2011 and 2012, just 13% of cases recorded by DWNP were prosecuted in court	At least 70% of recorded wildlife crime cases are prosecuted in court and given the legally stated penalty	Reports from DWNP and the Legal Division, project M&E reports	reducing wildlife crime  Risk: Law enforcement officers and agencies do not follow improved procedures for increased effectiveness of law enforcement and tigers continue to be poached
<b>Outcome 2.1</b> Biodiversity and ecosystem service provision is mainstreamed in forest landscape management in the three priority landscapes via sustainable forest landscape management plans, resulting in maintained status of biodiversity and ecosystem services	<b>Outputs:</b> <b>2.1.1: Capacity strengthened at state level for CFSMP implementation and management in focal landscapes</b> <b>2.1.2: Preliminary site-specific management plans developed for each forest landscape in support of current plans, with stakeholder participation, to be finalised according to sustainable financing options established under Component 3</b> <b>2.1.3: Integration of biodiversity, ecosystem service and carbon stocks monitoring protocols (under outputs of Component 1) piloted in the management of the focal landscapes</b>				
	Multi-stakeholder landscape management plan implemented in each landscape, informed by biodiversity, ecosystem services and carbon stocks values	Currently only Belum-Temengor has an integrated landscape management plan, formed without the use of environmental monitoring and management planning tools	693,500 ha across the three focal landscapes is under improved management incorporating environmental monitoring and management tools	Landscape management plans, project M&E reports	Assumption: Stakeholders support the development and implementation of sustainable landscape management plans and agree to implement management activities with integration of monitoring and management tools  Risk: Stakeholders do not support the sustainable landscape management plans and continue with original land management activities without incorporating tools for environmental monitoring and management
	GEF Land Degradation-3 Tracking Tool score	Currently a score of 5 out of a possible 10	A score of at least 9 by end of project	GEF LD-3 Tracking Tools, project M&E progress reports	
	Status of biodiversity in the CFS	The preliminary baseline BII lies between 48% and 68%; this will be refined at the start of the project building on PPG-stage analysis.	BII of the CFS has not decreased below score at start of project	Habitat, biodiversity and impact factor assessments, BII report, project M&E reports	

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
<b>Outcome 2.2</b> Corridor establishment increases connectivity of critical ecological linkages identified in the CFSMP and supports carbon emission avoidance and carbon sequestration under SFM practices	<b>Outputs:</b> <b>2.2.1: Rehabilitation of at least 4,000 ha of semi-degraded forest landscape in line with ARR methodology, using a mix of native species, in accordance with current plans within the CFSMP (funded from SFM)</b> <b>2.2.2: Gazettement of critical corridor forest of at least 20,000 ha, to supplement targeted corridors of the CFSMP, including proclamation of state forests as protection forests and designation of production forests as protection forests through implementation of Logged-to-Protection Forest practice in line with SFM principles of VCS AFOLU (funded from SFM)</b> <b>2.2.3: Building of wildlife crossing overpasses or viaducts in critical ecological corridors facing infrastructural barriers, to supplement current plans for wildlife crossings within the CFSMP (co-financed)</b>				
	GEF SFM-REDD+ tracking tool	Baseline score is 6 out of a possible 11	Avoided emissions of 1.49 million tC due to 20,000 ha gazetted <sup>107</sup> ; 17,600tC/yr due to ARR activities in 4,000 ha <sup>108</sup> ; tracking tool score of at least 10	Carbon stocks assessments; GEF SFM-REDD+ Tracking Tool report	Assumption: ARR activities are carried out with due diligence and are secured from damaging activities; gazetted areas are secured from illegal logging  Risk: Management of the gazetted and rehabilitated areas is not adequate for securing against further deforestation
	Presence of wildlife in corridor areas	Connectivity between forest patches is low and restricts wildlife movement, particularly in unprotected areas	An additional 20,000 ha gazetted, 4,000 ha rehabilitated and wildlife crossings established encourage increased presence and movement of wildlife in these areas	Gazettement and protected area designation reports, wildlife monitoring reports, project M&E reports	Assumption: Gazetted and rehabilitated areas are secured against illegal activities; road users take heed to speed limits and warnings  Risk: Gazetted and rehabilitated areas experience wildlife and forestry crime, reducing the presence of wildlife in these areas; road users do not follow regulations for slower speeds and

<sup>107</sup> Calculated using the conservative estimate of the average carbon density of 115 tC/ha for the state forest, as used in the CFS Master Plan (2011). The 2<sup>nd</sup> National Communication (2011) estimates the Carbon density in different forest types in Malaysia ranges from 70 tonnes per hectare in young or sparse forests to 150 tonnes per hectare or more in intact old growth forest. The assumption is that under the baseline scenario conservatively 95% of the 20,000 ha in question would be lost due to logging for production purposes in the next 10 years. The 95% loss is estimated based on the percentage of the area that would be logged based on current logging trends for unprotected forest in Peninsular Malaysia (i.e. 95% of the land would be cleared) and the percentage of both above-ground and below-ground carbon that would be lost. The project scenario will protect the forest, by implementing the LtPF practice (Logged to Protected Forest) which falls under the IFM (Integrated Forest Management) category of VCS AFOLU Requirements v.3.0 (version 8 March 2011) [http://www.imaflo.org/upload/repositorio/AFOLU\\_Requirements\\_Cv3.0.pdf](http://www.imaflo.org/upload/repositorio/AFOLU_Requirements_Cv3.0.pdf). This figure is nett of any additional carbon sequestered from subsequent regrowth or plantation in the ten-year period and also includes a deduction of 10% for carbon storage in wood products harvested. A further 20% discount is provided for leakage and permanence. The simplified conservative calculation of the avoided C is: 20,000ha\*115tC/ha\*0.65=1.49 M tC in total.

<sup>108</sup> Calculated using coefficients applicable for the ecological zone and forest type in question, for intensive forest management (plantation with native species) of IPCC Vol.2 AFOLU Chapter 2 (Forests), and IPCC LULUCF Good Practice Guidance, for both above and below ground biomass.

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
					roads remain a barrier against wildlife movement
Outcome 2.3: The socio-economic status of local communities improved and support for conservation increased through the generation of sustainable livelihoods based on wildlife, and the reduction of human-wildlife conflict	<b>Outputs:</b> <b>2.3.1: Ecotourism and handicrafts projects piloted within indigenous communities in Greater Taman Negara and Belum-Temengor, to be replicated elsewhere</b> <b>2.3.2: Human-wildlife conflict mitigation measures strengthened within Belum-Temengor and Endau-Rompin</b>				
	Conservation-related livelihood activities involving both men and women established in pilot areas and making significant contributions to household income of Orang Asli participants	Baseline household income gained from different livelihood activities (undertaken by both men and women) to be established at start of project, disaggregated by gender. Some craft groups exist in Belum-Temengor but have been given little support and opportunity to develop	At least two ecotourism and handicrafts CBOs in operation, with proven engagement of both men and women, and increasing household income of participants by 25%	Household surveys, project reports and recommendations and replication plans, project M&E reports	Assumption: Structures established for enhanced income generation and training given will encourage CBO members to continue livelihood activities in a sustainable way and increase incomes. Women will be actively involved: no cultural barriers to women's engagement in appropriate livelihoods activities  Risk: CBO members return to original livelihood activities which are unsustainable and do not generate additional income.
	Number of reported HWC incidences within communities, and level of economic loss for men, women and households in general	In 2012, 111 wildlife complaints were recorded in Belum-Temengor; 19 complaints were recorded in Endau-Rompin. Baseline for economic losses to be established at start of project, disaggregated by gender	Reports of HWC incidences reduced by 25% in target communities and economic losses reduced by 25%	Household surveys, DWNP reports, project M&E reports	Assumption: Communities and DWNP continue to use improved mechanisms for reporting and responding and response measures become consistently successful  Risk: DWNP responses do not increase in effectiveness and communities continue to use their own means to mitigate damage from HWC

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
Outcome 3.1: The long term biodiversity and ecosystem conservation of the CFS is enhanced through the diversification of funding sources for conservation	<b>Outputs:</b> <b>3.1.1: New market-based sources of conservation funding developed: a small hydropower watershed PES scheme in Perak, to be replicated in Johor and Pahang (PEE operation paid for under co-finance).</b> <b>3.1.2: New private-based sources of conservation funding developed: corporate biodiversity or carbon offsets in support of priority species and landscapes</b> <b>3.1.3: Voluntary conservation levies introduced at the state level</b> <b>3.1.4: Conservation funding incorporated into sectoral budgets, including through earmarked fiscal transfers</b>				
	New and additional sources of funding for conservation in the CFS are in place (of at least \$1 million by EoP) and functioning as reflected in BD-2 TT	CFS conservation funding dependent on government budgets and NGO/donor projects	Funds are regularly contributed towards CFS conservation through four separate streams under Outputs 3.1.1-3.1.4	Annual budget allocations to Federal and State Forestry and Wildlife Departments Financial and progress reports of Federal and State Forestry and Wildlife Departments Financial reports of CFS conservation fund Project M&E reports	Assumption: Federal and state governments will agree to reallocate public funds towards the conservation of the CFS  Risk: Federal and state governments will not be willing to reallocate public funds and potential sourcing of CFS funds will be much reduced
Outcome 3.2: Funding allocations for biodiversity and ecosystem conservation in the CFS are secured and formalised	<b>Outputs:</b> <b>3.2.1: The federal Conservation Trust Fund supported in its establishment, (including labour and facilities provided under co-fin), with specific sub-section allocated towards CFS ecosystem and biodiversity conservation and managed by the national CFSMP steering committee, to control funds raised (under Outputs 3.1.1-3.1.4)</b>				
	Coordinated mechanism in place for attracting, earmarking and administering funding for biodiversity and ecosystem conservation in the CFS	Fundraising and financial flows for conservation in the CFS largely uncoordinated between different agencies and organisations	With significantly reduced dependence on funds from federal budgets and NGOs, the conservation of the CFS is directed and managed via the dedicated fund without influence of national economic circumstances	Statutes and Articles of Association of CFS conservation fund Financial and progress reports of CFS conservation fund Progress and financial reports of organisations and projects activities receiving funding Project M&E reports	Assumption: Federal government will support the establishment of a fund dedicated towards CFS conservation  Risk: Federal government will not support the establishment of a conservation fund and funds will continue to remain insecure
Outcome 3.3: Strategic planning processes in place and being used to link financing to conservation management needs	<b>Outputs:</b> <b>3.3.1: Sustainable financing plans developed at both federal and landscape levels within CFS units, incorporating investment opportunities (secured through GEF investment, provided under co-finance), with landscape management plans finalised accordingly</b>				
	CFS conservation management is supported by sustainable financing plans	Budget preparation and planning in government conservation agencies	One CFS-wide and 3 state-level sustainable financing plans ensure	Federal and State-level sustainable financing strategies and plans	Assumption: Federal and state governments will support the development of sustainable

Objective/ Outcome	Indicator	Baseline	End of Project Target	Source of Information	Assumptions and Risks
		largely delinked from CFS conservation management plans	that landscapes are managed sustainably, dependent in the long term on the values of their biodiversity and ecosystem services	Financial and progress reports of Federal and State Forestry and Wildlife Departments Project M&E reports	financing plans and will continue to implement accordingly  Risk: Federal and state governments will not support the use of sustainable financing plans in landscape management and funding for CFS management will decline



**LIST OF OUTPUTS AND ACTIVITIES PER OUTCOME WITH INDICATIVE COSTS AND STAKEHOLDERS**

<b>Project Goal: Sustainable forest landscape management in the Central Forest Spine Landscape secures critical wildlife habitats, conserves biodiversity and carbon stocks and maintains the continuous flow of multiple ecosystem services</b>				
<b>Outcome</b>	<b>Output</b>	<b>Indicative Activity</b>	<b>Indicative Budget (\$)</b>	<b>Stakeholders</b>
<b>Component 1: Planning, compliance monitoring and enforcement framework for integrated forest landscape management (Total: \$3,659,500)</b>				
Outcome 1.1: Strengthened institutional capacity of the federal government to oversee implementation of the CFS Master Plan, ensuring compliance by sub-national actors, and monitoring impacts upon biodiversity, ecosystems and carbon stocks	1.1.1: A biodiversity indicator taskforce established, coordinated by the NRE, to accurately calculate and monitor the BII of the CFS and enhance the applicability of the National Biodiversity Clearing House Mechanism for use in landscape management planning	Formation and resourcing of task force for calculating and monitoring BII of the CFS, to include specialists in different taxonomic groups	151,500	FDPM, FRIM, herbaria, academic institutions, BII specialist, contractual academic services
		Support taskforce in collating knowledge of species richness/abundance distribution in the CFS for a strengthened biodiversity clearing house mechanism for monitoring biodiversity and ecosystems as well as generating Malaysia-specific impact factors for the formulation of an accurate BII for the CFS	174,000	FDPM, FRIM, herbaria, academic institutions, BII specialist, contractual academic services
		Create maps for Perak, Pahang and Johor states, including layers for all data collated e.g. forest extent, habitats, ecosystems and species	133,500	FRIM, FDPM, GIS specialist
		Calculate baseline BII for the entire CFS landscape	110,500	FRIM, FDPM, BII specialist
		Data regularly updated, with annual measurement of the BII in the CFS. BII will be affected by the change in land use and the associated impact factors. Updating BII will require accurate land use planning information in GIS as well adjusted impact scores.	107,500	FRIM, FDPM, GIS specialist, BII specialist
		Investigation of the potential for development of a web-based platform for the clearing house mechanism, in collaboration with international initiatives	70,500	FDPM, FRIM, herbaria, academic institutions, contractual academic services
	1.1.2: The environmental management and mitigation measures hierarchy (avoid-minimize-mitigate-offset) incorporated into landscape management planning and management protocols, building on EIA and other tools	Advocacy involving DOE and other involved authorities to secure agreement and formulate regulations for EIAs to be completed prior to approval of development projects	36,500	FDPM, National CFS Technical Committee, DOE
		Coordination and monitoring mechanisms established for the implementation of conditions stated by the DOE following EIAs	55,500	FDPM, National CFS Technical Committee, DOE, contractual services
		Development of comprehensive guidelines for incorporating EIA and AMMO measures in land-use planning, building on any existing	54,500	National CFS Technical Committee, DOE, FDPM

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
		guideline materials and incorporating example land-use and environment scenarios, with emphasis on public consultation		
	1.1.3: ICT-based ecosystem service valuation tools introduced for valuing ecosystem services in target forest landscapes, with models for determining trade-offs between land use options based on the values of ecosystem services and other land uses	National CFS technical committee have knowledge of ecosystem service valuation and tools such as InVEST are institutionalised, with tailor-made training materials provided for continuation of capacity post project	106,500	CFS technical committee, contracted academic institution, NGO
		Trial valuation of identified ecosystem services and land uses in selected area of CFS	132,500	CFS Technical committee, contracted academic institution, WWF
	1.1.4: A GIS-based decision support system for landscape management planning adopted, incorporating information on current land uses, local communities, biodiversity, carbon stocks, ecosystem services and their valuation	Gather environment-based information sets for the CFS (from the tools under Output 1.1.1, amongst other sources) such as topography, temperature, precipitation, soil, habitat type, river systems, key biodiversity indicators, ecosystem service values, carbon storage	114,500	GIS specialist, FDPM, FRIM, contracted academic institution
		Select human-based factors such as rural settlement, population density, traditional communal boundaries, economics, crop type in agricultural areas, PRF types	114,500	FDPM, EPU, JAKOA, state planning units, DTCP, GIS specialist, academic institution
		Compile into GIS system e.g. Arcview GIS and trial various scenarios for specific objective to test effectiveness of tool	44,500	GIS specialist
		Formulate tool guidelines for future reference and training	33,500	GIS specialist, FDPM
	1.1.5: The management capacity and operations of the existing national CFS steering and technical committees strengthened through training in the use and application of the above tools in order to efficiently supervise state-level CFS technical committees in CFSMP implementation	National CFS technical committee is able to apply tools introduced under above outputs according to member's specialism	111,500	CFS technical committee, contracted academic institution
		Communication enhanced between steering and technical committees, and their respective related departments at both federal and state level, through implementation of efficient information-sharing mechanisms	118,500	CFS steering and technical committee, FDPM, DWNP, EPU, DTCP, international consultant
		National steering and technical committees able to monitor each target state's progress of activities, including their use of the above tools and their application in decision-making	117,000	CFS steering and technical committee, international consultant
Outcome 1.2: Enhanced wildlife crime law enforcement and wildlife monitoring capacity	1.2.1: A wildlife crime intelligence unit established and fully resourced to control and analyse all intelligence data	Dedicated wildlife crime intelligence unit established under the federal WCU, adequately staffed based on the staffing needs analysis and mandated to liaise with departments of each zone of the WCU, state law enforcement departments and MY-WEN, with appointed liaison officers for communications with INTERPOL and police and customs	297,500	WCU, MY-WEN, INTERPOL, police and customs, contractual services

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
emplaced at the national and state level and in target forest landscapes to ensure reduction of wildlife crime		Wildlife crime intelligence unit is able to use i2 ibase (or similar tools) for managing intelligence data gathered by all parties involved with wildlife crime law-enforcement, including state officials and NGOs	109,500	Wildlife crime intelligence unit, international consultant
		Continuous updating and analysis of intelligence data by wildlife crime intelligence unit, with distribution to relevant parties according to level of security	38,500	Wildlife crime intelligence unit
	1.2.2: Monitoring and reporting mechanisms and protocols in place for efficient transfer of information between law enforcement agencies and relevant departments	Develop a standardised reporting format for each wildlife crime agency, each zone of the WCU, forestry/wildlife and legal department, for efficient contribution of data to the ibase data system (under Output 1.2.1.); also to include comprehensive information on actions and progress against objectives	77,500	WCU, state forestry, wildlife and legal department, international consultant
		Designate specific members of the federal WCU to oversee agencies' progress against objectives via the reporting mechanism	45,500	WCU
	1.2.3: Capacity built at community level for wildlife and forestry crime monitoring and reporting across all priority sites, to increase law-enforcement presence	Establish and equip a community-based monitoring network in each of the three landscapes, to include members of rural communities, based on the Honorary Wildlife Warden approach (if appropriate).	350,000	WCU, Orang Asli and non-indigenous communities, Honorary Wildlife Warden expert, departments of Forestry and Wildlife
		Monitoring networks have strong knowledge base in the legal context of and penalties for the illegal trade in wildlife and forest resources and law-enforcement measures, and have capacity for patrolling, species identification and data recording, with mechanisms in place for reporting to members of the state forestry and wildlife law enforcement departments	223,500	Community-based monitoring network, DWNP, Legal Division, FDPM, WCU
	1.2.4: State official capacity built for wildlife and forestry crime monitoring, interception and conviction through the formation of state-level WCUs and strengthened operational resources and practices	WCU established and equipped at each state to mirror and report to federal WCU, with state wildlife, forestry and legal staff resourced and allocated to this unit	255,500	Federal WCU, state wildlife, forestry and legal departments, federal CFS technical committee
		State level WCUs and other law enforcement agencies have capacity to use SMART tools, information and intelligence gathering, species identification, trade routes and smuggling techniques, with standard operating procedure established for scene of crime management and support given for continuation of training programme post-project	225,500	Highly specialised law enforcement agency, the Police, Customs and Immigration, international consultant, forestry and

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
				wildlife departments, JNPC, PSPC
		Law enforcement officers, state level prosecutors, magistrates and judiciary officers have knowledge on wildlife and forest resources laws, their enforcement and practicalities involved, with standard operating procedure established for case management and transfer through departments and support given for continuation of training programme post-project	249,500	Legal Division, international consultant, law enforcement officers, prosecutors, magistrates and judiciary officers
<b>Component 2: Sustainable forest landscape management of three priority forest landscapes within the CFS (Total: \$ 4,987,000)</b>				
Biodiversity and ecosystem service provision is mainstreamed in forest landscape management in the three focal landscapes via sustainable forest landscape management plans, resulting in improved status of biodiversity and ecosystem services	2.1.1: Capacity strengthened at state level for CFSMP implementation and management in focal landscapes	Each state CFS technical committee supported to allocate and resource specific members of relevant departments for full-time secondment to CFSMP implementation within an executive unit	183,000	State CFS technical committee, state forestry/wildlife/economic planning departments, international consultant
		Capacity gaps filled for application of land-use planning laws in sustainable landscape management, practice and decision-making as well as compliance monitoring, communication and coordination mechanisms	170,000	State CFS technical committee, state CFS executive unit, international consultant
		State forestry and wildlife authorities have institutional capacity for biodiversity and habitat data collection and identification of taxa as indicators for corridor health, for incorporation into the biodiversity and ecosystem monitoring system (under Output 1.1.1)	372,000	State forestry/wildlife departments, FRIM, FDPM, biodiversity experts
		Relevant members of state CFS unit are able to use tools introduced (under Outputs 1.1.1-1.1.4), for incorporation of environmental data into land-use planning	168,000	State CFS executive unit, contractual academic services
		Communications strategy developed and implemented in each landscape, including awareness raising of CFS conservation amongst major stakeholders as well as out-reach activities for both indigenous and non-indigenous communities. A systematic knowledge management component will capture experiences and lessons from the pilot landscape for dissemination and replication. Support given to providing an NGO engagement as consultants to the community based monitoring network unit. Funding may be allotted for producing training and awareness raising materials-printed, social networking (online) as well as visual documentaries (videos and still images).	260,000	State CFS executive unit, FDPM, JAKOA, major land owners, local communities, NGO community

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
	2.1.2: Preliminary site-specific management plans developed for each forest landscape in support of current plans, with stakeholder participation, to be finalised according to sustainable financing options established under Component 3	Landscape management planning committee selected from representatives of each stakeholder type and supervised by relevant member state CFS executive unit to carry out the development of management plans in support of current plans in place	177,000	State CFS executive unit, state executive councils, representatives of all stakeholders, local consultant
		Based on habitat maps created (under Output 1.1.1), ecosystem service valuation tools and GIS-based decision-making tools under (Outputs 1.1.3 and 1.1.4) are utilised by the executive committee with involvement of the LMPC to establish appropriate and sustainable land-uses and management practices in each landscape, including of PRFs, incorporating plans for the primary linkages already part of the CFSMP and other land management plans	204,000	State CFS executive unit, LMPC, FDP, national CFS steering committee, conference facilitator
		Preliminary plan framework and strategic goals established by LMPC and executive unit, with habitat zones, wildlife movements and corridors defined, as well as boundaries, roles, responsibilities and benefits, with agreed management and monitoring mechanisms	192,500	State CFS executive unit, LMPC, FDP, national CFS technical committee, conference facilitator
		Trial application of AMMO hierarchy (under Output 1.1.2) in the conduct of EIAs in each landscape (partly co-fin)	135,000	DOE, LMPC, state CFS executive unit, EIA assessors, stakeholders of project concerned and other stakeholders for participatory process, local consultant
	2.1.3: Integration of biodiversity, ecosystem service and carbon stocks monitoring protocols (under outputs of Component 1) piloted in the management of the focal landscapes	Trained forestry and wildlife officers conduct quarterly biodiversity, ecosystem services and carbon stocks surveys of focal landscapes; BII recalculated annually by the biodiversity indicator task force	225,000	State forestry and wildlife officers, BII specialist
		Data analysed alongside land-use management types and changes to assess impact of project upon the environment over time	149,000	CFS executive unit, contractual academic services
Outcome 2.2: Corridor establishment increases connectivity of critical ecological linkages identified in the CFSMP and supports carbon emission avoidance	2.2.1: Rehabilitation of at least 4,000 ha of semi-degraded forest landscape in line with ARR methodology, using a mix of native species, in accordance with current plans within the CFSMP (funded from SFM)	Analysis of biodiversity and habitat data using systems such as GIS to identify most critical and suitable areas for rehabilitation, considering current CFSMP plans and according to likelihood of successful rehabilitation (e.g. soil quality, utilisation) as well as potential land area secured through connectivity, connectivity of species sub-populations, importance of habitat type, number of species benefiting	156,000	GIS specialist, national CFS technical committee, state CFS executive units, FRIM, other biodiversity specialists
		Ground truthing and finalisation of priority areas for rehabilitation, demarcation and facilitation of ARR activities	158,000	FRIM, state forestry departments



Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders	
and sequestration under SFM practices		Annual assessment of carbon stocks using GIS habitat data and ground-truthing	195,000	State forestry departments, GIS specialist	
	2.2.2: Gazettement of critical corridor forest of at least 20,000 ha, to supplement targeted corridors of the CFSMP, including proclamation of state forests as protection forests and designation of production forests as protection forests through implementation of Logged-to-Protection Forest practice in line with SFM principles of VCS AFOLU (funded from SFM)	Analysis of biodiversity and habitat data (under Component 1) to identify priority areas for gazettelement according to potential land area secured through connectivity, connectivity of species sub-populations, importance of habitat type (e.g. a wetland area or containing endemic species), number of species benefiting	160,000	DWNP, JNPC and PSPC, GIS specialist, FDP, FRIM and other biodiversity specialists national CFS technical committee	
		Ground truthing, stakeholder consultation, gazettelement and demarcation of priority areas for i) conversion of state forest to protection forests, and ii) conversion of production to protection forests in PRFs	249,000	State forestry/wildlife departments, FDP, DWNP, state CFS executive unit, landholders and stakeholders, licensed surveyor	
		Conduct wildlife tracking survey alongside road and to each side to determine species presence, most commonly crossed points and most used areas near the road	188,000	DWNP, state wildlife departments, biodiversity experts	
	2.2.3: Building of wildlife crossing overpasses or viaducts in critical ecological corridors facing infrastructural barriers, to supplement current plans for wildlife crossings within the CFSMP (co-financed)	Combine biodiversity survey data with analysis of biodiversity and habitat GIS data as well as social impact data to establish most critical and suitable areas for wildlife crossings in terms of species presence, relative proximity to other significant forested areas, topography and social factors	161,000	GIS specialist, state CFS executive unit, biodiversity specialists	
		Coordination with transport/infrastructure authorities and construction companies to initiate demarcation of crossings, including sign posts, speed limits and speed bumps	Co-fin	State CFS executive unit, transport/infrastructure authorities, construction companies	
		Begin construction of crossings: aerial crossings for arboreal species; road overpasses and viaducts for terrestrial species	Co-fin	State CFS executive unit, construction companies	
	Outcome 2.3: The socio-economic status of local communities improved and support for conservation increased through the generation of sustainable livelihoods	2.3.1: Ecotourism and handicrafts projects piloted within indigenous communities in Greater Taman Negara and Belum-Temengor, to be replicated elsewhere	Create and equip ecotourism CBO in Taman Negara landscape and handicrafts CBO in Belum-Temengor and establish membership. Look at WWF work in Kinabatangan Sabah, Sabah FD in KLIAS, MNS in Ulu Geroh as possible models for eco-tourism.	280,000	JAKOA, local consultant, international CBO consultant, Orang Asli communities, DWNP, ecotourism companies
			Capacity building of CBO members through education and training in CFS conservation, sustainable resource use, marketing, branding and	283,000	International CBO consultant, local consultant,

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders	
based on wildlife, and the reduction of human-wildlife conflict		value-addition of products, wildlife identification and tracking, and income management		state CFS executive unit, state wildlife/forestry officers, tourism companies	
		Establish linkages to known markets in ecotourism and handicrafts. Involve museums, ministry of tourism events, local markets, art markets dedicated to indigenous arts; perhaps organise a national event at the national art gallery to create awareness towards value for indigenous arts. Money should be budgeted to host campaigns to create awareness towards indigenous handicraft as art (e.g. Australian aboriginal art).	191,000	Tourism companies, international consultant, JAKOA, museums, Ministry of Tourism, local consultant	
		Supply chain strengthened	80,000	International consultant	
	2.3.2: Human-wildlife conflict mitigation measures strengthened within Belum-Temengor and Endau-Rompin	Review of current land development and elephant translocation plans to identify any conflicts of plans that might lead to overpopulation and increased HEC, with engagement between DWNP, local communities and estate owners to increase understanding and reduce risk of retaliation against elephants	101,000	DWNP, state CFS executive units, estate owners, state economic planning departments	
		Strengthen communication mechanisms and action procedures to increase speed of response by DWNP to HWC incidents and ensure correct mitigation measures are taken	210,000	DWNP, MYCAT, local communities and estate owners, international consultant	
		Conduct wildlife and HWC awareness sessions among affected communities to encourage appropriate activities regarding HWC incidents	133,000	DWNP, MYCAT, local communities and estate owners, international consultant, local consultant	
		Pilot implementation of Tiger Challenge scheme with emphasis on involvement of local communities	206,500	International consultant, local consultant, local communities and estate owners, state CFS executive units, MYCAT	
	<b>Component 3: Diversification of financing sources for conservation (Total: \$ 1,698,500)</b>				
	<b>Outcome 3.1:</b> The long-term biodiversity and ecosystem conservation of the CFS is enhanced through the	Output 3.1.1: New market-based sources of conservation funding developed: a small hydropower watershed PES scheme in Perak, to be replicated in Johor and Pahang (PES operation paid for under co-finance)	Identification and documentation of planned small hydropower schemes located in forest areas and their potential for PES and interest in collaboration	37,500	International consultant, hydropower companies, state CFS executive units, FDPM, Department of Irrigation and Drainage
			Secure agreement with both small hydropower producers and state	51,500	State government and forest

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
diversification of funding sources for conservation		authorities to be involved in PES scheme and for the state to allow at least part of PES revenues to be retained by Forestry Departments		departments, hydropower companies, international consultant, Department of Irrigation and Drainage
		Negotiate and establish PES rates and agreements with hydropower producers and state authorities/forest departments	50,500	State government and forest departments, hydropower companies, international consultant, Department of Irrigation and Drainage
		Establish independent institutional mechanisms for verifying, monitoring and reporting on PES	121,500	State government and forest departments, hydropower companies, international consultant, Department of Irrigation and Drainage
		Research potential for transboundary PES schemes, for example between Johor state and Singapore	50,500	State government and forest departments, hydropower companies, international consultant, Department of Irrigation and Drainage
	Output 3.1.2: New private-based sources of conservation funding developed: corporate biodiversity or carbon offsets in support of priority species and landscapes	Best-practice review and market research conducted for biodiversity and carbon offset schemes based on others implemented elsewhere in South East Asia	27,500	External contractor, government
		Initiate dialogue with environmentally impacting companies such as petrol, mining or oil palm companies, to secure and negotiate agreement for involvement in biodiversity or carbon offset schemes	57,500	External Contractor, state CFS executive units, environmentally impacting companies
		Establish baselines and develop monitoring protocols to track and report on biodiversity/carbon offset schemes	108,500	External contractor, state CFS executive units, environmentally impacting companies
	Output 3.1.3: Voluntary conservation levies introduced at the state level	Communications with road authorities, hoteliers and tour operators to secure participation in voluntary conservation levy schemes, and determine appropriate charge rates	52,500	sub-contracted external org, State economic planning units, hotels, tourism companies, Ministry of Transport, state CFS



Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
				executive units
		Implementation of scheme, including production of advertisement materials, positioning of donation boxes and production of small souvenirs such as car stickers	90,500	Sub-contracted external organisation, hotels, tourism companies, Ministry of Transport, state CFS executive units
		Research and develop conservation financing scheme for NTCAP through specialised conservation vehicle licence plates which produce funds through registration and annual fees, such as those schemes in the United States	71,500	Sub-contracted external organisation, CFS technical committee, vehicle licensing authority
	Output 3.1.4: Conservation funding incorporated into sectoral budgets, including through earmarked fiscal transfers	Communication with financial and economic planning agencies and sectoral line agencies to raise awareness of the value of forest ecosystem services to the economic, development processes and sectoral output, in order to secure support for budgetary and fiscal transfers	44,500	Federal EPU, Ministry of Finance, DTCP and other sectoral line agencies, FDP, international consultant, national CFS steering committee
		Support to other line agencies to identify areas of conservation impacts and activities in their existing programmes and plans	42,500	International consultant, national CFS steering committee, other line agencies
		Negotiation of fiscal retention and transfer agreements with Ministry of Finance and state finance offices	36,500	Ministry of Finance, federal EPU, state finance offices, national CFS steering committee, international consultant
		Secure agreement from federal and state finance offices to revise federal and state Lists to allow the introduction of budgetary and fiscal transfers	33,500	Ministry of Finance, federal EPU, state finance offices, national CFS steering committee, international consultant
		Identification and implementation of concrete mechanisms for budgetary and funding transfers	49,500	Ministry of Finance, federal EPU, state finance offices, national CFS steering committee, international consultant

Outcome	Output	Indicative Activity	Indicative Budget (\$)	Stakeholders
<b>Outcome 3.2:</b> Funding allocations for biodiversity and ecosystem conservation in the CFS are secured and formalised	Output 3.2.1: The federal Conservation Trust Fund supported in its establishment (including labour and facilities provided under co-fin), with specific sub-section allocated towards CFS ecosystem and biodiversity conservation and managed by the national CFSMP steering committee, to control funds raised (under Outputs 3.1.1-3.1.4)	Internal needs assessment for federal management of planned Conservation Trust Fund and determination of an appropriate structure of the sub-fund for CFS conservation and mode of operation	108,500	Legal/financial/fund development consultant, national CFS steering committee, legal departments
		Capacity of federal government supported for the implementation and monitoring of the conservation fund and CFS sub-fund	106,500	National CFS steering committee, international consultant
		Dialogue between national CFS steering committee and participants in financing mechanisms (under Outputs 3.1.1-3.1.4) to establish means of revenue transfer to the fund	39,500	National CFS steering committee, financing mechanism participants, international consultant
		Support for production of operational manual detailing design of fund, including mission, institutional/legal framework, decision-making and management arrangements, procedures in financial management, procurement, disbursement and monitoring	81,500	National CFS steering committee, international consultant
<b>Outcome 3.3:</b> Strategic planning processes are in place and being used to link financing to conservation management needs	Output 3.3.1: Sustainable financing plans developed at both federal and landscape levels within CFS units, incorporating investment opportunities (secured through GEF investment, provided under co-finance), with landscape management plans finalised accordingly	Incorporation of financing options (from Outputs 3.1.1-3.1.4) into federal CFSMP, based on ecosystem valuation using the tool developed (under Output 1.1.4) and including a marketing/communications plan, to support current means of financing the CFSMP	100,500	National CFS steering committee, international consultant
		Institutional capacity of federal CFS steering committee, EPU members of state CFS units and LMPCs supported for planning and implementation of sustainable financing mechanisms, specifically the funding sources designed (under Outputs 3.1.1-3.1.4)	164,500	National CFS steering committee, state EPUs, LMPCs, international consultant, local consultant
		With stakeholder participation, financing options (from Outputs 3.1.1-3.1.4) are incorporated into each sustainable landscape management plan at the federal level and for the three focal landscapes, based on ecosystem valuation using the tool developed (under Output 1.1.4) and including marketing/communications plan	171,500	National CFS steering committee, international consultant, local consultant

## SECTION VI: Total Budget and Workplan

<b>Award ID:</b>	<b>00077143</b>
<b>Award Title:</b>	<b>Malaysia: Improving Connectivity in the Central Forest Spine (CFS) Landscape - IC-CFS</b>
<b>Business Unit:</b>	<b>MYS 10</b>
<b>Project ID:</b>	<b>00088128</b> <b>PIMS #: 4594</b>
<b>Project Title:</b>	<b>Improving Connectivity in the Central Forest Spine (CFS) Landscape - IC-CFS</b>
<b>Executing Agency:</b>	<b>MNRE</b>

GEF Component/Atlas Activity	Responsible Party (IA)	Fund code	Atlas Budget Account Code	Input/ Descriptions	Amount (USD) Year 1 (2014-15)	Amount (USD) Year 2 (2015 - 16)	Amount (USD) Year 3 (2016-17)	Amount (USD) Year 4 (2017-18)	Amount (USD) Year 5 (2018-19)	Amount (USD) Year 6 (2019-20)	Total (USD)	Budget Notes
<b>COMPONENT 1. Planning, compliance monitoring and enforcement framework for integrated forest landscape management;</b>												
	MNRE	62000	71200	International Consultants	40,000	125,000	75,000	42,000	35,000	25,000	<b>342,000</b>	1
	MNRE	62000	72100	Contractual Services - Companies	150,000	450,000	450,000	450,000	345,000	265,000	<b>2,110,000</b>	2
	MNRE	62000	72200	Machinery and Equipment	150,000	150,000	120,000	62,000	45,000	40,000	<b>567,000</b>	3
	MNRE	62000	75700	Training	50,000	75,000	75,000	75,000	25,000	24,000	<b>324,000</b>	4
	MNRE	62000	74100	Professional Services		14,000					<b>14,000</b>	5
	MNRE	62000	74200	Printing and Publications	20,000	25,000	25,000	22,500	15,000	10,000	<b>117,500</b>	6
	MNRE	62000	71600	Travel	24,000	42,000	42,000	34,000	27,000	16,000	<b>185,000</b>	7
				<b>Total Component 1 (GEF)</b>	<b>434,000</b>	<b>881,000</b>	<b>787,000</b>	<b>685,500</b>	<b>492,000</b>	<b>380,000</b>	<b><u>3,659,500</u></b>	
<b>COMPONENT 2. Sustainable forest landscape management of three priority forest landscapes within the CFS</b>												

MNRE	62000	71200	International Consultants	40,000	135,000	125,000	125,000	50,000	40,000	<b>515,000</b>	8
MNRE	62000	71300	Local Consultants	20,000	75,000	65,000	65,000	32,000	25,000	<b>282,000</b>	9
MNRE	62000	72100	Contractual Services - Companies	210,000	500,000	490,000	475,000	475,000	290,000	<b>2,440,000</b>	10
MNRE	62000	72200	Machinery and Equipment	100,000	250,000	227,500	24,000	20,000	14,000	<b>635,500</b>	11
MNRE	62000	75700	Training	55,000	135,000	155,000	120,000	75,000	45,000	<b>585,000</b>	12
MNRE	62000	74100	Professional Services				5,000			<b>5,000</b>	13
MNRE	62000	74200	Printing and Publications	15,000	45,000	47,500	44,000	27,000	22,500	<b>201,000</b>	14
MNRE	62000	71600	Travel	50,000	65,500	65,000	58,000	53,000	32,000	<b>323,500</b>	15
			<b>Total Component 2 (GEF)</b>	<b>490,000</b>	<b>1,205,500</b>	<b>1,175,000</b>	<b>916,000</b>	<b>732,000</b>	<b>468,500</b>	<b><u>4,987,000</u></b>	

**COMPONENT 3. Diversification of financing sources for conservation.**

MNRE	62000	71200	International Consultants	95,000	120,000	120,000	125,000	75,000	47,500	<b>582,500</b>	16
MNRE	62000	71300	Local Consultants	9,000	15,000	17,500	12,500	9,000	6,000	<b>69,000</b>	17
MNRE	62000	72100	Contractual Services - Companies	55,000	100,000	85,000	75,000	50,000	35,000	<b>400,000</b>	18
MNRE	62000	72200	Machinery and Equipment	25,000	27,500	11,000	5,000	5,000	3,500	<b>77,000</b>	19
MNRE	62000	75700	Training	25,000	75,000	65,000	60,000	37,000	25,000	<b>287,000</b>	20
MNRE	62000	74100	Professional Services		15,000	15,000	15,000	9,000		<b>54,000</b>	21
MNRE	62000	74200	Printing and Publications	4,500	25,000	25,000	22,500	7,500	5,500	<b>90,000</b>	22
MNRE	62000	71600	Travel	18,000	27,500	27,500	25,000	25,000	16,000	<b>139,000</b>	23
			<b>Total Component 3 (GEF)</b>	<b>231,500</b>	<b>405,000</b>	<b>366,000</b>	<b>340,000</b>	<b>217,500</b>	<b>138,500</b>	<b><u>1,698,500</u></b>	

Project Management												
	MNRE	62000	71300	Local Consultant	72,000	72,000	72,000	72,000	72,000	72,000	<b>432,000</b>	24
	MNRE	62000	71600	Travel	3,000	5,000	5,000	5,000	3,000	3,000	<b>24,000</b>	25
	MNRE	62000	72200	IT Equipment	5,000	3,000	1,000	1,000	500	0	<b>10,500</b>	26
	MNRE	62000	74100	Professional Services	2,500	2,500	2,500	2,500	2,500	2,500	<b>15,000</b>	27
	MNRE	62000	74500	UNDP Cost Recovery	2,500	5,000	5,000	5,000	5,000	2,500	<b>25,000</b>	28
	MNRE	62000	74500	Miscellaneous	1,000	2,000	2,000	2,000	1,500	0	<b>8,500</b>	29
				<b>Total Project Management (GEF)</b>	86,000	89,500	87,500	87,500	84,500	80,000	<b>515,000</b>	
				<b>PROJECT TOTAL</b>	<b>1,241,500</b>	<b>2,581,000</b>	<b>2,415,500</b>	<b>2,029,000</b>	<b>1,526,000</b>	<b>1,067,000</b>	<b><u>10,860,000</u></b>	

## Budget Notes

### General Cost Factors:

Local consultants (LC) are budgeted at US\$1,500 per week and international consultants (IC) are budgeted at USD \$3,000 per week, based on UNDP Malaysia standard rates. Where local expertise is likely to be found, the implementing agency may opt for local recruitment first for the international consultant positions or open up the positions for both international and nationals at the same time for selection based purely on technical competency and depth of experience rather than based on national/non-national criteria, in order to ensure the attainment of the best available expertise for any given project or consultancy positions.

### **COMPONENT 1: PLANNING, COMPLIANCE MONITORING AND ENFORCEMENT FRAMEWORK FOR INTEGRATED FOREST LANDSCAPE MANAGEMENT:**

- 1. International Consultants (IC).** Strengthening of capacity of the national CFS steering and technical committees so that the management and implementation of IC-CFS and CFSMP activities is communicated and coordinated between staff at national level and between national and state-level departments (Output 1.1.5, \$24,000). Operationalisation of the wildlife crime intelligence unit so that all intelligence data gathered by individual law enforcement agencies is collated by a central unit, manipulated and analysed efficiently and effectively using the i2 ibase data management system; in addition, all law enforcement parties will efficiently contribute data to the system and record their activities and achievements towards objectives in a clear and standardised reporting format, increasing transparency and accountability for activities, helping to monitor the effectiveness of each agency (Outputs 1.2.1 and 1.2.2, \$24,000). Enhanced knowledge and resource base and efficiency of staff at all levels of law enforcement so that there is high capacity for crime prevention, arrest, prosecution and conviction through the employment of specialised tools and techniques, creating a much stronger deterrent against wildlife and forestry crime perpetrators (Output 1.2.4, \$84,000). **(Total of 44 weeks). IC Sub Total: \$132,000.** A Chief Technical Advisor will also be contracted part-time to provide technical assistance for all project activities as and when necessary, as per the ToR below **(Total of 70 weeks). CTA Total: \$210,000. TOTAL: \$342,000**
- 2. Contractual Services (CS).** Strengthening of the national biodiversity clearing house mechanism for application in integrated forest landscape management and calculation of the Biodiversity Intactness Index through the establishment of a biodiversity indicator taskforce, support in the collation of species distribution/richness data for the CFS, creating maps of each target state including various environmental aspects, calculation and updating of the BII, and the investigation of potential for a web-based platform for the clearing house mechanism (Output 1.1.1, \$490,000). Establishment of a system for appropriate and timely conduction of EIAs within development planning, with institutional coordination and monitoring mechanisms enplaced (Output 1.1.2, \$65,000). Integration ecosystem-valuation tools in landscape planning by the CFS technical committees (Output 1.1.3, \$180,000). Development and application of a GIS-based decision support system to analyse environmental and human information of the three landscapes, guidelines prepared for use of the tool for training purposes (Output 1.1.4, \$205,000). Institutionalisation of the application of the INRM tools (developed under Component 1) within the national CFS technical committee in, according to each member's specialism; also to provide for improved communication systems to enhance coordination of CFSMP management and implementation within and between national and state governments, with monitoring mechanisms in place (Output 1.1.5, \$235,000). Establishment of a dedicated and fully-staffed wildlife crime intelligence unit within the federal WCU for collating and managing data gathered by all law enforcement parties to increase law enforcement effectiveness; also to assist with the institutionalising of the i2 ibase software for comprehensive and rapid analysis and distribution of all data gathered (Output 1.2.1, \$205,000).

Operationalisation of efficient and standardised reporting system for all law enforcement agencies for effective analysis of both intelligence information and impacts of each agency, with specific members of the federal WCU designated for management (Output 1.2.2, \$70,000). Establishment and operationalisation of a community-based monitoring network, which will have capacity to conduct patrols, identify evidence of criminal activity, and record and report intelligence data to state wildlife and forestry departments, also serving to increase local knowledge for and involvement in the protection of their natural resources and generate local income (Output 1.2.3, \$275,000). Establishment of coordinated state-level WCUs for stronger institutional and systemic cohesion for law enforcement, and operationalise resources and standardised techniques for enhanced monitoring, intelligence gathering and case management as well as the provision of resources for continuation of capacity post project and through staff turnover; also to support a strengthened system and knowledge base for case transfer between agencies and departments from interception and arrest to conviction in court, with provisions for continuation of capacity (Output 1.2.4, \$375,000) **(8 distinct contracts). Sub Total: \$2,110,000**

3. **Machinery and Equipment.** Machinery and equipment in support of efficient and effective biodiversity and ecosystem services monitoring as part of planning, and monitoring impacts of, sustainable landscape management: laptops, printers and projectors, communications, office-ware, GIS software, biodiversity data gathering and monitoring and ecosystem valuation software. For highly specialised and comprehensive wildlife and forestry crime law enforcement and monitoring: computers, printers and projectors, intelligence management, monitoring and reporting software, secure communications equipment, security and safety equipment, camping equipment, uniforms and other camouflage materials, and equipment such as GPS devices, night vision software, camera traps, radios and repeaters. **Sub Total: \$567,000**
4. **Training.** Provision of training pertaining to formation of a biodiversity monitoring task force, rationalisation of the National Biodiversity Clearing House Mechanism, the development and application of INRM tools, the establishment and operationalisation of community-based monitoring networks, the state WCUs and the wildlife crime intelligence unit, and improvement of data gathering and transfer systems. Institutionalisation of training programmes will be supported within relevant institutions such as the Institute of Biodiversity, or respective national and state government agencies. Whenever contractual services are employed, government authorities and other local stakeholders will be involved in their activities (as relevant), with knowledge and skills being gradually but heavily transferred from the experts to the national, subnational and local institutions, thus institutionalising capacity. Participation will be required for most activities, including the. **Sub Total: \$324,000**
5. **Professional Services.** Legal and/or accountancy specialists in support of the securing of agreement between the Department of Environment, state offices and other involved authorities for an appropriate protocol for the completion of EIAs during the planning of development projects, so that plans are adapted according to requirements for environmental sustainability before approval (Output 1.1.2, \$9,000); the establishment and legalisation of the federal wildlife crime intelligence unit, the mandate of which will be to serve as a central institution in which all law enforcement efforts will be harmonised for increased efficiency, and to collate, analyse and distribute all intelligence data to relevant parts for greater effectiveness (Output 1.2.1, \$5000). **Sub Total: \$14,000**
6. **Printing and Publications.** Development and publication of biodiversity and habitat maps for use in sustainable landscape management planning; guidelines for the use of tools for more effective integrated natural resource management and wildlife and forestry crime monitoring; for training materials so that knowledge and skills may be passed on within institutions after project end; for other informative documents for dissemination to key stakeholders for increased awareness and involvement, as appropriate. **Sub Total: \$117,500.**
7. **Travel.** Travel and associated costs for consultants, contractors and project staff to reach project headquarters and landscape sites for various tasks including stakeholder consultations,

decision making and consensus building meetings, technical on-site investigation, research, training, project management or committee meetings, and for conducting awareness raising strategies in each landscape. **Sub Total \$185,000**

**Total Component 1 (GEF): USD \$3,659,500**

**COMPONENT 2: SUSTAINABLE LANDSCAPE MANAGEMENT OPERATIONALISED IN THREE PRIORITY FOREST LANDSCAPES IN THE CFS**

8. **International Consultants (IC).** Establishment of a CFS executive unit within each target state, the staff of which will plan and make decisions based on the sustainability of different land use options so that both economic and environmental benefits will be reaped for all stakeholders through the conservation of the CFS (Output 2.1.1, \$63,000). Establishment and operationalization of community-based organisations in two pilot landscapes which generate increased and sustainable incomes for local communities based on natural resources, with strong market linkages and supply chains, therein providing the incentive to conserve wildlife in the CFS (Output 2.3.1, \$126,000). Improvement of communication mechanisms between communities and wildlife authorities so that human-wildlife conflict is mitigated, and damage to livelihoods minimised, sufficiently for illegal activities against wildlife to be prevented; also to conduct community awareness sessions regarding the appropriate mitigation measures and protocols so that the improved measures will be implemented effectively; and to support the implementation of the Tiger Challenge in the target landscapes so that local communities have greater involvement in developing innovative human-wildlife conflict mitigation measures and relationships between communities and authorities improve (Output 2.3.2, \$66,000). **(Total of 85 weeks). IC Sub Total: \$255,000.** A Chief Technical Advisor will also be contracted part-time to provide technical assistance for all project activities as and when necessary, as per the ToR below **(Total of 86.6 weeks). CTA Total: \$260,000. TOTAL: \$515,000**
9. **Local Consultants (LC).** Technical and facilitation support for state forestry and wildlife officers to contribute to CFS management and monitor project impacts on the environment through biodiversity and habitat data collection and identification of taxa for indicator species for habitat health (Output 2.1.1, \$90,000). Development of sustainable management plans for each landscape through facilitating stakeholder participation in order that the implementation of plans takes into account the roles and needs of all stakeholder groups, ensuring the achievement of sustainability through the generation of conservation-related benefits to all groups (Output 2.1.2, \$63,000). Finalisation and demarcation of areas for ARR activities in order to minimise any conflict with local stakeholders (Output 2.2.1, \$6,000). Stakeholder consultations in the gazettelement of priority tiger habitat areas (Output 2.2.2, \$12,000). Establishment of CBOs and enable CBO members to successfully generate income through conservation-related activities – ecotourism and natural handicrafts – and to ensure strong market linkages for these livelihoods. Awareness raising of indigenous art in order to encourage acceptance of these marginalised communities amongst the general public and attract potential consumers of traditional products through national marketing events (Output 2.3.1, \$75,000). Engagement with local landowners and conduct awareness sessions among local communities regarding human-wildlife conflict mitigation protocols and supporting the implementation of the Tiger Challenge scheme so that communities are better involved in such mitigation measures and build support for mitigation rather than retaliation (Output 2.3.2, \$36,000). **(Total of 188 weeks). Sub Total: \$282,000**
10. **Contractual Services (CS).** Resourcing and staffing of designated state CFS executive units with capacity for the management and implementation of CFSMP activities according to legal framework and best practice, and for applying INRM tools in landscape management planning and monitoring project impacts on biodiversity and ecosystem services; also to assist with awareness raising and communications regarding CFS conservation and project plans, including through social networking and making short films, so that the state management of the CFSMP is strengthened by a supportive stakeholder environment (Output 2.1.1, \$495,000). Participatory development of site-specific management plans for each landscape, defining strategic goals and stakeholder responsibilities for effective implementation of the plans; also to pilot the



application of the AMMO hierarchy for EIAs of planned development projects (Output 2.1.2, \$395,000). Integration of the INRM tools into sustainable management of the three landscapes through providing support for the monitoring and analysis of biodiversity and habitat data for recalculation of the BII and measuring project impacts upon the environment over time (Output 2.1.3, \$165,000). Selection and rehabilitation of semi-degraded forest landscape in line with ARR methodologies, informed by environmental data, and annual reassessments of carbon stocks using GIS (Output 2.2.1, \$340,000). Gazettement and demarcation of strategically and scientifically selected critical corridor forest (Output 2.2.2, \$205,000). Identification of suitable wildlife crossings to enable wildlife movement across infrastructural barriers (Output 2.2.3, \$235,000). Establishment and capacity of ecotourism and handicrafts CBOs, with firm market linkages, for enhanced and sustainable income generation for local communities (Output 2.3.1, \$315,000). Implementation of more effective mitigation measures for human-wildlife conflict through systemic strengthening for responses to incidents and increasing the involvement of local communities (Output 2.3.2, \$180,000). Monitoring and evaluation costs, including: Contracted services for Mid term review and Terminal Evaluations including: International Project Evaluators, National Project Evaluators and associated travel for evaluators (total \$95,000); **(9 distinct contracts). Sub Total: \$2,440,000**

11. **Machinery and Equipment.** Machinery and equipment in support of the achievement of sustainable landscape management under Component 2. They include laptops, printers and projectors and office ware for the state CFS units; as well as communications equipment, items for biodiversity monitoring such as GPS devices and binoculars, soil carbon measuring devices, camera traps and other measuring equipment. Equipment will be required for the demarcation of the gazetted areas, such as signposts and installation materials. Equipment for communications strategies and the Tiger Challenge will include information boards, video cameras, radios and other materials required for the Challenge participants; and other equipment for improved human-wildlife conflict responses such as alarm systems and radios. **Sub Total: \$635,500**
12. **Training.** Development of long term institutional and local capacity for CFS conservation, management and monitoring through: strengthening institutional and operational capacity so that knowledge can be shared with government authorities and other stakeholders; the participatory development of landscape management plans, ensuring that all stakeholders have knowledge of the various aspects of sustainable land use planning and capacity for implementation; out-reach and awareness sessions will be held in each landscape to educate stakeholders on CFS conservation;. as part of the establishment and operationalisation of CBOs, knowledge and skills will be transferred from relevant experts and other CBOs and NGOs onto the members of the CBOs; knowledge of the utilisation of natural resources will be shared through awareness campaigns regarding indigenous art. Knowledge-sharing will also be carried out for improved human-wildlife conflict measures **Sub Total: \$585,000**
13. **Professional Services.** Legal services for the gazettement of the 20,000 ha critical corridor forest for increased tiger habitat connectivity and carbon emissions avoidance (Output 2.2.2, \$5,000). **Sub Total: \$5,000**
14. **Printing and Publications.** Development and publication of the sustainable landscape management plans, associated studies and advocacy materials. Production of various awareness raising materials, marketing and communications strategies in the three landscapes (involving the production of posters and art prints, leaflets) will also be produced. Training materials, biodiversity monitoring and reporting documents and other informative documents for dissemination to key stakeholders will be printed and publicised as appropriate. **Sub Total: \$201,000**
15. **Travel.** Travel and associated costs for consultants, contractors and project staff to reach project headquarters and landscape sites for various tasks including stakeholder consultations, decision making and consensus building meetings, technical on-site investigation, research, training, project management or for conducting awareness raising strategies in each landscape. **Sub Total: \$323,500**

**Total Component 2 (GEF): USD \$4,987,000**

**COMPONENT 3: DIVERSIFICATION OF FINANCING SOURCES FOR CONSERVATION**

16. **International Consultants (IC).** Development of a hydro-based PES mechanism, in Perak state initially, so that sustainable funding is provided for CFS conservation and sustainable management through PES agreements between hydropower companies and the state forest departments, with independent verification mechanisms established to ensure correct management. Feasibility assessment for transboundary PES schemes so that the involvement of Thailand or Singapore in such schemes may both increase funds and encourage the mainstreaming of biodiversity into development planning across the entire peninsula (Output 3.1.1, \$87,000). Establishment of private-based sources of funding such as biodiversity and carbon offsetting schemes, and to emplace monitoring protocols to ensure maximum effectiveness of such schemes (Output 3.1.2, \$63,000). Diversification of funding sources for CFS conservation (involvement of the general public in conservation funding, including development and implementation of voluntary conservation levies, including tourist- and road user-targeted levies, as well as researching and developing a suitable scheme for the selling of specialised conservation vehicle licence plates (Output 3.1.3, \$42,000). Promotion of consideration of conservation funding allocations into regular and long term budgetary processes through incorporation into sectoral budgets, securing government agreements for introducing budgetary and fiscal transfers (Output 3.1.4, \$72,000). Application of the the federal Conservation Trust Fund for CFS conservation, with an appropriate structure established for a CFS sub-fund; also coordination between the national CFS steering committee and the participants in financing mechanisms to ensure straightforward and transparent transfers of revenue into the fund (Output 3.2.1, \$63,000). Sustainable financing of CFS landscape management both nationally and at state level, through the development of sustainable financing plans incorporating diverse financing mechanisms (under Component 2), so that the sustainable management and conservation of the CFS may continue relatively independently of national economic fluctuations. Capacity development of the CFS and landscape management planning committees to plan and implement these sustainable financing mechanisms, and to finalise the three landscape management plans according to their respective sustainable financing plan (Output 3.2.2, \$60,000). **(Total of 129 weeks). IC Sub Total: \$387,000.** A Chief Technical Advisor will be contracted part-time to provide technical assistance for all project activities as and when necessary, as per the ToR below **(Total of 65.2 weeks). CTA Total: \$195,500. TOTAL: \$582,500**
17. **Local Consultants (LC).** Development and piloting of a PES scheme in Perak state through facilitating communication with local stakeholders and hydropower companies as appropriate (Output 3.1.1, \$18,000). Support for negotiations with the corporate sector in order to further diversify conservation funds through the implementation of biodiversity and/or carbon offset schemes (Output 3.1.2, \$12,000). Facilitation of dialogue with tourism companies and road authorities in order to secure participation in voluntary conservation levy schemes at the state level (Output 3.1.3, \$12,000). Facilitation of dialogue with all conservation funding participants in order to coordinate revenue transfer to the Conservation Trust Fund (Output 3.2.1, \$6,000). Capacity development of the LMPCs as well as other relevant government authorities for planning and implementing sustainable financing mechanisms and for incorporation of these mechanisms into sustainable landscape management plans, facilitating stakeholder participation so that there is well-represented involvement of stakeholder groups in the management of their own resources (Output 3.3.1, \$21,000). **(Total of 46 weeks). Sub Total: \$69,000**
18. **Contractual Services (CS).** CS will be procured for: (i) establishment of monitoring and verification mechanisms of PES schemes (Output 3.1.1, \$60,000); (ii) application of the government Conservation Trust Fund for CFS conservation through conducting a needs assessment and ensuring that systems are in place for the federal government to manage and monitor the conservation fund both as a whole and with regards to the CFS sub-fund specifically; (iii) preparation of a comprehensive operational manual for all aspects of the fund, including legal framework, decision-making, and financial management, procurement and

disbursement for future training purposes (Output 3.2.1, \$140,000); (iv) integration of financing options into the federal CFSMP and produce a marketing/communications plan in order to gain further financial support for its implementation; (v) development and operationalization of the state landscape management plans by the same means; and (v) capacity development of all relevant government and landscape management authorities are able to plan and implement sustainable financing mechanisms as developed within this component (Output 3.3.1, \$200,000). **(4 distinct contracts). Sub Total: \$400,000**

19. **Machinery and Equipment.** Equipment for monitoring of the impact of sustainable conservation financing mechanisms such as PES schemes and biodiversity and carbon offset schemes. The equipment will include laptops, biodiversity, ecosystem and carbon monitoring apparatus such as for water quality and soil carbon, analysis software. For the implementation of voluntary conservation levies equipment will be needed such as information boards and other communications equipment, revenue collection boxes, signposts (and installation equipment), souvenirs, as well as equipment for the vehicle licensing scheme. **Sub Total: \$77,000**
20. **Training.** Knowledge, skills and information will be shared through several means, such as through stakeholder and collaboration meetings with regards to potential PES schemes, transboundary PES schemes and biodiversity and carbon offset schemes, as well as other conservation funding schemes, with findings documented for dissemination. Capacity for funds allocation and management will be shared during internal needs assessments and the establishment of systemic structures with corresponding operational manuals; with stakeholder participation capacity will be supported for sustainable financing of CFS conservation and management, through the integration of funding mechanisms into each focal landscape management plan. **Sub Total: \$287,000**
21. **Professional Services.** Legal Specialists: (i) the legalisation of the diversification of funding sources for CFS conservation through the preparation and legalisation of agreements between hydropower companies and state forest departments (Output 3.1.1, \$21,000); (ii) for preparation of contracts with environmentally impacting companies in participation of biodiversity and carbon offset schemes (Output 3.1.2, \$15,000); (iii) for legalisation of agreements with Ministry of Finance and other finance offices for incorporating conservation funding into sectoral budgets (Output 3.1.4, \$15,000); (iv) in support of the Conservation Trust Fund, through the formulation of legal framework for the CFS sub-fund operation manual so that capacity for funds management may continue post-project (Output 3.2.1, \$3,000). **Sub Total: \$54,000**
22. **Printing and Publications.** Compilation and publication of research reports, legal documents, financing schemes and sustainable financing plans for each landscape, as well as for training materials, research and communications documents and other informative documents for dissemination to key stakeholders as appropriate. **Sub Total: \$90,000**
23. **Travel.** Travel and associated costs for consultants, contractors and project staff to reach project headquarters and landscape sites for various tasks including stakeholder consultations, decision making and consensus building meetings, technical on-site investigation, research, training, project management or committee meetings, and for conducting awareness raising strategies in each landscape. **Sub Total \$139,000**

**Total Component 3 (GEF): USD \$1,698,500**

## **PROJECT MANAGEMENT**

24. **Local Consultants (LC).** A National Project Manager will be recruited to manage project activities and progress towards objectives, as per the ToR below. **(288 weeks total). Sub Total: \$432,000**
25. **Travel:** A total of \$24,000 has been budgeted for non-output related activities to support project management. **Sub Total: \$24,000**
26. **Machinery and Equipment:** \$10,500 has been budgeted for computer purchases, upgrades and

services as well as communications equipment for the project management team. **Sub Total: \$10,500**

27. **Professional Services.** An accountancy firm will be hired at \$2,500 per year for annual audits. **Sub Total: \$15,000**
28. **Misc - UNDP Cost Recovery Charges:** Estimated UNDP Direct Project Service/Cost recovery charges for international and national consultant recruitment services requested by the FDP/DFPM/NRE to UNDP for executing services as indicated in the Agreement in Section VII Part I of the Project Document. The cost (Total USD 25,000) includes: (i) recruitment and payroll management of project staff; (ii) purchase of goods and equipment as requested; and (iii) hiring of consultants. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget. DPS costs would be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost. The amounts here are estimations based on the services preliminarily indicated, however as part of annual project operational planning the DPS to be requested during the calendar year would be defined and the amount included in the yearly project management budgets and would be charged based on actual services provided at the end of that year. **Sub Total: \$25,000**
29. **Misc:** Contingency for possible exchange rate fluctuations and PCU operational communications costs (email, internet, telephones). **Sub Total: \$8,500**

**Total Project Management (GEF): USD \$515,000**

**WORKPLAN.** This budget will be used as the basis for the preparation of Annual Work Plans by the Project Coordination Unit.

## Co-Financing

Name of Co-financier (source)	Classification	Type	Project (USD)	%
National Government (NRE, DFPM, DWNP)	Government	Grant	29,100,000	80
National Government (NRE, DFPM, DWNP)	Government	In Kind	3,000,000	8
State of Pahang, Perak and Johor	Government	Cash	2,000,000	6
State of Pahang, Perak and Johor	Government	In Kind	900,000	2
UNDP Malaysia	GEF Agency	Grant	1,500,000	4
<b>Total Co-financing</b>			<b>36,500,000</b>	<b>100.0</b>

## **SECTION VII: ADDITIONAL INFORMATION**

### **PART I: Other agreements**

#### **CO-FINANCING LETTERS AND LETTER OF AGREEMENT FOR DIRECT PROJECT SERVICES**

*-- See separate file—*

## STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT FOR THE PROVISION OF SUPPORT SERVICES

Dear Dato' Prof. Dr. Hj Abd. Rahman bin Hj. Abd. Rahim.

1. Reference is made to consultations between officials of the Government of Malaysia (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
  - (a) Identification and/or recruitment of project and programme personnel;
  - (b) Identification and facilitation of training activities;
  - (c) Procurement of goods and services;
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.
5. The relevant provisions of the **Standard Basic Assistance Agreement, 12 September 2013** (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.
6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.
8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.
9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.
10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

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Signed on behalf of UNDP

[ Resident Representative]

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For the Government

**Dato' Prof. Dr. Hj Abd. Rahman bin Hj. Abd. Rahim**  
Director-General, Forestry Department Peninsular Malaysia

[Date]

## Attachment

### DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between **Forestry Department Peninsular Malaysia**, the institution designated by the **Government of Malaysia** and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project **Improving Connectivity in the Central Forest Spin, (PIMS 4594)**.

2. In accordance with the provisions of the letter of agreement signed on **2 December 2013** and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1.Hiring of project management staff	Will be determined during the inception of the project	Using the latest Universal Price List	Will be deducted from the budget of the project
2. Purchase of goods like equipments and computers	Will be determined during the inception of the project	Using the latest Universal Price List	Will be deducted from the budget of the project
3. Hiring of consultants	Will be determined during the inception of the project	Using the latest Universal Price List	Will be deducted from the budget of the project

4. Assistance may consist of any other form which may be agreed by FDPM and UNDP

5. Description of functions and responsibilities of the parties involved:

- FDPM to determine the type of services to be provided by UNDP, in line with AWP.
- FDPM will be consulted by UNDP in the process of providing the support services.
- UNDP will update FDPM, quarterly, on the costs of the provision of these services.

6. All decisions related to support services provided by UNDP shall be made upon agreement/approval by FDPM



## **PART II: Terms of References for key project staff**

### **NATIONAL PROJECT MANAGER**

#### Background

National Project Manager (NPM), will be a locally recruited national selected based on an open competitive process. He/She will be responsible for the overall management of the Project, including the mobilisation of all project inputs, supervision over project staff, consultants and sub-contractors. The NPM will report to the National Project Director from Forestry Department in close consultation with the assigned UNDP Programme Manager for all of the Project's substantive and administrative issues. From the strategic point of view of the Project, the NPM will report on a periodic basis to the Project Steering Committee (PSC), based on the NPD's instruction. Generally, the NPM will support NPD who will be responsible for meeting government obligations under the Project, under the national execution modality (NEX). He/She will perform a liaison role with the government, UNDP and other UN agencies, NGOs and project partners, and maintain close collaboration with other donor agencies providing co-financing. He/She will work closely with the Chief Technical Advisor and Landscape Coordinators.

#### Duties and Responsibilities

- Supervise and coordinate the production of project outputs, as per the project document in a timely and quality fashion;
- Mobilise all project inputs in accordance with UNDP procedures for nationally executed projects;
- Supervise and coordinate the work of all project staff, consultants and sub-contractors ensuring timing and quality of outputs;
- Coordinate the recruitment and selection of project personnel, consultants and sub-contracts;
- Prepare and revise project work and financial plans, as required by PSC and UNDP;
- Liaise with UNDP, PSC, relevant government agencies, and all project partners, including donor organisations and NGOs for effective coordination of all project activities;
- Facilitate administrative backstopping to subcontractors and training activities supported by the Project;
- Oversee and ensure timely submission of the Inception Report, Combined Project Implementation Review/Annual Project Report (PIR/APR), Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF and other oversight agencies;
- Disseminate project reports and respond to queries from concerned stakeholders;
- Report progress of project to the steering committees, and ensure the fulfilment of steering committees directives.
- Document the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally;
- Ensures the timely and effective implementation of all components of the Project;
- Coordinate and assists scientific institutions with the initiation and implementation of all field studies and monitoring components of the Project
- Carry regular, announced and unannounced inspections of all sites and the activities of the project site management units.

### Qualifications

- A university degree (MS or PhD) in a subject related to natural resource management or environmental sciences;
- At least 10 years of experience in natural resource management (preferably in the context of forest PA landscape planning and management);
- At least 5 years of demonstrable project/programme management experience;
- Working experience with ministries, national or provincial institutions concerned with natural resource management and environmental protection is a plus, but not a requirement;
- Ability to effectively coordinate a large, multi-stakeholder project;
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project;
- Strong drafting, presentation and reporting skills;
- Strong computer skills, in particular mastery of all applications of the MS Office package and internet search;
- Strong knowledge about the political and socio-economic context related to the CFS Master Plan, protected area system, biodiversity conservation at national and state levels;
- Excellent command of English and Malay.

## CHIEF TECHNICAL ADVISOR

### Background

The Chief Technical Advisor (CTA) will be an internationally recruited individual selected based on an open competitive process. He/She will be employed by the Project on a flexible part-time basis, for an average of 38 weeks per year, but commitments are likely to fluctuate. He/She will work closely with and report to the National Project Manager (NPM) and will be responsible for providing oversight and technical support and advice in all project activities as well as providing quality control.

The CTA will also work closely with each Landscape Coordinators in terms of provision of technical advice and support, ensuring that objectives are met.

### Duties and Responsibilities

- Provide technical and strategic assistance to the Project Director, Project Manager and other counterparts in areas of project management and planning, in particular the development of annual work plans, monitoring progress, providing quality assurance for outputs, and ensuring that annual, mid-term and end-of-project targets will be met;
- Bring international experiences to project planning and implementation to ensure that full use is made of global and national lessons learned, and that best practices are used to achieve the project goal of realising sustainable forest landscape management in the CFS securing biodiversity and ecosystem services;
- Provide technical support to the Project Manager in preparing Terms of Reference for consultants and sub-contractors, and provide assistance in the selection process;
- Provide technical support to the Landscape Technical Specialists for target landscape level activities;
- Provide technical support to the Project Manager in coordinating the work of all consultants and sub-contractors, ensuring timely and quality delivery of expected outputs, effective synergy among the various sub-contracted activities, and integration of project outputs into Government work;
- Provide technical support for management of site activities, monitoring, and impact assessment, as well as technical support in the areas of: *inter alia*, biodiversity conservation, strategic planning, landscape planning and associated institutional capacity development, PA integration and mainstreaming, as well as conservation finance.
- Assist and advise the FDPM, DWNP and state governments in key strategic and policy issues related to biodiversity, protected areas, institutional strengthening processes, and appropriate monitoring and evaluation systems and knowledge management systems;
- Assist the National Project Director and Project Manager with technical input in preparation of the inception report, Combined Project Implementation Review / Annual Project Report, and technical reports for submission to UNDP, the GEF, other donors and the Government, as required;
- Assist the National Project Director and Project Manager in mobilizing staff and consultants in the conduct of a mid-term project review, and in undertaking revisions in the implementation programme and strategy, based on evaluation results;

- Provide capacity building support to FDPM, DWNP and state government staff and PA managers;
- Assist the National Project Director and Project Manager in liaison work with project partners, donor organizations, NGOs and other groups to ensure effective coordination of project activities, and coordination with local, national and international complementary projects and programmes;
- Support the Project Manager in documenting lessons learned through implementation of the project and assist in making recommendations to the Project Steering Committee for more effective implementation and coordination of project activities;
- Produce policy briefing papers and technical reports to support decision-making processes, advocacy and knowledge management;
- Perform other tasks as may be requested by the National Project Director and Project Manager.

### Qualifications

- University education (MS or PhD) with expertise in the area of forest protected area landscape and management and conservation planning and management;
- At least 15 years of professional experience in conservation planning and management and proven ability to work with multiple stakeholders;
- Demonstrable experience in the implementation of multilateral donor funded or government funded international development projects, with strong skills in monitoring and evaluation;
- Demonstrable experience in project organization and ability to serve as effective negotiator with excellent oral presentation skills;
- Good knowledge of international best practice in PA landscape planning and management, and conservation in general, is desirable;
- Previous experience with GEF projects is an advantage;
- Ability to effectively coordinate a large, multidisciplinary team of experts and consultants;
- Be an effective negotiator with excellent oral and presentation skills;
- Excellent written communication skills including the ability to prepare clear technical and management reports;
- Fluency in English is required.

## Overview of Inputs from Technical Assistance Consultants

*Table 15. Expected Technical Assistance Inputs*

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
<b>For Project Management / Monitoring &amp; Evaluation</b>			
<i>National Contracting</i>			
National Project Manager	1,500	288	Responsible for overall management of the Project, including the mobilisation of all project inputs, supervision over project staff, consultants and sub-contractors, as per the ToR
<i>Professional Services</i>			
Accountancy firm	n/a: \$2,500 per year		To conduct annual project audits
<b>For Technical Assistance</b>			
<b>Component 1</b>			
<i>Local / National contracting</i>			
none			
<i>International / Regional and global contracting</i>			
Chief Technical Advisor	3,000	70	<i>In support of all project activities:</i> To provide technical guidance and advice for all project activities where possible, as per the ToR
Specialist in project management and monitoring	3,000	8	<i>In support of strengthened management capacity and operations of the existing national CFS steering and technical committees under Output 1.1.5:</i> To provide training in best practice project management, including information-sharing, communication and coordination methods between CFS committees and departments, and in monitoring of state-level implementation activities (including their appropriate use of INRM tools)
Law enforcement and crime interception specialists (qualified in use of SMART tool and i2 ibase data system)	3,000	36	<i>In support of the establishment of a fully resourced wildlife crime intelligence unit under Output 1.2.1:</i> To provide training for wildlife crime intelligence unit in the use of the i2 ibase intelligence management system for collation and analysis of all data gathered by other law enforcement departments and agencies; <i>In support of efficient transfer of wildlife crime information between departments and agencies under Output 1.2.1:</i> To develop a standardised reporting format for all law enforcement agencies for efficient input of data into the ibase system and monitoring of activities <i>In support of strengthened state official capacity for wildlife and forestry crime monitoring, interception and conviction under Output 1.2.4:</i> To provide training of law enforcement agencies and state WCUs with regards to application of SMART

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			<p>tool in wildlife crime monitoring, as well as assist other specialist agencies with education and training in intelligence gathering, species identification, trade and smuggling routes and techniques, and development of standard operating procedure for scene of crime management;</p> <p>To assist in provision of training of all legal officers (including magistrates, state level prosecutors, judiciary officers, etc.) in legal processes, wildlife laws, enforcement and practicalities involved, and development of standard operating procedure for case management and transfer. Will also support capacity for the continuation of training programmes post project.</p>
<b>Contractual services</b>			
<p>Internationally accredited biodiversity and ecosystem monitoring and management institution</p>	<p>n/a: discrete contract</p>		<p><i>In support of the formation of a taskforce for monitoring the BII of the CFS and application of national biodiversity clearing house mechanism in landscape management planning under Output 1.1.1:</i></p> <p>To provide technical guidance for the establishment of an appropriately staffed and resourced task force (mandated to manage the calculation of the BII as well as to enhance the usefulness of the clearing house mechanism); also to facilitate and advise on the compilation of a wide range of environmental data (biodiversity, ecosystem services and carbon stocks and their economic values) from various sources to enhance the clearing house mechanism and encouraging its relevance to land management planning, from informing decision-making to monitoring environmental impacts of land uses; also to investigate the potential for the development of a web-based platform for the clearing house mechanism;</p> <p><i>In support of the introduction of ecosystem service valuation tools for landscape management planning under Output 1.1.3:</i></p> <p>Strengthen capacity for valuation of ecosystem services and use of appropriate tools and prepare training materials; conduct trial valuation of ecosystem services within specified area of CFS;</p> <p><i>In support of strengthened management and operational capacity of the national CFS steering and technical committees under Output 1.1.5:</i></p> <p>To institutionalise the application of INRM tools in landscape management planning according to member's specialism, through theoretical and practical exercises, according to preferred approach</p>
<p>Biodiversity Intactness Index specialist institution</p>	<p>n/a: discrete contract</p>		<p><i>In support of the application of the BII in monitoring the biodiversity of the CFS under Output 1.1.1:</i></p> <p>To provide technical support for the formation and operationalisation of a BII taskforce and for initial gathering of data for the BII, with simultaneous</p>

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			training given to the taskforce; also support the taskforce for calculating BII for the entire CFS landscape, according to the institution's preferred approach, with regular recalculations to monitor project impact, to gradually hand over responsibilities to BII taskforce
GIS specialist institution	n/a: discrete contract		<p><i>In support of the application of the BII in monitoring the biodiversity of the CFS under Output 1.1.1:</i> To create GIS maps for each target state to include forest extent, habitat type, ecosystems and species in order to spatially analyse data and impact factors for the BII; to regularly update along with land use information in order to assess project impacts on the BII of the three landscapes;</p> <p><i>In support of the development of a GIS-based decision support system for landscape management planning, under Output 1.1.4:</i> To gather additional environmental data for the GIS maps created above, including topography, climatic data, soils and ecosystem services etc., as well as human data such as settlements, population density, land use, crop types and PRF types; compile into GIS maps and develop decision-making system through trialling various environmental scenarios according to land use options; formulate tool guidelines for training purposes and future reference</p>
EIA specialist institution	n/a: discrete contract		<p><i>In support of the incorporation of the AMMO hierarchy into landscape management protocols under Output 1.1.2:</i> To emplace coordination and monitoring systems for the implementation of conditions stated by the DOE following EIAs and to develop comprehensive guidelines for incorporating EIA and AMMO into development planning</p>
Specialist in law enforcement/management	n/a: discrete contract		<p><i>In support of the establishment, staffing and operationalisation of the wildlife crime intelligence unit under Output 1.2.1:</i> To provide technical guidance for the establishment of specialised wildlife crime intelligence unit within federal WCU, with mandate formalised and appropriate staffing, institutional, management and operational structures emplaced for communications and coordination with other agencies and appropriate data management and distribution; also to assist with building capacity for intelligence management;</p> <p><i>In support of monitoring and reporting protocols emplaced for information transfer under Output 1,2,2:</i> To strengthen and standardise reporting systems for each law enforcement agency with regards to data sharing and progress against objectives;</p> <p><i>In support of strengthening community-level capacity for wildlife and forestry crime monitoring under Output 1.2.3:</i> To support the operationalisation and capacity of community-based monitoring networks through the</p>

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			provision of expert advice with regards to monitoring and reporting best practice and other aspects
Specialist in Honorary Wildlife Warden scheme	n/a: discrete contract		<i>In support of strengthening community-level capacity for wildlife and forestry crime monitoring under Output 1.2.3:</i> To provide technical support and advice on appropriate formation and operations of community-based monitoring network in each landscape, based on lessons learned from Honorary Wildlife Warden scheme experiences
Highly-specialised law enforcement agency	n/a: discrete contract		<i>In support of state official capacity for wildlife and forestry crime monitoring and law enforcement under Output 1.2.4:</i> To provide strong external specialist support in for all law enforcement departments and agencies in optimal institutional structures, best practice and specialised techniques and resources for crime interception and prevention, including intelligence gathering, common trade routes and smuggling techniques, and support for the development of standard operating procedures for scene of crime management; with support also given to DWNP for providing further training; also to provide specialist advice with regards to case transfer between departments as well as background knowledge with regards to wildlife laws and penalties etc, so that each arrest will lead to appropriate convictions, with provisions made for continuation of training post project
<b>Professional services</b>			
Legal firm	n/a: discrete contracts		<i>In support of improved effectiveness of the EIA process for land use planning under Output 1.1.2:</i> To assist in legalisation of agreement between DOE and other authorities regarding EIA implementation; <i>In support of the establishment of a federal wildlife crime intelligence unit under Output 1.2.1:</i> To complete the process of legalisation of the wildlife crime intelligence unit
<b>Component 2</b>			
<b>Local / National contracting</b>			
Biodiversity experts	1,500	64	<i>In support of strengthened state level capacity for CFSMP implementation and management under Output 2.1.1:</i> To provide training to state forestry and wildlife officers in biodiversity and habitat data collection and identification of taxa for indicating corridor health, for incorporation of environmental data into landscape planning, through theoretical and practical exercises on species identification, species composition of different habitats, suitable survey methods, data recording, use of GPS; <i>In support of rehabilitation of at least 4,000 ha of semi-degraded forest landscape under Output 2.2.1:</i> To provide support with ground-truthing of



Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			suitability of selected areas for rehabilitation and to communicate plans to relevant stakeholders
Conference facilitator	1,500	42	<i>In support of the development of preliminary landscape management plans for each landscape under Output 2.1.2:</i> To facilitate successful selection of landscape management planning committee according to stakeholder/gender/age representation and to facilitate and mediate discussions between stakeholders and state CFS units with the aim of formulating management plans with full input from all stakeholders, based on CFSMP plans already in place, with strategic goals, boundaries, responsibilities, benefits and management/monitoring mechanisms defined.
Community liaison specialist	1,500	82	<i>In support of the gazettement of at least 20,000 ha critical corridor forest under Output 2.2.2:</i> To support the ground truthing of the suitability of areas for gazettement and facilitate dialogue with stakeholders to secure agreement and support for the plans; <i>In support of the establishment of ecotourism and handicrafts projects under Output 2.3.1:</i> To provide support to the international consultant in establishment of CBOs and capacity building of CBO members with regards to community liaison and discussion facilitation, ensuring that community needs are thoroughly considered and cultural sensitivity is ensured; also to support the establishment of market linkages and organisation of indigenous art awareness events through community liaison and ensuring cultural sensitivity; <i>In support of strengthening human-wildlife conflict mitigation measures under Output 2.3.2:</i> To provide support to the international consultant with community awareness raising sessions and close liaison with communities during implementation of Tiger Challenge competition
<b>International / Regional and global contracting</b>			
Chief Technical Advisor	3,000	86.6	<i>In support of all project activities:</i> To provide technical guidance and advice for all project activities where possible, as per the ToR
Sustainable landscape management consultant	3,000	21	<i>In support of strengthened state level capacity for CFSMP implementation and landscape management under Output 2.1.1:</i> To provide support in the establishment of appropriately-staffed state CFS executive units through guidance in appropriate structure and necessary skills set of unit as well as emplacing appropriate communication mechanisms for between departments etc.; also to increase knowledge and capacity for sustainable land use planning, decision-making, monitoring and communication through trainings in legal and political framework, general procedures for sustainable landscape management planning (including INRM tools, participatory

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			processes involved etc.)
CBO specialist	3,000	42	<i>In support of the piloting of ecotourism and handicrafts projects under Output 2.3.1:</i> To provide technical guidance in the establishment of CBOs for ecotourism and handicrafts in terms of management structure and registration process; to build capacity within CBOs through facilitating training in conservation issues and sustainable natural resource use (with wildlife and forestry officers and CFS units), branding and value-addition; also to establish market linkages through involvement of museums and tourism companies, raising awareness of indigenous art and crafts; also to strengthen supply chain for ecotourism and handicrafts products
Human-wildlife conflict specialist	3,000	22	<i>In support of strengthening human-wildlife conflict mitigation measures under Output 2.3.2:</i> To provide technical input for best practice in HWC rapid response and communication mechanisms and to support the local consultant in community awareness raising sessions for correct procedures to take in HWC incidents; also to assist with the implementation of the Tiger Challenge competition scheme through facilitation and providing guidance on appropriateness of community ideas based on successful practices elsewhere
<b>Contractual services</b>			
Specialist landscape management institution	n/a: discrete contract		<i>In support of strengthened capacity for state level CFSMP implementation and sustainable landscape management in the three landscapes under Output 2.1.1:</i> To support the allocation and resourcing of staff to a state CFS executive unit and to fill capacity gaps in land use laws, management and decision-making as well as general compliance monitoring, communication and coordination mechanisms; <i>In support of the development of site specific management plans for each landscape under Output 2.1.2:</i> To support the appropriate selection and resourcing of a land use management planning committee, setting in place institutional support mechanisms and providing guidance on land use planning processes and plan framework development
Internationally accredited biodiversity and ecosystem monitoring and management institution	n/a: discrete contract		<i>In support of strengthened capacity for state level CFSMP implementation and sustainable landscape management in the three landscapes under Output 2.1.1:</i> To support local biodiversity consultants in strengthening capacity for biodiversity and habitat data collection and analysis of data as appropriate to determine ecosystem health and to input data into the monitoring system (under Output 1.1.1); also to provide training of state CFS executive unit in utilisation of tools developed under Component 1,

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			for incorporation into land use planning; to involve presentations and practical exercises, according to the preferred approach of the institution; <i>In support of the integration of biodiversity, ecosystem service and carbon stocks monitoring protocols in landscape management under Output 2.1.3:</i> To analyse data collected by wildlife and forestry officers with land use data in order to assess environmental impacts of the project over time
Communications and marketing institution	n/a: discrete contract		<i>In support of strengthened capacity for state level CFSMP implementation and sustainable landscape management in the three landscapes under Output 2.1.1:</i> To support the development and implementation of a communications and awareness strategy for all major stakeholders regarding CFS conservation as well as an outreach strategy for indigenous and non indigenous communities, to possibly include the design and printing of materials, social networking and production of documentaries
Biodiversity Intactness Index specialist institution	n/a: discrete contract		<i>In support of monitoring the biodiversity of the CFS using the BII, under Output 2.1.3:</i> To provide technical advice in the gathering and collation of BII relevant data and to recalculate the BII annually for each landscape
GIS specialist institution	n/a: discrete contract		<i>In support of the rehabilitation of 4,000 ha semi-degraded forest habitat under Output 2.2.1:</i> To assist in the determination of most appropriate forest areas for rehabilitation through analysis of GIS data according to level of degradation, carbon storage and information provided by the biodiversity specialists; also to measure impacts of rehabilitation activities on carbon stocks through GIS; <i>In support of the gazettement of 20,000 ha critical corridor forest under Output 2.2.2:</i> To assist in the determination of most appropriate forest areas for gazettement through analysis of GIS data according to forest patch size and distribution (therefore importance/effectiveness of increased connectivity), and information provided by the biodiversity specialists; <i>In support of the construction of wildlife crossings for infrastructural barriers in critical ecological corridors, under Output 2.2.3:</i> To assist with determination of most appropriate area for wildlife crossings through GIS analysis of biodiversity, infrastructure and social data
Biodiversity-specialised organisations	n/a: discrete contract		<i>In support of the rehabilitation of 4,000 ha semi-degraded forest habitat under Output 2.2.1:</i> To assist in the determination of most appropriate forest areas for rehabilitation and gazettement through analysis of biodiversity data in terms of species population sizes, number of species and

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			<p>importance (threatened status or importance in ecosystem) of species supported by rehabilitation; and to support ground-truthing and finalisation;  <i>In support of the gazettement of 20,000 ha critical corridor forest under Output 2.2.2:</i>            To assist in the determination of most appropriate corridor areas for gazettement through analysis of biodiversity data in terms of importance of habitat type, and species population sizes, number of species and importance (threatened status or importance in ecosystem) of species supported by connectivity; and to support ground-truthing and finalisation;  <i>In support of the construction of wildlife crossings for infrastructural barriers in critical ecological corridors, under Output 2.2.3:</i>            To conduct wildlife tracking surveys alongside major roads in key wildlife areas to determine species presence and movement patterns and determine most appropriate areas for wildlife crossings in terms of suitability (with consideration for topography, social factors, etc.) and importance for wildlife</p>
Community livelihoods and development specialist organisation	n/a: discrete contract		<p><i>In support of the establishment of ecotourism and handicrafts CBOs under Output 2.3.1:</i>            To provide expert advice on appropriate establishment and operationalisation processes for each CBO, based on other experiences, and to guide capacity building for products development, branding and marketing as well as wildlife guiding-related activities; also to support the strengthening of market linkages and advertising of indigenous art</p>
Human-wildlife conflict specialist organisation	n/a: discrete contract		<p><i>In support of the strengthening of human-wildlife conflict mitigation measures under Output 2.3.2:</i>            To support and provide expert technical advice for the reviewing of elephant translocation plans and for the development of potential mitigation measures, also assisting in raising awareness of such measures</p>
<b>Professional services</b>			
Legal advisor	n/a: discrete contract		<p><i>In support of the gazettement of 20,000 ha critical corridor forest under Output 2.2.2:</i> To provide advice with gazettement of protected area with regards to current land use obligations</p>
<b>Component 3</b>			
<b>Local / National contracting</b>			
Consultant for environmental planning and coordination	1,500	32	<p><i>In support of the development of sustainable financing mechanisms under Outputs 3.1.1-3.1.3:</i>            To support the international consultant in establishing potential conservation funding schemes through facilitating dialogue with potential participants and coordinating activities and negotiations;  <i>In support of the transfer of conservation funds to the federal Conservation Trust Fund under Output 3.2.1:</i>            To support communications between the national</p>

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			CFS steering committee and the participants of the conservation funding schemes
Financial planning and marketing/communications consultant	1,500	14	<i>In support of the development of sustainable financing plans at federal and state level and corresponding marketing/communications plans under Output 3.3.1:</i> To support the international consultant in providing technical guidance for sustainable financing plan development and marketing/communication of these schemes; facilitating and encouraging stakeholder input in the participatory process
<b><i>International / Regional and global contracting</i></b>			
Chief Technical Advisor	3,000	65.2	<i>In support of all project activities:</i> To provide technical guidance and advice for all project activities where possible, as per the ToR
PES specialist	3,000	29	<i>In support of the development of a PES scheme under Output 3.1.1:</i> To conduct market research for potential PES schemes and to develop and implement PES scheme, from securing agreements between the buyer and seller, facilitating and providing technical guidance for revenue transfers and establishing and implementing monitoring mechanisms; also to research potential for transboundary schemes with Singapore through analysis of economic value of the watershed for Singapore and communications with Singapore governments and hydropower companies
Specialist in biodiversity/carbon offset schemes	3,000	21	<i>In support of the development of corporate biodiversity/carbon offset schemes under Output 3.1.2:</i> To conduct market research and secure agreements with environmentally impacting companies for participation in schemes, facilitating the process; also to assist in development of monitoring protocols to track and report on impacts
Consultant in voluntary conservation levy schemes	3,000	14	<i>In support of the establishment of voluntary conservation levies at state level under Output 3.1.3:</i> This will be a sub-contracted external organisation experienced in such schemes, to provide technical guidance and facilitation assistance to establish and implement public sector-based voluntary conservation levies targeting tourists and road users; also to research and develop schemes for specialised conservation licence plates
Specialist in government-based financial management of conservation	3,000	45	<i>In support of the incorporation of conservation funding into sectoral budgets under Output 3.1.4:</i> To raise awareness among financial and sectoral line agencies regarding economic values of the CFS and to secure agreements for re-allocation of budgets and fiscal transfers for conservation; <i>In support of the management of the CFS fund within the federal Conservation Trust Fund under Output 3.2.1:</i> To assist with building capacity for conservation

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			fund management in terms of efficiency in communications between providers and recipients of the revenue and fund and transfer monitoring and reporting; also to assist with development of operational manual
Specialist in sustainable financial management	3,000	20	<i>In support of the development of sustainable financing plans at federal and state level under Output 3.1.1:</i> To provide technical guidance for incorporation of financing schemes into sustainable landscape management plans and to support the training of CFS committees and other relevant departments in financial planning and marketing/communications of financing schemes
<b>Contractual services</b>			
Independent auditing advisory services	n/a: discrete contract		<i>In support of the development of a PES scheme under Output 3.1.1:</i> To support the international consultant in the development of independent institutional mechanisms for verifying, monitoring and reporting on PES
Funds management advisory services	n/a: discrete contract		<i>In support of the management of the CFS fund within the federal Conservation Trust Fund under Output 3.2.1:</i> To support the international consultant in assessing the institutional and systemic capacity of the federal Conservation Trust Fund and to fill capacity gaps; to consequently produce and operational manual detailing, for example, the institutional and legal framework, mission, management arrangement and procedures in financial management, procurement, disbursement and monitoring
Marketing and communications specialists	n/a: discrete contract		<i>In support of the development of sustainable financing plans at federal and state level under Output 3.1.1:</i> To produce and implement a comprehensive marketing and communications plan for both the federal CFSMP and each of the state level focal landscape plans, for gaining support from citizens across Malaysia for the sustainable funding for CFS conservation
Sustainable conservation financing specialists	n/a: discrete contract		<i>In support of the development of sustainable financing plans at federal and state level under Output 3.1.1:</i> To provide support for strengthening the institutional capacity of the federal CFS steering committee, EPU members of state CFS units and the LMPCs for planning and implementing sustainable financing mechanisms
<b>Professional services</b>			
Legal firm	n/a: discrete contract		<i>In support of the development of a PES scheme under Output 3.1.1:</i> To legalise contract between PES scheme

Consultant	\$/ Person Week	Person Week	Tasks and Inputs
			<p>hydropower company and state forestry department, including payment rates;</p> <p>To legalise contract for state government to allow forestry department to retain PES revenues;</p> <p><i>In support of the development of corporate biodiversity/carbon offset schemes under Output 3.1.2:</i></p> <p>To legalise agreements with environmentally impacting companies with regards to biodiversity and carbon offset payments;</p> <p><i>In support of the incorporation of conservation funding into sectoral budgets under Output 3.1.4:</i></p> <p>To assist with negotiations and to legalise agreement from federal and state finance offices to revise federal and state Lists to allow introduction of budgetary and fiscal transfers; to assist with development of formal mechanisms for budgetary and funding transfers;</p> <p><i>In support of the establishment of the CFS fund within the federal Conservation Trust Fund under Output 3.2.1:</i></p> <p>To provide support with establishing legal framework for CFS conservation fund, according to current framework of the Conservation Trust Fund</p>



### PART III: Stakeholder Involvement Plan

The key stakeholders in Peninsular Malaysia’s forestry, biodiversity and land-management programmes were identified and their mandates and roles were analysed. Table 15 assesses stakeholders in terms of their *influence* (power over outcomes) and *impact* effects (how affected they will be by the project outcomes). For example, ‘high influence, low impact’ stakeholders will have a large degree of influence upon the project but will not be significantly impacted by its outcomes.

**Table 16. Stakeholder Influence on the Project and Potential Project Impacts**

	Low influence	High influence
High impact	<ul style="list-style-type: none"> <li>National NGOs (e.g. MNS, WWF-Malaysia, WCS, MYCAT)</li> <li>National Social NGOs (e.g. POASM, COAC, JOAS, JOAKSM)</li> <li>Local Community Organisations (JKKK)</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Natural Resources &amp; Environment</li> <li>Ministry of Plantation Industries &amp; Commodities</li> <li>Forestry Department Peninsular Malaysia</li> <li>Department of Wildlife and National Parks</li> <li>State Government (Executive Council)</li> <li>Land Owners &amp; Licence/Concession Holders</li> <li>Local Authorities (District Councils)</li> </ul>
Low impact	<ul style="list-style-type: none"> <li>International NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Housing &amp; Local Government</li> <li>National Land Council</li> <li>National Physical Planning Council</li> <li>Media</li> <li>Donors</li> </ul>

The PPG phase included consultations with the Project’s key stakeholders at the national and local levels. Field trips were carried out to Peninsular Malaysia, where all project sites were visited. Local authorities and community organisations were presented to the project proposal. Two workshops at the national level were also held and the Project was thoroughly discussed. In addition, several bilateral meetings were held, mostly with donors and key stakeholders who could not attend the workshops. Generally, project design was a highly participatory process, in line with UNDP’s and GEF’s requirements.

The stakeholders to have primary involvement in the Project are the federal government’s Ministry of Natural Resources and Environment, specifically the Forestry Department Peninsular Malaysia and the Department of Wildlife and National Parks. The governments of Perak, Johor and Pahang States will play an important role in the Project, being the primary institutions for the enabling and implementation of the Project, including the sustainable land management plans, the financing mechanisms and the anti-poaching activities.

A full list of stakeholders of the CFS forest landscapes, and their relevant roles and responsibilities, can be found in Annex V. Below is a list of the Project’s key stakeholders.



**Table 17. Key Stakeholders of the Project<sup>109</sup>**

<b>Stakeholder</b>	<b>Current Roles and Responsibilities</b>	<b>Interests in the Project</b>	<b>Potential conflict and Mitigation</b>
<b>The Ministry of Natural Resources and Environment: the National Executing Agency</b>	Ultimate responsibility for ensuring successful completion of the Project. Within this ministry, members of FDPM, DWNP, the Legal Division as well as other agencies have formed a national CFS steering committee; their significant involvement in capacity building will be required to ensure effective oversight, coordination and compliance monitoring to the CFSMP	National executing agency Major beneficiary of capacity building Benefit to key line agencies: FDPM, DWNP	<i>As the National Executing Agency, there should be no potential conflict</i>
<b>National CFS Steering Committee</b>	Responsible for the oversight of the CFSMP. Will be heavily involved in capacity strengthening activities for CFS management such as trainings and formulation of action plan	Provide oversight on implementation of numerous project activities	Members of the committee seek to oversee and ensure compliance to the CFSMP; however, significant efforts are required to increase their capacity for oversight, potentially including making changes to previous plans, which could raise objections
<b>Forestry Department Peninsular Malaysia</b>	National Implementing Agency: responsible for oversight, overall coordination and providing technical advice for CFS management in the three focal landscapes and project implementation with regards to forest management	<i>Capacity building of existing CFS unit as well as of state-level and district level offices</i>	<i>As the National Implementing Agency, there should be no potential conflict</i>
<b>Department of Wildlife and National Parks</b>	Principle Implementing Partner: will support FDPM in oversight and coordination of CFS management and project implementation, particularly concerned with wildlife management, protected area gazettement, the implementation of wildlife crime law enforcement measures, human-wildlife conflict prevention, ecotourism in Taman Negara and sustainable handicrafts activities.	<i>Capacity building of enforcement and CFS coordination ability</i>	<i>As the Principle Implementing Partner, there should be no potential conflict</i>
<b>NRE Legal Division</b>	Will continue to manage prosecutions under the NRE, in coordination with FDPM and DWNP for improved prosecution procedures	Capacity building and enhanced coordination with the enforcement agencies	May not support being given training in wildlife crime prosecution/conviction procedures  Mitigation: PSC to be chaired by senior NRE officer in a position of influence
<b>Economic Planning Unit</b>	Responsible for decision-making regarding budgetary allocations for CFS management; will also be involved in formulation of sustainable financing plans	Enhanced capacity with regards to implementation of PES schemes in Malaysia	Seeks to encourage and plan for economic development of Malaysia; however, will need to adapt current budgetary plans in order to increase allocation of funds towards CFS conservation
<b>State Executive Councils</b>	Ultimately responsible for decision-making in all land matters in the focal landscapes	Preservation of biodiversity in the respective states  Enhanced PES revenue capacity  Ecotourism & handicraft schemes of benefit to the	May not support land-use decision-making informed by biodiversity, ecosystem and carbon monitoring tools and valuation tools  Mitigation: representatives of the offices of the key State Executive Council members will be briefed on the benefits of adopting the said approach

<sup>109</sup> See Annex IV. List of stakeholders and roles and responsibilities in the CFS and Record of Stakeholder Consultation for a wider stakeholder list and their roles in CFS planning and management. Exact roles of these stakeholders in project implementation under the three components will be determined through further consultations during the implementation phase.

Stakeholder	Current Roles and Responsibilities	Interests in the Project	Potential conflict and Mitigation
		state	
<b>State Forestry Departments</b>	Responsible for forestry policy implementation in the focal landscapes; will be involved in forest crime monitoring and law enforcement, and biodiversity and ecosystem monitoring activities	Capacity building related to implementation of CFS	May not support adaptations to current forest management methods Mitigation: project executants will include senior forestry department staff in each focal state
<b>State Wildlife Departments</b>	Responsible for wildlife policy implementation in the focal landscapes; will be involved in wildlife crime monitoring and law enforcement, and biodiversity monitoring activities	Capacity building related to implementation of CFS, particularly on improved wildlife crime enforcement	May not support adaptations to current wildlife crime management methods Mitigation: project executants will include senior DWNP staff in each focal state
<b>State Economic Planning Units</b>	Will play a key part in formulating landscape management plans and sustainable financing plans	Capacity building related to implementation of CFS Master Plan (valuation of ecosystem conservation, PES, etc.)	May not support such a focus on conserving natural resources rather than economic development Mitigation: project will engage with State Executive Council members and highlight the benefits of conservation
<b>Department of Town and Country Planning</b>	Responsible for supporting development of local landscape plans within each state through technical advice	Implementation of the National Physical Plan (i.e. CFS Master Plan)	Some local plans are already in place as part of the CFSMP; may need adapting according to sustainable landscape management priorities
<b>Forest Research Institute of Malaysia</b>	Responsible for CFS biodiversity and ecosystem services monitoring activities and for providing support for rationalisation of biodiversity clearing house mechanism	Capacity building (training on use of BII)	May not appreciate criticisms of current status of biodiversity monitoring and of clearing house mechanism Mitigation: collaborative approach to project implementation (involving FRIM representatives)
<b>Department of Irrigation and Drainage</b>	Maintenance and monitoring of inland water bodies	Will be involved in development of watershed-based PES schemes as well as participate in formulation of sustainable landscape management plans	Seeks to maintain integrity of water courses; however, may disagree with certain activities planned as part of sustainable landscape management Mitigation: involve in project from an early stage
<b>Department of Environment</b>	Responsible for approving EIAs and monitoring implementation of mitigating measures	Will need to adapt EIA completion procedure so that development projects are not approved before EIA review. Will provide advice for formulating guidelines for EIA and AMMO integration in landscape management planning	Seeks to control of environmental impacts of development projects; however, may object to request to adapt EIA procedure Mitigation: (1) involve in project from an early stage; (2) involve senior NRE officer as chair of PSC
<b>Perak and Johor State Parks Corporations</b>	Key stakeholders in the management of PAs in Belum-Temengor landscape and Endau-Rompin landscape	Will be involved in activities in law enforcement against wildlife and forestry crime and in providing advice for gazettment of 20,000 ha	Seek to manage and protect habitats and wildlife within state parks; however, focus will be primarily given to areas between protected areas Mitigation: project will enhance collaboration with FDPM and DWNP
<b>Department of Orang Asli Development (JAKOA)</b>	Key role in coordinating development activities related to the Orang Asli	Providing guidance on socio-economic development considerations as well as traditional values	Seeks to further the socio-economic development of the Orang Asli; may object to advice given regarding the unsustainability of some current income-generating activities Mitigation: will be involved in the project from an early stage

Stakeholder	Current Roles and Responsibilities	Interests in the Project	Potential conflict and Mitigation
<b>MY-WEN</b>	MY-WEN, which is coordinated by the CITES division of the NRE, will be a strong focus for law enforcement strengthening; with members selected for covert monitoring network and trained in data management systems;	monitoring and reporting procedures improved	MY-WEN's aim is to improve effectiveness of wildlife crime law enforcement; however, conflict may arise through the reforming of several of their regular procedures and management methods  Mitigation: project will communicate the benefits of reformed procedures
<b>INTERPOL</b>	International cooperation related to law enforcement	INTERPOL will be key in assisting with training of law enforcement officers as part of the covert monitoring network	May not want to allocate time and/or resources towards training sessions  Mitigation: other training providers can be sourced
<b>Malaysian Conservation Alliance for Tigers</b>	MYCAT (including MNS, WWF-Malaysia, WCS and TRAFFIC South-East Asia) coordinates conservation efforts related to tigers in Peninsular Malaysia	Will be strongly involved in activities on the ground, including wildlife crime law enforcement, human-wildlife conflict prevention and monitoring activities, especially in the Sungai Yu landscape	Will be strongly supported through the project; however, some activities or mechanisms may need adapting which could raise objections  Mitigation: full consultation from early stage of the project
<b>World Wildlife Fund (WWF) - Malaysia</b>	WWF Malaysia have an active programme advocating the strengthening of the protected area network in the peninsula. Under the National Tiger Conservation and Action Plan (NTCAP), WWF has been conducting studies to determine the status of tigers in Temengor since 2007. It has particularly with regards to the northern forest landscape (Perak).	Important stakeholder/collaborator and possible co-implementer of landscape- and species-related actions on the ground, especially in the Belum-Temengor forest landscape	Government agencies may be unwilling to work with NGOs due to issues of confidentiality of information or differences in institutional culture.  Mitigation: project will enhance avenues for cooperation between government and civil society to increase trust and develop public-private partnerships
<b>Malaysia Nature Society (MNS)</b>	MNS have active branches throughout the peninsula, including Perak, Pahang and Johor. They currently have a particular focus on Belum-Temengor under the NTCAP.	Important stakeholder/collaborator and possible co-implementer of landscape level actions on the ground, especially in the Belum-Temengor forest landscape	Government agencies may be unwilling to work with NGOs due to issues of confidentiality of information or differences in institutional culture.  Mitigation: project will enhance avenues for cooperation between government and civil society to increase trust and develop public-private partnerships
<b>Wildlife Conservation Society (WCS)</b>	WCS work in the peninsula focuses on the Endau-Rompin landscape where they assist the authorities on technical and scientific matters. Their work involves training of rangers and local community game guards, monitoring and enforcement activities for tiger conservation under NTCAP.	Important stakeholder/collaborator and possible co-implementer of landscape level actions on the ground, especially in the Endau Rompin forest landscape	Government agencies may be unwilling to work with NGOs due to issues of confidentiality of information or differences in institutional culture.  Mitigation: project will enhance avenues for cooperation between government and civil society to increase trust and develop public-private partnerships
<b>TRAFFIC South East Asia</b>	TRAFFIC is involved in wildlife trade research throughout the peninsula, with a particular focus on Belum-Temengor	Important stakeholder/collaborator and possible co-implementer of wildlife enforcement related activities	Government agencies may be unwilling to work with NGOs due to issues of confidentiality of information or differences in institutional culture.  Mitigation: project will enhance avenues for cooperation between government and civil society to increase trust and develop public-private partnerships.
<b>Academic Institutions</b>	There are several local and international universities involved in research related to forest management, local communities and biodiversity conservation in the peninsula	Conducting management oriented scientific research and surveys. Supporting science based management is a key part of wildlife enforcement capacity	Universities programmes may not be geared towards the needs of the relevant implementing agencies.  Mitigation: agencies and universities will be brought together from the start of the project to allow greater communication of needs and

Stakeholder	Current Roles and Responsibilities	Interests in the Project	Potential conflict and Mitigation
		building of the project	programmes of each counterpart
<b>Local communities</b>	Key users and beneficiaries of the forest biodiversity. They are the affected parties of human wildlife conflict, and play a major role in local habitat conservation and controlling of poaching.	Important co-implementers of landscape level activities including development of landscape management plans, designing and implementation of socio-economic measures to establish ecological connectivity, as well as participatory biodiversity and ecosystem service monitoring and wildlife protection activities.	Some local communities may not agree with the CFS proposals. Mitigation: full consultation and involvement of relevant local communities during the inception phase.
<b>The Smithsonian Institution</b>	Has collaborated with DWNP and provided capacity strengthening on diverse conservation and science programmes, as well as facilitated workshops.	Will be strongly involved in the application of the National Biodiversity Clearing House Mechanism in landscape management planning through inclusion of aspects such as ecosystem valuation and carbon stocks	May be reluctant to build upon current clearing house mechanism rather than construct entirely new mechanism Mitigation: Full consultation and agreement of activities before start of implementation

## STAKEHOLDER ENGAGEMENT

The project will provide the following opportunities for long-term participation of all stakeholders, with a special emphasis on the active participation of local communities:

**Decision-making:** Through the landscape mechanisms and stakeholder groups. The establishment of these structures will follow a participatory and transparent process involving the confirmation of all stakeholders; conducting one-to-one consultations with all stakeholders; development of Terms of Reference (ToR) and ground-rules; inception meeting to agree on the constitution, ToR and ground-rules for the mechanism and its active land use planning, ecological monitoring and community development units.

**Capacity building:** At systemic, institutional and individual level – is one of the key strategic interventions of the project and will target all stakeholders that have the potential to be involved in brokering, implementing and/or monitoring management agreements related to activities in and around the reserves. The project will target especially organizations operating at the community level to enable them to actively participate in developing and implementing management agreements.

**Communication:** Will include the participatory development of an integrated communication strategy.

The communication strategy will be based on the following key principles:

- providing information to all stakeholders;
- promoting dialogue between all stakeholders;
- promoting access to information.

The project will be launched by a well-publicized multi-stakeholder inception workshop. This workshop will provide an opportunity to provide all stakeholders with updated information on the project as well as a basis for further consultation during the project's implementation, and will refine and confirm the work plan.

Based on the extensive list of stakeholders (mostly consulted) listed in **Annex IV**, a more specific

stakeholder involvement strategy and plan can be developed at that inception stage.

## **GOAL AND OBJECTIVES FOR STAKEHOLDER INVOLVEMENT**

The social sustainability of activities and outputs is addressed through the execution of a stakeholder capacity analysis and the elaboration of a detailed collaborative management involvement strategy and plan which identifies stakeholders' interests, desired levels of involvement, capacities for participation (at different levels) and potential conflicts and, responsive mitigation measures.

## **PRINCIPLES OF STAKEHOLDER PARTICIPATION**

Based on the stakeholder analysis carried out during the PPG phase it is clear that different levels of capacity development activities will be required at the landscape level on the level of the individual PAs. The two landscapes with which the project will work are quite different in nature, composition of members and technical needs on the ground. It is therefore recommended at the generic proposal for capacity development activities will be refined and regularly updated at the level of each landscape.

Capacity needs fall overall into four main categories:

- Awareness raising and knowledge development about a landscape approach:
- Knowledge and skills for coordinating PAs within landscapes
- Technical knowledge and skills
- Financial support and investments

## **ENGAGEMENT PLAN FOR EACH PROJECT OUTCOME**

The project will aim to bring additional stakeholders on board in the implementation of the CFS Master Plan. The existing national and state-level committees will be expanded to include representatives from NGOs and academic institutions at inception. The project will also look at setting up local-level committees, which can include local community reps as well as the other stakeholders. The establishment. The engagement of NGOs, academic institutions and the private sector will be determined on a case-by case basis at inception and through the use of contractual services. As this is likely to change over time in a complex project with three distinct components that will utilize a wider range of skillsets and expertise, the level of stakeholder involvement has not been fully determined in detail at project design stage. However, an output-by-output level indicative outline of the stakeholders expected to be involved and an indicative budget has been provided (pp120-129 of the Project Document) . The final agreement of which stakeholders will be involved will come about at either inception, annual work planning or on a case by case basis in the case of procurement of contractual services for specific outputs and activities. However, the following stakeholder are indicated as likely to be involved in each component as follows:

### ***Component 1: Planning, compliance monitoring and enforcement framework for integrated forest landscape management***

#### ***Outcome 1.1: Strengthened institutional capacity of the federal government to oversee implementation of the CFS Master Plan, ensuring compliance by sub-national actors, and monitoring impacts upon biodiversity, ecosystems and carbon stocks***

This outcome will involve the key biodiversity experts in Peninsular Malaysia, including the main agencies (FDPM, FRIM, DWNP) as well as NGOs (e.g. WWF, MNS and MYCAT). Academic institutions, specialists and international consultants will also be contracted by the project to assist in achieving this outcome.

#### ***Outcome 1.2: Enhanced wildlife crime law enforcement and wildlife monitoring capacity emplaced at the national and state level and in target forest landscapes to ensure reduction of wildlife crime***

This outcome will involve the key enforcement agencies (FDPM and DWNP) as well as the Police and Customs. International consultants, INTERPOL, local communities, prosecutors, magistrates,

judiciary officers and other specialist agencies will also be involved in the capacity building activities under this outcome.

***Component 2: Sustainable forest landscape management of three priority forest landscapes within the CFS***

***Outcome 2.1: Biodiversity and ecosystem service provision is mainstreamed in forest landscape management in the three focal landscapes via sustainable forest landscape management plans, resulting in improved status of biodiversity and ecosystem services***

This outcome will focus on involving the state-level stakeholders including the state executive council members, CFS technical committee, the relevant state agencies (forestry, wildlife department and state economic planning units). Federal agencies such as FRIM, FDP, biodiversity experts, international consultants and contracted specialist institutions will also be involved in facilitating the training. JAKOA, local communities and social NGOs will also be involved in the project through a community-based monitoring network unit. The DOE and local landowners/developers will also be involved in the implementation of the AMMO hierarchy.

***Outcome 2.2:***

***Corridor establishment increases connectivity of critical ecological linkages identified in the CFSMP and supports carbon emission avoidance and sequestration under SFM practices***

This outcome will involve all the key government stakeholders at both federal and state level, focusing primarily on the involvement of JPSM, FRIM, State Parks Corporations, DWNP and other specialists. There will also be close coordination with transport and infrastructure authorities with regards to the building of wildlife crossings.

***Outcome 2.3: The socio-economic status of local communities improved and support for conservation increased through the generation of sustainable livelihoods based on wildlife, and the reduction of human-wildlife conflict***

This outcome will involve the key stakeholders related to rural communities (including JAKOA, social NGOs and representatives of the communities themselves). There is also scope for involving the Ministry of Tourism as well as eco-tourism companies. DWNP and Environmental NGOs will also be involved in the discussions related to human-wildlife conflict. International and local consultants and community liaison officers will also be involved as and when necessary.

***Component 3: Diversification of financing sources for conservation***

***Outcome 3.1: The longterm biodiversity and ecosystem conservation of the CFS is enhanced through the diversification of funding sources for conservation***

This outcome will be achieved by the involvement of the relevant state authorities (e.g. forestry department, state planning units) as well as private sector companies (i.e. hydropower companies, tourism companies, hotels). There will also be involvement of federal level agencies such as the EPU, and the Ministry of Finance. International consultants will play a strong role in fulfilment of this outcome.

***Outcome 3.2: Funding allocations for biodiversity and ecosystem conservation in the CFS are secured and formalised***

This outcome will focus on the training of the national CFS steering committee (including all the key line agencies such as DWNP and JPSM). International consultants will play a strong role in fulfilment of this outcome.

***Outcome 3.3: Strategic planning processes are in place and being used to link financing to conservation management needs***

This outcome will also focus on the training of the national CFS steering committee (including all the key line agencies such as DWNP and JPSM) but will also include training of state-level economic planning units, LMPCS. International and local consultants will be employed in fulfilment of this outcome.



## Project Annexes

### Annex I. Protected Areas & Land Management Classes in Peninsular Malaysia

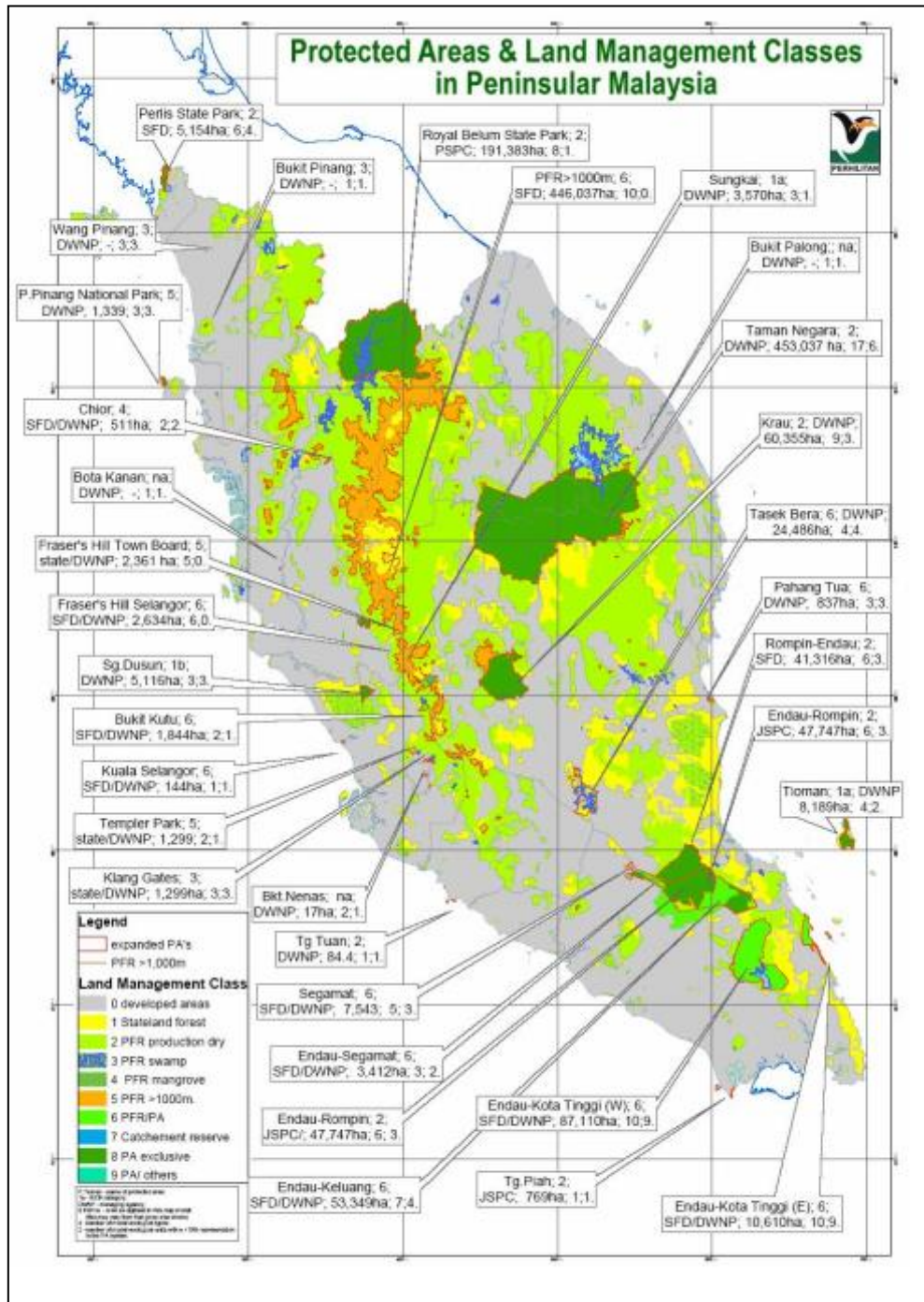


Figure 9. Protected Areas and Land Management Classes in Peninsular Malaysia



## **Annex II. Applicability of the Biodiversity Intactness Index for the Central Forest Spine, Malaysia.**

*Report by R. Blanchard and R.J. Scholes, 2013  
CSIR Natural Resources and the Environment*

### **1. Background and context of this report**

Malaysia intends to implement a system of interconnected protected areas and corridors, particularly along the mountainous forested spine of the Peninsula, in order to safeguard biodiversity in the face of land use changes and climate change. This is known as the ‘Central Forest Spine Project’. In order to implement it, Malaysia is in the process of applying for Global Environmental Facility funding. One of the conditions of a successful proposal is that an effective Monitoring and Evaluation system be in place, to ensure that the intervention has the desired outcome. This report briefly surveys the options for biodiversity outcomes monitoring, and makes a proposal that a biodiversity monitoring instrument known as the Biodiversity Intactness Index (BII) be used for this purpose.

### **2. Biodiversity indicator theory**

Biodiversity is generally defined as ‘the variety of living things’. This modern inclusive approach to biodiversity, which is adopted by bodies such as the UN Convention on Biological Diversity (UNCBD), means that the topic is inherently complex and multi-dimensional: it spans the range from genetic diversity within a species, through the range and abundances of species present, to the way they organise themselves into distinct ecosystems. This goes far beyond the ‘narrow’ view of biodiversity, which confines itself to asking ‘how many species occur in this place’? The broad view is more helpful in a development context, since it makes connections between biodiversity, the delivery of ecosystem services and human wellbeing possible. It also facilitates a discussion about biodiversity in the ‘lived landscape’; as opposed to confining it to supposedly ‘pristine’ protected areas. The disadvantage of the broad view is that it is impossible to capture all aspects of biodiversity in a single, simple indicator.

It would be sensible and efficient that the indicators adopted by the forest spine project be coherent with the national scale reporting obligations by Malaysia, as a signatory to the UNCBD. The UNCBD, in defining its ‘Aichi Targets’ for the year 2020, proposed twenty objectives. Each is proposed to have one or more indicators, but these are not yet fully defined. They broadly fit into a ‘Pressures-State-Response’ conceptual framework. In the context of the forest spine indicators, the pressures have largely been defined (they are habitat loss due to land use change, and potentially climate change during the 21<sup>st</sup> century), and the proposed response is the implementation of the interconnected system of protected areas and corridors. The key indicators are therefore those that relate to the current and future state of biodiversity within the target area.

The desirable attributes of a biodiversity state indicator are listed by Biggs et al (2007). They include

1. ‘Fit for purpose’ i.e. attuned to the policy intent for which the indicator is selected
2. Sensitive to the magnitude of change likely to be encountered, at a timescale relevant to policy decisions

3. Feasible and cost-effective to implement and sustain
4. Unambiguous, easily understood and communicate

The responsibility for environment, biodiversity and land-use management in Malaysia rests primarily at state government level. However, the forest spine covers several states, therefore requiring a federal government engagement as well. This imposes a further requirement on the indicator, that it be ‘scalable’ – in other words, applicable at a variety of scales, without losing its meaning and integrity as the analysis zooms from one scale to another.

For academic research purposes, biodiversity is measured in a range of ways, many based on information theory (Mugarran, 2004). For instance, the Shannon Index combines how many different types of entity exist with their proportional contribution to the whole. The disadvantages of this research-oriented approach for policy purposes are that it requires a comprehensive, up-front knowledge of the biota and its abundances, which is seldom available beyond small study areas; and the values it produces are not easily interpreted by non-specialists.

In the broadly-defined ‘policy and management’ sphere (including both government and non-government actors) a wide range of biodiversity indicators have been used. They can be broadly categorised as follows:

1. **Species richness based indicators.** The simplest, and most widely used of these is the count of species occurring within a defined area. It has strong drawbacks, the main ones being that it is insensitive to change at policy-relevant timescales; it is subject to our very imperfect knowledge of biodiversity (thus the number often goes up due to new discoveries, when intuition tells us it should be going down due to pressures on biodiversity; and is scale-dependent (the species count goes up as the area considered increases, but in a non-linear way).
2. **Abundance-based indicators.** These record the changes in the population size of a set of marker species. An example is the ‘Living Planet Index’ reported by WWF. The BII described below is largely in this category, though it includes elements of all the other categories. Abundance-based indicators are sensitive to change over both the short and long term. The drawback is that they are information-hungry, and therefore typically limited to a few species, and may thus be biased by the marker populations selected.
3. **Threat-based indicators.** These are based on an analysis of the risk of extinction, in several categories: e.g. ‘Vulnerable’, ‘Threatened’, and ‘Extinct’. The ‘Red List Index’ is maintained by the IUCN is an example. The advantage is that they focus on the rarest, most threatened species, which are often uppermost in the public mind. The disadvantage is the indicator is insensitive to changes in the ‘everyday biodiversity’ which is largely responsible for the functioning of ecosystems.
4. **Habitat extent-based indicators.** These typically record the loss of area or health of habitats or ecosystems. An example would be the fraction of remaining forest. The advantage is that they are relatively easy to implement, are reasonably sensitive and are an ‘umbrella’ indicator if it is assumed that if the habitat is intact, the species it supports are secure. The disadvantage is that it tends to focus only on certain high-profile ecosystems and treats them in a binary fashion (pristine vs. transformed) whereas the reality is more nuanced – there are degrees of loss, which are driven by land use rather than land cover.
5. **Response-based indicators.** An example is the fraction protected area. The advantage is that they speak directly to policy actions. The disadvantage is that they address ‘inputs’ rather than ‘outcomes’.

Scholes and Biggs (2005) proposed the Biodiversity Intactness Index (BII) as a way of building most of the above categories into a single, integrated index in a scientifically-rigorous way. It is conceptually very similar to the independently-derived 'Mean Species Abundance' index. BII combines spatially-explicit maps of species richness, with maps of ecosystem transformation (for which land cover is used as a proxy) and an impact factor which represents the effect of various land use types on the population abundances of a wide range of species within each ecosystem type. The advantages of BII are:

1. It is sensitive to policy-relevant change at the appropriate scales in time and space.
2. It is relatively easy to implement, using data which is usually available for other purposes and expert knowledge, and can be progressively improved over time as new information becomes available.
3. It is easy to communicate and understand, since it ranges from 100% (for perfectly intact biodiversity) to 0% (for complete loss).
4. It applies across the entire landscape, including agricultural landscapes, production forests and urban areas, as well as areas set aside for biodiversity protection.
5. It is broadly-based, covering the full range of well-known biodiversity.
6. It is scalable (values can be aggregated upward to national or global level, and disaggregated to the local level where biodiversity-impaction actions take place).
7. It can be projected forwards (Biggs et al 2008 ) and backwards in time (Biggs and Scholes 2007).
8. An uncertainty range can be calculated (Hui et al 2008), which is helpful to policymakers in deciding whether observed changes represent a real trend or just noise, and provide a metric to guide the progressive improvement of the measurements.

The main disadvantages of BII are

1. It depends on the accuracy of the underlying maps; particularly those of land cover and use (Rouget et al 2006)
2. It is not very sensitive to the rarest (and often thus most threatened) species, which are often the focus of popular interest (Faith et al 2008). For this reason we recommend using in conjunction with a threat-based metric.

### **3. BII methodology and its relevance to monitoring of CFS and Malaysia**

Peninsular Malaysia is characterised by high levels of biodiversity threatened by decreasing areas of natural forests and increased levels of fragmentation. The dominant vegetation cover consists of various forest ecosystems which are threatened by a wide variety of land uses, including production forestry, agriculture of several forms, human settlement and fragmentation by infrastructure. The forest habitats are home to a wide variety of plants and animals (Manokaran, 1992), many very sensitive to habitat loss or fragmentation. The need to monitor the loss of biodiversity and more importantly, the need to reduce the rate at which biodiversity is currently lost is one of the goals of the Convention of Biological Diversity (CBD, 2003). To address the state of biodiversity over time, an appropriate measure of biodiversity is needed. In this report the Biodiversity Intactness Index (BII) is presented as a single integrated measure of biodiversity to illustrate the current state of biodiversity in the Central Forest Spine complex of Peninsular Malaysia. We suggest that it be used in conjunction with one or more indicators drawn from the 'Threat-based' category, such as the population status and trend of key species of interest, such as the tiger.

The BII is an indicator that measures change in a specified set of organisms across a geographic area relative to a selected reference state (Scholes and Biggs, 2005). The index is capable of incorporating a wide range known terrestrial species of plants and vertebrates, provided sufficient general knowledge is available for the calculation. The phrase ‘well-known’ biodiversity is used to capture this concept: the majority of species have been scientifically described, and there is a body of people (who need not be biodiversity professionals) who are knowledgeable about their broad biology. For a country like Malaysia, with a long history of biodiversity interest, and many biodiversity-related institutions in the government and non-government sector, this almost certainly includes all higher plants, birds, mammals, reptiles and amphibia. The BII was designed to meet the requirement set out within the CBD to provide an integrated measure of biodiversity. To date the BII has been used to illustrate the state of biodiversity in Southern Africa during the Millennium Ecosystem Assessment (Scholes and Biggs, 2004; Biggs, Reyers and Scholes, 2006) and has in various forms (e.g. Mean Species Abundance) been adapted and adopted in Norway, British Columbia, and for global analyses.

The methodology for calculating the BII is well documented (Scholes and Biggs, 2005) with a users manual available to assist calculation of the BII (Kirton and Scholes, 2010). Here we present a brief outline of the formulae and the data requirements.

The BII is calculated by:

$$BII = \frac{\sum_i \sum_j \sum_k R_{ij} A_{jk} I_{ijk}}{\sum_i \sum_j \sum_k R_{ij} A_{jk}}$$

where

$$\begin{aligned} R_{ij} &= \text{Richness of taxon } i \text{ in ecosystem } j \\ A_{jk} &= \text{Area of land use } k \text{ in ecosystem } j \\ I_{ijk} &= \frac{(\text{Size of population of taxon } i \text{ under use } k \text{ in ecosystem } j)}{\text{Size of population at the reference time}} \end{aligned}$$

(Scholes & Biggs 2005).

To calculate the BII requires knowledge on three aspects:

- a) the area of each land use within each ecosystem or vegetation type,
- b) relative impact factor of land use type on biodiversity,
- c) species richness per ecosystem.

The study will be conducted within the boundary of Central Forest Spine which covers an area of approximately 5,100,000 ha (>38% of the total terrestrial area and >85% of forest areas in Peninsular Malaysia). Almost 80% of the CFS is classed as Permanent Reserved Forest (PRF), which includes the different land use and forest types which contribute to the economic activity of the region. The ecosystems and land use options are discussed below.

#### **4. Value added of BII in Malaysia and integration into the national biodiversity monitoring framework**

The BII was designed to be a scientifically-sound integrated measure of biodiversity. The BII is capable of addressing key threats to biodiversity and is sensitive to habitat loss and land degradation.

The Central Forest Spine is characterised by dynamic land use practices, that incorporate, Protected forests, Primary forests, Production forests, Secondary forests and other land uses. A large portion of the area supports economic activities. These include the harvesting of timber from existing forests, as well the planting of additional species in cleared forest patches (e.g. rubber or palm oil). The ongoing need for the variety of forestry products produced is a key driver of habitat change and land transformation (Turner et al 2008). The CFS biodiversity corridor is dependent on the maintenance of corridors which facilitate the movement of animals throughout the forest.

The BII provides a measure of biodiversity change that is more sensitive and meaningful than merely accounting for percentage area loss, or simply recording species richness, or focussing on charismatic species, which are typically the alternatives offered. The indicator responds directly to the key issue, which is land use across the entire landscape, and its differential impacts on a wide range of biodiversity.

The concept of ‘species abundance’ on which BII is based has been identified by the Group on Earth Observation Biodiversity Observation Network as one the ‘Essential Biodiversity Variables’ (EBV, Pereira et al 2013). The other inputs to BII – such as ecosystem extent, number of species and land use – are also part of the EBV short list. The BII (or something closely related to it) may well be selected by UNCBD as an indicator for one or more of Aichi targets 5 to 10, and the BII input datasets will certainly be required, one way or another, in addressing many of the targets. The key datasets, such as land cover/use, are collected anyway in Malaysia, for other purposes. Therefore selecting BII for the CFS does not impose additional monitoring burdens, and does not create redundancy with other elements of a future Malaysian national biodiversity monitoring system.

## **5. Preliminary calculation of the BII for CFS**

The Central Forest Spine (CFS) was used as an example of how BII can be calculated using already-available data, and later refined. In order to determine vegetation type, Biome data was extracted from the WWF Eco-regions database (publically available online) and were aligned to FRIM’s vegetation unit identification. Three vegetation types were identified: *Dry inland forest*, *Mangrove Forest*, *Peat swamp Forest*. These vegetation types were used to summarise the land use within forest ecosystem of the CFS. Forestry categories were used to represent the main land use intensity categories, and were obtained from FRIM: *Protection*, *Primary*, *Production* and *Secondary* forest areas.

### **Data preparation**

#### **Land use and vegetation types**

The Forest information files received from FRIM included *Protection*, *Primary*, *Production*, and *Secondary* forest types. There was considerable overlap between the forestry layers resulting in more than one category being assigned to a grid cell. This resulted in 11 new land use classes (Table 1). This resulted in certain assumptions having to be made regarding the status of the forestry units and the coinciding impact factors. To account for this two land use options are shown (Table 1). The new category of *Production –Secondary* was assigned to either *Degraded* (Option 1) or *Cultivated* (Option 2). This approach also demonstrates the sensitivity of the method to the use of the correct impact factor. Impact factors were taken from the South African BII assessment (Biggs, Reyers and Scholes, 2006 ) and substituted here. In order to do this the forest land use categories were converted to predetermined land use classes: *Protected*, *Light use*, *Degraded*, *Cultivation*. Based on this

classification the appropriate impact factors were assigned to each forestry class. To determine the land use within each forestry sector, these two layers were intersected using GIS (see Table 2 and Table 6). All layers were clipped to the extent of the CFS as calculated by the combination of forest layers provided.

To further illustrate the flexibility of the BII, two options for ecosystems were chosen (Figure 1) from two different sample files:

1. WWF eco-region to determine the full extent of forest types outlined in the Hutan\_Simpan data file received from FRIM.
2. Floristic Zones in relation to elevation which delineates biodiversity features within dipterocarp forests.

### Impact Factors

For the purpose of this exercise Malaysian land use categories were matched, in terms of their impact factors, to correspond to the land use impact categories as used in the BII user Manual, derived for southern Africa (see Table 3 and Table 7). These are: *Protected, Light Use, Degraded, Cultivated* (see Table 1). This is the area where the greatest improvement in the implementation of BII in Malaysia could occur – the development of locally-specific impact factors. The best way to do this is by consulting taxon group experts individually, selecting three or more per target taxon. Each interview takes about 2 hours, which means that the whole exercise takes about 40 hours of contact time.

**Table 1: Summary of Forest Layers used and inferred land use characteristics with associated impact factors classes taken from South Africa literature. The uncertainty assigning of land use impact to forestry land use was accounted by providing two classification options: *Option 1* and *Option 2*.**

Forest Land Use	Total area (Mha)	Land use term <i>option 1</i>	Land use term <i>option 2</i>
Area excluded	7.021	N/A	N/A
Protection only	0.046	Protected	Protected
Production only	0.075	Cultivated	Cultivated
Secondary only	0.761	Degraded	Degraded
Primary only	0.696	Protected	Protected
Prod_Prot*	0.0001	Light use	Light use
Sec_Prot	0.796	Degraded	Degraded
Prim_Prot	0.416	Protected	Protected
Prod_Sec	2.452	Degraded**	Cultivated**
Prod_Prim	0.906	Light use	Light use
Prod_Prot_Sec	0.001	Degraded	Degraded
Prod_Prot_Prim	0.00045	Light use	Light use
<b>Total</b>	<b>13.169</b>		

\*abbreviations used: Prod = production, sec = secondary, prim=primary, Prot=Protection

\*\* difference classification of land use

### Species richness

Species richness data from Malaysian sources were not available during this demonstration phase of the BII, but do exist and need to be collated and made available in future. For the purpose of this study the distribution of species within ecosystem types was extracted from the online biodiversity database, the Global Biodiversity Information Facility ([www.GBIF.org](http://www.GBIF.org)). This provided an initial count of species per vegetation type (Table 4) or floristic zone (Table 8). The values are used to illustrate the BII, and could be substantially improved using more detailed local data.

## 1. *Demonstrational BII based on eco-region vegetations types*

This calculation summarises the steps involved in calculating the BII of eco-regions within the CFS. The results of the analysis are displayed in Tables 2-4 with Table 5 indicating the final BII score.

**Table 2: (A) – Area of vegetation type within each land use classification (millions of hectares)**

Row Labels	Degraded	Light use	Plantation	Protected	Grand Total
Dry inland forest	3.04	0.49	0.06	0.66	4.25
Montane forest	0.72	0.34	0.01	0.45	1.51
Mangrove forest	0.03	0.00	0.00	0.00	0.03
Peat forest	0.16	0.07	0.00	0.03	0.26

**Table 3: (I) Impact factors - taken from the South African BII as an example**

Ecosystem	Degraded	Light use	Plantation	Protected
Dry inland forest	0.47	0.87	0.19	1
Montane forest	0.47	0.87	0.19	1
Mangrove forest	0.58	0.94	0.2	1
Peat forest	0.58	0.94	0.2	1

**Table 4: (R) Species Richness – approximate values extracted from GBIF online database**

Ecosystem	Species Richness
Dry inland forest	4545
Montane forest	1986
Mangrove forest	500
Peat forest	77

**Table 5: BII calculation showing potential values for option 1 and 2**

Ecosystem	Intermediate steps in calculation		BII (multiply by 100 to express as a percentage)	
	AxIxR	AxR	Option 1	Option 2
			(AxIxR)/(AxR)	
Dry inland forest	11472.34	19305.12	0.59	0.47
Montane forest	2153.14	3006.79	0.72	0.64
Mangrove forest	8.96	15.66	0.57	0.26
Peat forest	14.25	19.95	0.71	0.57
Average BII			<b>0.64</b>	<b>0.48</b>

Table 5 indicates the intactness of eco-regions in the CFS range from 57% to 72% following Option 1 and 26% to 64% for Option 2. The overall BII for the CFS based on eco-regions are 64% and 48% for Option 1 and Option 2 respectively.

## 2. *Demonstrational BII based on altitudinal floristic zones*

This calculation summarises the steps involved in calculating the BII of Floristic Zones within the CFS. The results of the analysis are displayed in Tables 6-8 with Table 9 indicating the final BII score.

**Table 6: (A) – Area (Mha) of vegetation type within each land use classification**

Floristic zones	Degraded	Light use	Plantation	Protected	Grand Total
Lowland dipterocarp forest	2.38	0.33	0.06	0.49	3.27
Hill dipterocarp forest	1.17	0.37	0.01	0.32	1.87
Upper dipterocarp forest	0.38	0.12	0.00	0.21	0.71

**Table 7: (I) Impact factors taken from the South African BII as an example**

Floristic zones	Degraded	Light use	Plantation	Protected
Lowland dipterocarp forest	0.47	0.87	0.19	1
Hill dipterocarp forest	0.47	0.87	0.19	1
Upper dipterocarp forest	0.58	0.94	0.2	1

**Table 8: (R) Species Richness –generic values extracted from the GBIF online database**

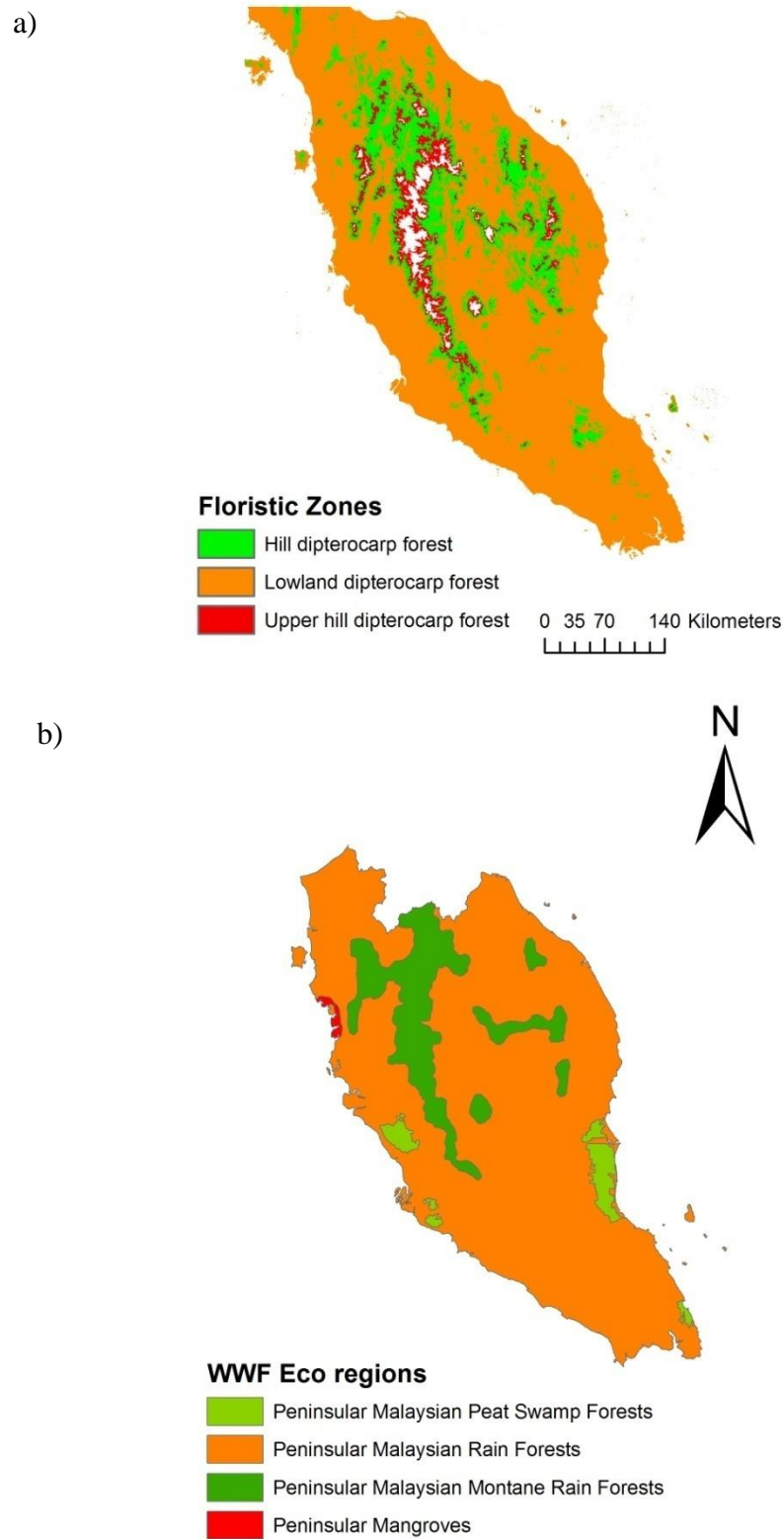
Floristic zones	Species Richness
Lowland dipterocarp forest	4545
Hill dipterocarp forest	1986
Upper dipterocarp forest	500

**Table 9: BII calculation showing potential values for option 1 and 2**

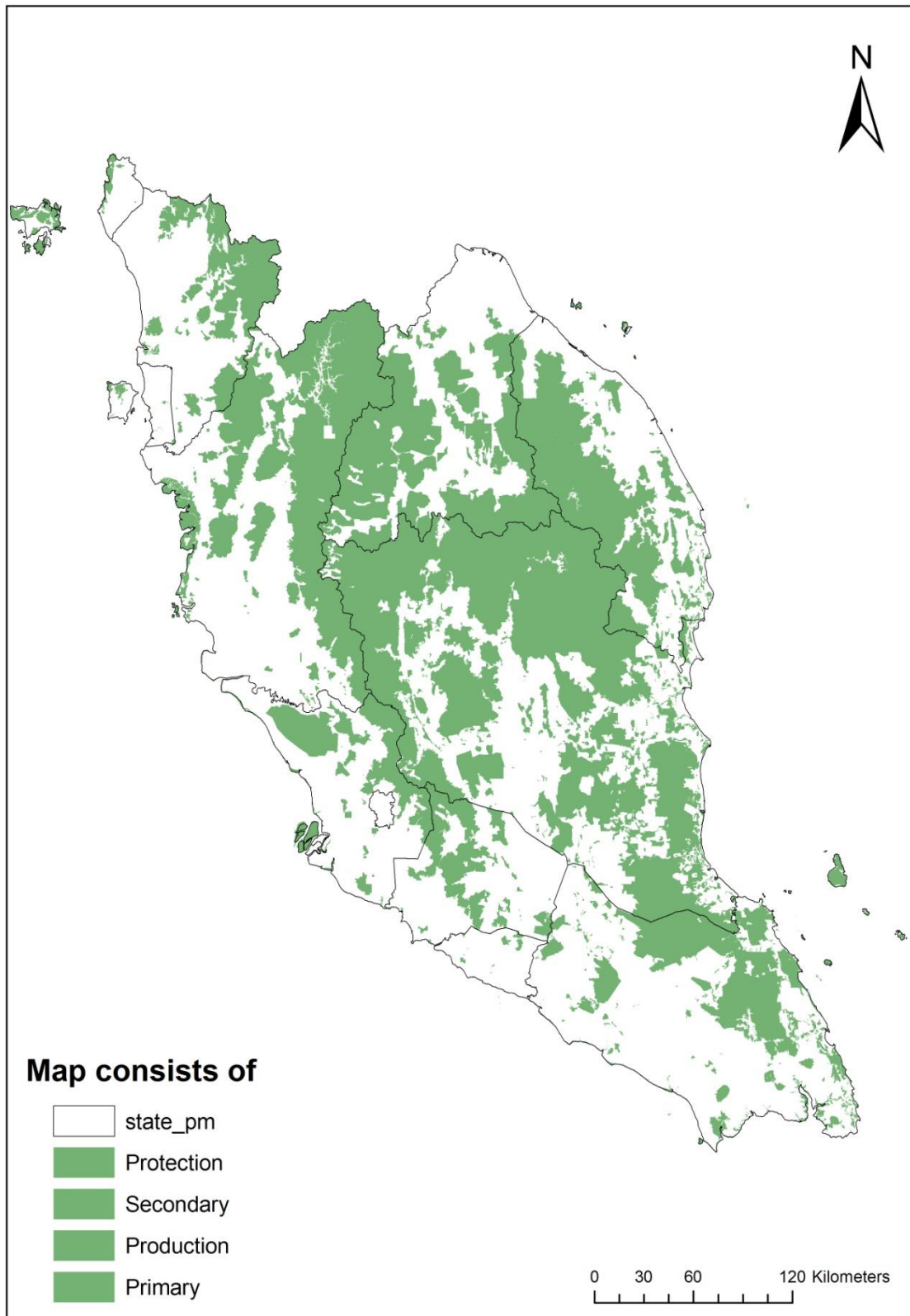
Floristic zones	Intermediate steps in calculation		BII (multiply by 100 to express as a percentage)	
	AxIxR	AxR	option 1	option 2
Lowland dipterocarp forest	8687.36	14849.30	0.59	0.47
Hill dipterocarp forest	2375.79	3715.81	0.64	0.51
Upper dipterocarp forest	270.04	353.30	0.76	0.67
<b>Average BII</b>			<b>0.66</b>	<b>0.54</b>

Table 9 indicates the intactness of floristic zones in the CFS range from 59% to 76% following Option 1 and 47% to 67% for Option 2. The overall BII for the CFS based on floristic zones are 66% and 54% for Option 1 and Option 2 respectively.





**Figure 1: The vegetation types used within this study. A) Floristic zones according to elevation B) WWF Eco-regions**



**Figure 2: The extent of the analysis used to capture the Central Forest Spine in Peninsular Malaysia. All calculations were made to this extent.**

### **3. *Gaps and Recommendations for the IC-CFS project***

The main constraint to the BII calculations in Malaysia are the lack of species richness data and locally-derived land use-specific impact factors. The values generated by the BII calculation in this study reflect the potential of the method for the CFS Malaysia and does not accurately reflect the actual state of biodiversity in the region, or constitute a pre-CFS baseline. The full potential of BII can only be explored if all the relevant information is made available.

An important limitation to the current analysis are adequate estimations of species richness or abundance values. The estimates used in this example are derived from published literature and are applicable to the broad forest units. A better understanding of the species associations within particular habitat are needed to provide an accurate estimation of biodiversity intactness. The BII is able to function on estimates of biodiversity with regard to species richness and/or functional types. These values could be generated by a workshop with taxa specific experts.

It is important to generate the correct impact factors for biodiversity that can be linked to the different forestry sectors. It would be useful to know the level of impact from logging in Primary forests vs. Secondary Forests. Also to what extent do Secondary forests, that are now protected, can recover in relation to Primary Protected forests.

### **4. *Conclusions and recommendations***

The BII would be a suitable indicator to use for monitoring and evaluation of the CFS project, and potential extension to the full Peninsular Malaysia and the entire extent of the country. The BII scores calculated in this exercise reflect the actual land use within the CFS. Changes are likely to occur once the species richness values and relevant impact factors are introduced into the analysis. However, if these are agreed to be similar to what was used, then the CFS is indicative of a functional landscape with overall intactness between 60%-70%.

The BII, should be accompanied by other indicators, based on threat status and fragmentation, in order to deal with all important aspects of biodiversity. These aspects were not considered as part of this report. Recommendations for improving the BII are outlined below:

#### *Recommendation 1:*

1. Biodiversity expert workshop to facilitate the generation of knowledge of species richness distribution needed for BII, based on sharing the large body of information that already exists in the forestry institutions, herbaria, biodiversity-oriented NGOs and academic institutions.

#### *Recommendation 2:*

2. Generate Malaysia-specific impact factors from a review of literature and one-on-one consultations with local taxon experts.

#### *Recommendation 3:*

3. Make key maps, such as of forest extent and use, and land cover available to the project.

## Annex III: Landscape Profiles of the Three Focal Landscapes

### BELUM-TEMENGOR FOREST LANDSCAPE: CFS I PL2 (TEMENGOR FOREST RESERVE – ROYAL BELUM STATE PARK)

#### *Biophysical Context*

Of particular importance to the CFS is the northern forest landscape of Belum-Temengor in the State of Perak and stretching across the border to Thailand. The Belum-Temengor forest landscape contains one of the largest areas of intact and partially protected forest on the Malay Peninsula (second only to Taman Negara). The protected portion of the landscape is the Royal Belum State Park (117,500ha) and adjacent protected areas in Thailand that collectively form a 280,000ha block of protected forest. Royal Belum State Park is separated from the southern part of the landscape by the East West Highway and transmission line. The landscape also contains Temengor Lake formed by a hydroelectric dam. Altogether, the total area of Belum-Temengor is 354,600ha. South of the Royal Belum State Park are several production forests including Temengor PRF, Banding PRF (formerly part of Belum PRF), Gerik PRF and a new PRF straddling the East West Highway. To the south of this landscape is the rest of the Titiwangsa Range.

Belum-Temengor is well known for its spectacular plants, birds and mammals. It is unique with a mixture of Thai-Burma and Malaysian forest types that is not found anywhere else on the peninsula. Scientific expeditions have been carried out in 1910<sup>110</sup>, 1993/4<sup>111</sup>, 1998<sup>112</sup>, 2003<sup>113</sup>, 2007<sup>114</sup> and 2008<sup>115</sup>, each discovering unique habitats, rich in wildlife and plants. The forests contain over 3,000 species of flowering plants, many endemic to just the northern part of the Malay Peninsula, including the giant *Rafflesia hasseltii*, 46 species of palms (15 endemic) and over 30 species of gingers.

Belum-Temengor meets the criteria to be an Important Bird Area (IBA), a site of international importance for bird conservation<sup>116</sup>. Over 185 species of birds have been recorded from the Belum-Temengor forest landscape. This includes all 10 species of hornbill found in Peninsular Malaysia – one of the few places where all 10 can be seen together. Belum-Temengor is vital for the survival of the globally threatened plain-pouched hornbills (*Aceros subruficollis*) and has some of the largest remaining populations of the other nine hornbill species.

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<sup>110</sup> Ridley, H.N., 1910. A scientific expedition to Temengoh, Upper Perak. *Journal of the Straits Branch of the Royal Asiatic Society*. 57, pp.5-122.

<sup>111</sup> Davison, G.W.H., Soepadmo, E. and Yap, S.K., 1995. The Malaysian Heritage and Scientific Expedition to Belum: Temengor Forest Reserve, 1993-1994. *Malaysian Nature Journal*, 48, pp.133-146.

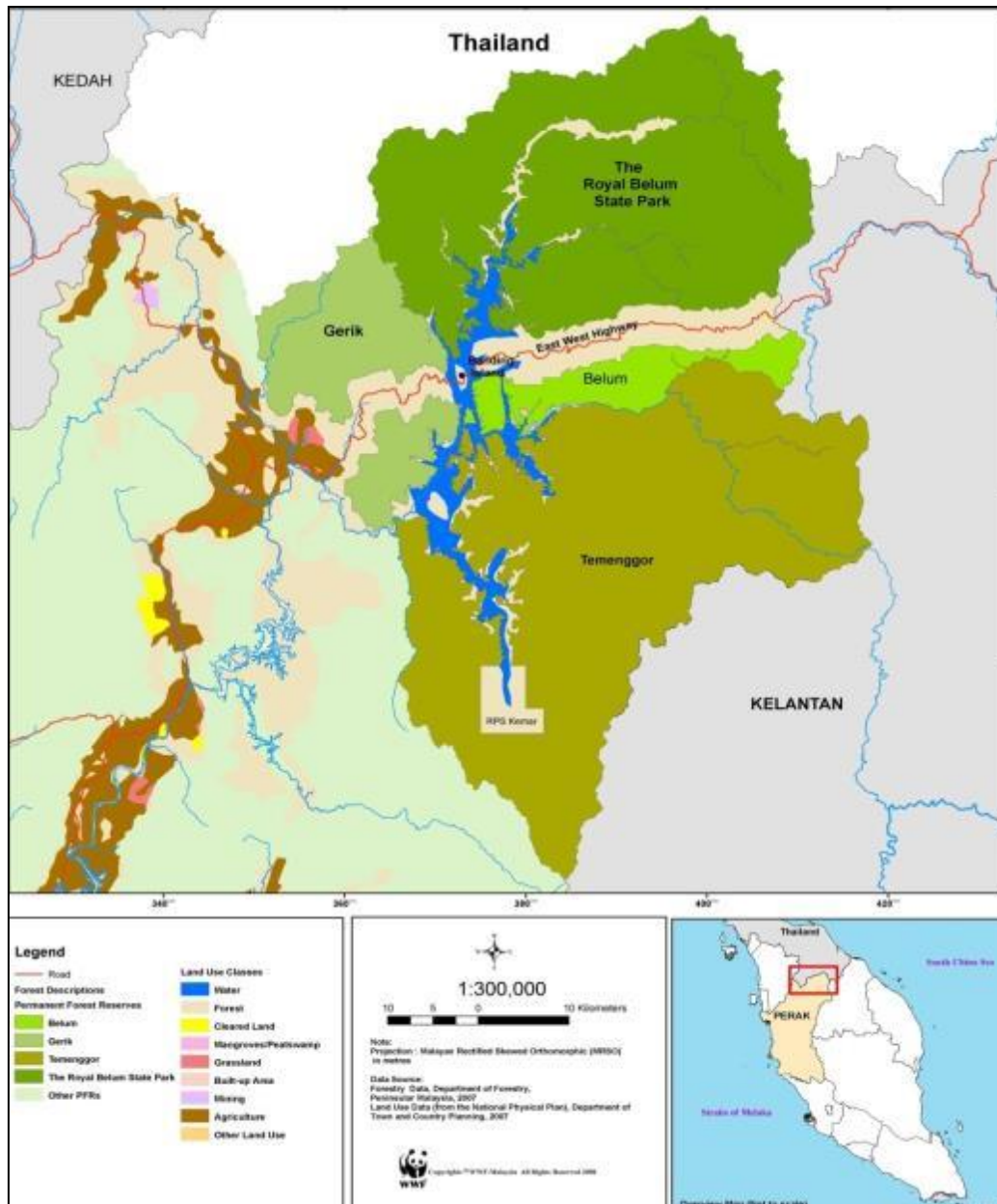
<sup>112</sup> Malaysian Nature Society, undated. *Belum Science and Heritage Expedition II*. Malaysia: Malaysian Nature Society.

<sup>113</sup> Perak State Forestry Department, 2003. *Belum Valley Scientific Expedition 2003, July 25 to Aug 1*. Malaysia: Perak State Forestry Department.

<sup>114</sup> Rhinoceros Camera Trapping Exercise in Temengor Forest Reserve, 14 June - 15 August 2007, coordinated by the Department of Wildlife and National Parks, Peninsular Malaysia (PERHILITAN).

<sup>115</sup> Biodiversity Inventory Programme at Royal Belum State Park, 16-28 August 2008, coordinated by the Department of Wildlife and National Parks, Peninsular Malaysia, in collaboration with the Perak State Parks Corporation

<sup>116</sup> IBA No. MY07 in Malaysian Nature Society Conservation Publication No. 4/2005: *A Handbook of Important Bird Areas in Malaysia*, compiled by Aik, Y.C., Sebastian, A.C., and Davison, G.W.H. Kuala Lumpur.



**Figure 10. The Project Landscape: Belu-Temenggor Forest Landscape<sup>117</sup>**

The landscape has an abundance of salt licks and is thus rich in large mammals. Herds of elephants regularly cross the East-West Highway and gaur (*Bos gaurus*) and tapir are also known from the area<sup>118</sup>. Given the abundance of prey species, it has been identified as Malaysia's second largest tiger priority site, potentially harbouring at least 10% of Malaysia's tiger population<sup>119</sup>. Tiger density in Belu-Temenggor is estimated at 0.61/10,000ha in Temenggor Forest Reserve and 1.95/10,000 ha in Royal Belu State Park. The area once had a population of rhinoceros and banteng, but these species are now thought to be extinct.

<sup>117</sup> Malaysian Conservation Alliance for Tigers. 2012. Malaysia's progress towards 1000 tigers. *MYCAT Tracks*, 4, Petaling Jaya, Malaysia.

<sup>118</sup> Stevens, W.E., 1968. *The Conservation of Wildlife in West Malaysia*. Malaysia: Federal Game Department., Seremban.

<sup>119</sup> Darmaraj, M., 2012. *Conservation and ecology of tigers in a logged-primary forest mosaic in Peninsular Malaysia*. Thesis submitted for the degree of Doctor of Philosophy. University of Kent, United Kingdom.

## ***Socio-Economic Context***<sup>120</sup>

Only Orang Asli reside in this landscape. The main Orang Asli groups here are the Jahai and Temiar, who were traditionally semi-nomads and horticulturalists, respectively, but who now cultivate rubber for a steady income. However, they also appreciate the forest as a resource for food and medicines, as well as vegetables (fern shoots and tubers) to sell in the local market. Women are the primary harvesters of forest products.

Three villages, Kg. Tiang, Kg. Kejar Hilir and Kg. Kejar Hulu, are located within the Royal Belum State Park. Residing within a totally protected landscape means the communities here do not have the freedom to develop land for commercial purposes. They do, however, clear land for their subsistence needs. Of the three settlements, Kg. Tiang is the most developed; the other two villages remain more traditional settlements.

Fifteen other villages are located in Temengor PRF, namely, Kg. Air Banun, Kg. Raba, Kg. Chiong, Kg. Selaor, Kg. Kabel, Kg. Desa Permai, Kg. Tekam, Kg. P. Tujuh, Kg. Chuweh, Kg. Tebang, Kg. Tebang Baru, Kg. Charok Bus, Kg. Pengkalan Permai, Kg. Semerlor, and Kg. Desa Ria. Many of these villages do not have access to clean water or regular electricity, and livelihoods remain largely for subsistence.

The communities in the Belum-Temengor landscape are still heavily reliant on subsistence activities such as horticulture (mostly tapioca), hunting and gathering; RISDA has initiated rubber tree planting, but many plots are still at early stages. Kg. Semerlor is the only village to earn from its rubber smallholdings; however, not everyone in the village benefits from the project; most community members in the Belum-Temengor forest landscape rely heavily on seasonal work with MKL and Berhad (the owner of the resort on Pulau Banding), environmental non-governmental organisations, and as occasional boatmen. However, many earn from trade in NTFPs, particularly in *gaharu*. There is no data available regarding percentage income but it is likely that forest products provide more than half of their cash income. Also in the area are a number of commercial interests such as logging in the Temengor PRF; eco-tourism operators; and a commercial fisheries project running in collaboration with the Fisheries Department.

### ***Threats to Biodiversity***

Belum-Temengor forest landscape is one of the most challenging landscapes with regards to poaching control; it is physically divided into two by the 125 km East-West Highway between Gerik in Perak and Jeli in Kelantan; it shares an international border; and it contains a maze of waterways. WWF-Malaysia and TRAFFIC have discovered at least 50 major access points along the highway which are used by poachers to enter the forest. In the landscape's complex environment there are ample hideaways and escape routes.

Field surveys by WWF-Malaysia and DWNP have uncovered substantial evidence of poaching by both locals and foreigners in these three areas. In 2008, WWF and DWNP, together with the police and army, removed 101 snares, helped arrest eight poachers and two wildlife traders, helped destroy a Cambodian camp and rescued one tiger from a snare. In the Royal Belum State Park and along the Gerik-Jeli highway, 301 localities with signs of illegal activities were recorded<sup>121</sup>. Despite these

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<sup>120</sup> All of the information in this section has been taken from the results of the PPG study of indigenous communities  
121 Zafir, A., Mohamad, A., Darmaraj, M, Mohamad, S. and Clements, R. (2009). *Evidence of illegal activities in Belum-Temengor Forest Complex, Perak, Peninsular Malaysia*, WWF-Malaysia, Petaling Jaya, Malaysia

efforts, information gathered by WWF and TRAFFIC on poaching and illegal wildlife trade indicate that since 2008 at least 480 wild animals have been poached from this landscape, with 230 animals hunted between 2010 and 2011. Poachers' targets include tigers, elephants, sambar deer and gaur<sup>122</sup>.

A survey in 2011 revealed that the primary poachers in Belum-Temengor are local Malays, Thais, Vietnamese and Cambodians<sup>123</sup>. According to the Orang Asli interviewed during the survey, the Malays primarily set snares for deer and porcupines, for subsistence and for sale in the local markets. Thai poachers are known to offer large sums of money to locals to act as their informers on any enforcement actions. Foreign poachers are also known to operate in large groups averaging 12 to 20 people and remain in the forest for between 30 and 45 days at a time.

**Table 16. Patrol Efforts in Belum-Temengor Forest Landscape**

Year	No of patrols, snare and joint operations	No. of snares removed/ destroyed	No of wildlife offences (cases) recorded
2009	96	68	22
2010	112	16	8
2011	113	31	5
2012	164	52	4
<b>TOTAL</b>	<b>457</b>	<b>167</b>	<b>44</b>

The key development features of the Belum-Temengor forest landscape are a hydro-electric dam on Temengor Lake and the East-West Highway between the towns of Gerik (in Perak) and Jeli (in Kelantan). In its present form, the East-West highway in Perak is not a major barrier for large animals (elephants regularly cross), and the entire stretch of this highway has been zoned as forest (Hutan Darat) under the Hulu Perak Local Plan (also ranked as a Class 1 ESA in the NPP), with the exception of a proposal for a Herb Garden (Tanaman Herba) and Pulau Banding, which is zoned for tourism.

Most of the forest along the highway has been constituted as the Amanjaya PRF; however, further development threatens the connectivity between the forests on either side of the highway. Development is already underway: in 2007 the Perak State Exco approved plans for oil palm plantations either side of the highway; highland agriculture has been proposed by the Agriculture Department, which would be within an area previously designated as forest (Hutan Darat). A high-speed train between Penang and Kota Bahru has also been proposed along this highway, as has a trans-peninsular pipeline from Bachok to Yan. Collectively, these plans are incompatible and would have a devastating impact on nature conservation and tourism. Away from the highway, other parts of the forests have and are continuously being logged.

Belum-Temengor is considered an elephant hotspot due to the area being a translocation site for elephants, as part of an initiative by the DWNP. Due to their previous habitat having been cleared for development, the elephants were relocated to a relatively isolated forest system in the northern most of Perak, but this has caused increased contact with those living in Belum-Temengor. For the majority of the 18 settlements in the Belum-Temengor landscape, elephants are a major threat to rubber plantations. There are no quantifiable data on the percentage of trees lost due to elephants but anecdotal evidence indicates the figures are high, with incidences of entire tree plantations destroyed in less than a month.

<sup>122</sup>Malaysian Conservation Alliance for Tigers. 2012. *MYCAT Tracks* Vol. 4. Petaling Jaya, Malaysia.

<sup>123</sup>Azrina, A., Or, O.C. and Kamal, S.F. (2011). *Collectors and Traders: A study of Orang Asli involvement in wildlife trade in the Belum-Temengor Complex, Perak*. Centre for Malaysian Indigenous Studies, University of Malaya, Kuala Lumpur, Malaysia.



## **TAMAN NEGARA FOREST LANDSCAPE: CFS I PL1 (TANUM FOREST RESERVE – SUNGAI YU PRF)**

### ***Biophysical Context***

Taman Negara NP spans the states of Pahang, Kelantan and Terengganu. At 434,300ha, it is the largest PA in Peninsular Malaysia and the most important conservation area for the Malayan tiger. It is also the only site in Malaysia where a baseline study of the tiger population, its prey base, and the carrying capacity for the tiger has been conducted using scientific methods (1998-2002). The joint project between the University of Florida and DWNP Peninsular Malaysia (Kawanishi & Sunquist, 2004) found the Taman Negara tiger population of 52-84 adults to be viable under strict protection of both tigers and their prey. Following this survey, in 2004 the total population was estimated to be between 70 and 112 tigers<sup>124</sup>.

The Greater Taman Negara forest complex consists of Taman Negara and King George V NPs and the surrounding PRFs (including the following: in Terengganu; Tembat, Hulu Terengganu, Pasir Raja Barat, Pasir Raja Selatan, Jerangau, Sungai Nipah and Jengai Forest Reserves; in Pahang; Gunung Ais, Ulu Beruit, Yong, Chuat, Tanum, Tekau, Tembiling, Tekam, Berkelah (Kuantan) and Remen Cereh Forest Reserves; and in Kelantan; Gunung Rabong, Bukit Hantu and Lebir Forest Reserves) and other land (including unprotected stateland forest), and covers a total area of 1,500,000 ha.

The Sungai Yu Tiger Corridor, which forms the focal forest landscape for this project, is the last critical linkage between the Greater Taman Negara complex and the Main Range complex. As its name suggests, it has been identified as a priority corridor for tigers in the NTCAP for Malaysia<sup>125</sup>. The corridor includes the Tanum PRF (on the Taman Negara side), which is separated from the Ulu Jelai and Sungai Yu Forest Reserves (on the Main Range side) by the Kuala Lipis – Gua Musang trunk road (Federal Route 8) and railway, and approximately 400 m of stateland forest, scrub and grassland. Three viaducts have been constructed along the Federal Route 8 in order to allow movement of wildlife across the road.

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<sup>124</sup>Kawanishi, K. and Sunquist, M., 2004. Conservation status of tigers in a primary rainforest of Peninsular Malaysia. *Biological Conservation*, 120(3), pp.329-344.

<sup>125</sup>DWNP, 2008. *National Tiger Action Plan for Malaysia*. Kuala Lumpur: Department of Wildlife and National Parks Peninsular Malaysia



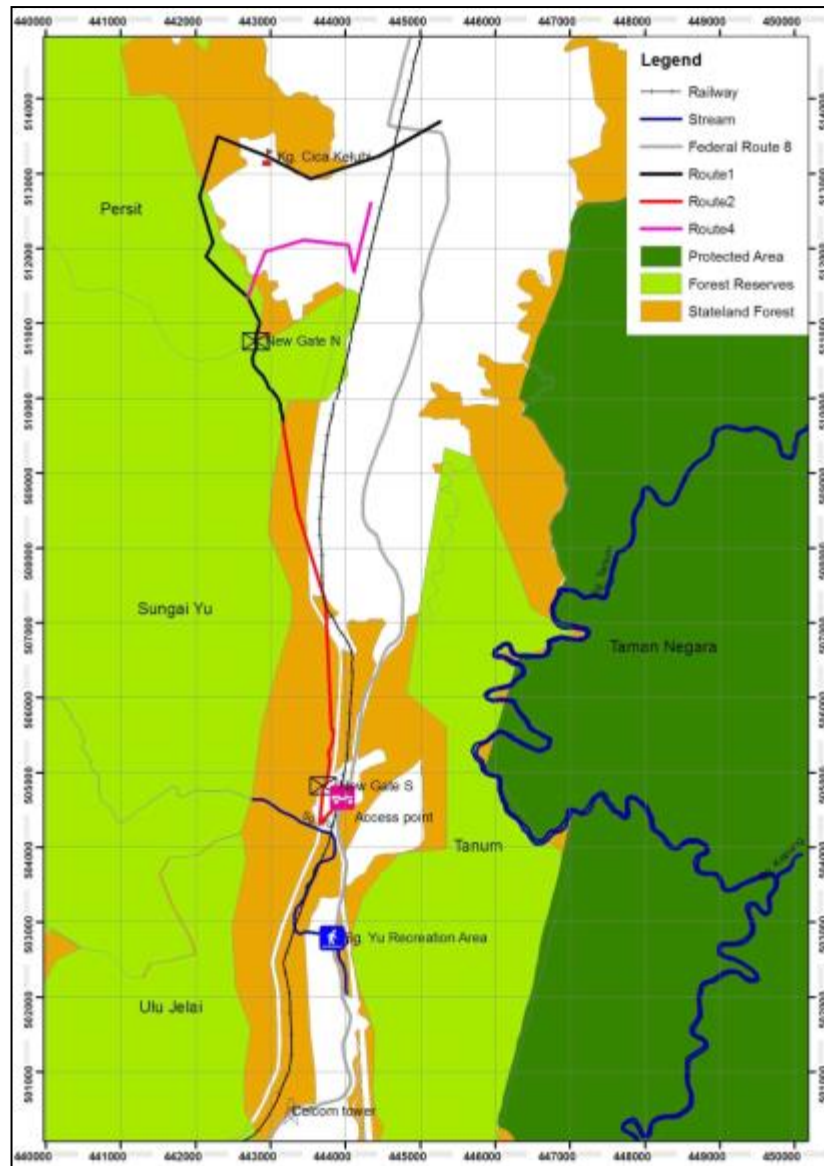


Figure 11. The Project Landscape: the Taman Negara Priority Corridor (the Sungai Yu Tiger Corridor)

### ***Socio-Economic Context***<sup>126</sup>

There are a total of 9,644 Malays living in 18 villages in the Batu Yon Mukim in which the Sungai Yu Corridor is located, within the Greater Taman Negara Forest Complex. The Malays are involved in a broad range of work, either self-employed as farmers or employed in the private and public sectors. The construction of three viaducts across Federal Route 8, to allow movement of animals across the route, affects six of these villages. Prior to their construction, the Malay villagers had illegally cleared the land for cultivation; however, the viaducts were then constructed without due consultation with the Malays; they have not been compensated for the immediate destruction of their crops, having been warned against pursuing the matter or else they could be fined MYR10,000 for illegally clearing the state land.

Kg.Orang Asli BerchahKelubi is a village of between 50 and 150 families, located somewhat further back from the Malay villages in Sungai Yu. The Bateq of this village, who were once nomadic, claim

<sup>126</sup> All of the information in this section has been taken from the results of the PPG study of indigenous communities

that they have Native Customary Rights to the area from Sungai Yu and into parts of the Taman Negara landscape, where around 50 individuals reside.

The Bateq gather NTFPs such as rattan and pandanus leaves in Sungai Yu PRF. They also utilise the forest landscape for medicinal plants as well as for food. The women use the forests particularly during flowering season to gather forest flowers, as well as to harvest food products, medicine and materials for musical instruments. They depend largely on forest produce for their food supply and are actively involved in producing and selling traditional handicrafts to tourists. Whereas in the past they traded in wildlife, such as frogs, with the government’s economic initiative to provide oil palm small holdings, each family receives a dividend of MYR600, and this has lessen the need for trading in wildlife. The Bateq also cultivate rubber and fruit.

### ***Threats to Biodiversity***

Taman Negara NP is the nation’s primary tiger priority landscape. A decade ago, the Park supported the largest, scientifically estimated, tiger population in the region with 70 to 112 tigers<sup>127</sup>. In 2000, tiger density in western Taman Negara was estimated<sup>128</sup> at between 1.10 - 1.98/10,000ha. In 2012, however, camera trapping over a 12-month period revealed that the tiger population in this same location had drastically declined, from seven individuals to just one<sup>129</sup>.

The vast reduction in tiger numbers is primarily due to poaching; it is a serious threat to the tigers and other wildlife in the Taman Negara NP. In 2011 offences in Pahang accounted for 37 out of a total of 475 wildlife-offence cases recorded in Peninsular Malaysia. Each of these recorded cases could represent numerous actual offences. For example, in 2010 during a single raid, Taman Negara enforcement officers arrested poachers in possession of 600 snares. The seizure of tiger parts in a restaurant near Taman Negara further signifies that hunting pressure is high close to PAs.

Of the 37 wildlife-offence cases recorded in Pahang in 2011, 10 cases were prosecuted. Nine of these involved the illegal possession of wildlife.

***Table 17. Patrol Efforts in the Taman Negara National Park***

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
<b>Pahang</b>	2	2	2	2	1	6	6	6	6	6	6	6	51
<b>Terengganu</b>	6	6	6	6	6	4	4	4	4	4	4	4	58
<b>Kelantan</b>	3	3	2	2	2	4	4	4	4	4	4	4	40

*Source: Department of Wildlife and National Parks Annual Report 2011*

In addition to poaching, surveys of the border of Taman Negara show that illegal tree felling is widespread and harvesting of agarwood by outsiders also takes place.

Taman Negara is also threatened by development activities. It is almost cut off from the rest of the forested landscape in the west, and increasingly becoming a “habitat island”; the clearing of forest cover along the north and west fringes of the park for oil palm plantations over the past 15 years has created an ecological bottleneck that hinders movement of wild animals, especially elephants, top predators and their prey species between Greater Taman Negara and the Main Range. Traffic volume and speeding traffic along Federal Route 8 are a real threat to animals trying to cross the road. The

<sup>127</sup>Kawanishi, K. and Sunquist, M. 2004. Conservation status of tigers in a primary rainforest of Peninsular Malaysia. *Biological Conservation* 120 (3): 329-344.

<sup>128</sup>DWNP, 2008. *National Tiger Action Plan for Malaysia*. Kuala Lumpur: Department of Wildlife and National Parks Peninsular Malaysia

<sup>129</sup>Malaysian Conservation Alliance for Tigers. 2012. *MYCAT Tracks* Vol. 4. Petaling Jaya, Malaysia.

widening of this two-lane highway, which passes through Sungai Yu which is the only remaining corridor connecting the Main Range and Taman Negara, would have effectively severed the last forested area had the three viaducts not been constructed to allow movement of wildlife across this route.

Those living in the Taman-Negara area do not generally report to DWNP on HWC incidents since the conflict is viewed as unavoidable, although preventative measures, such as hiring pig hunters to reduce pig populations, are sometimes organised. The construction of roads in the area is also preventing wildlife from approaching.

## **ENDAU-ROMPIN FOREST LANDSCAPE: CFS II PL1 (LABIS TIMUR PRF – MERSING PRF AND LENGGOR PRF)**

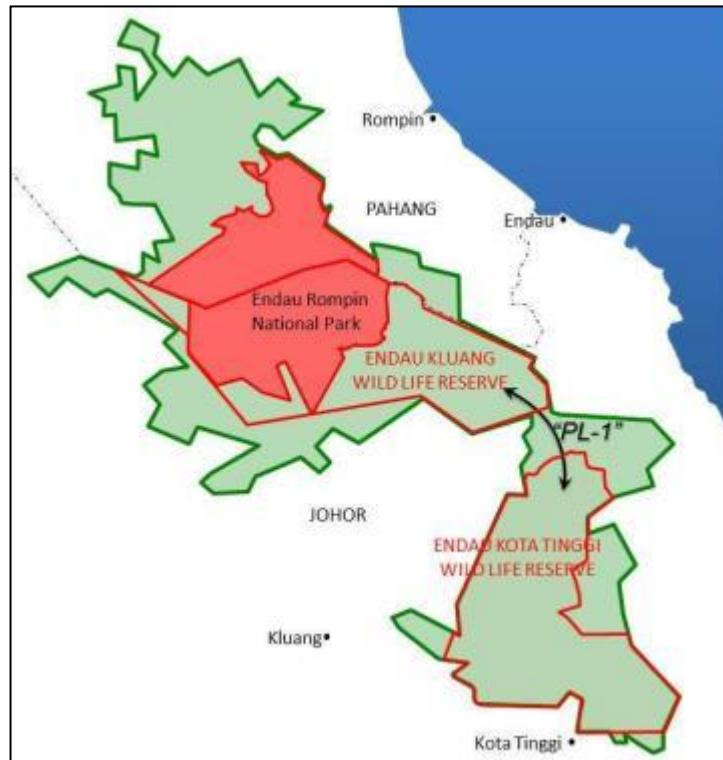
### ***Biophysical Context***

The Endau-Rompin forest landscape sits on the border between the States of Pahang and Johor and contains the headwaters of the Sungai Endau. It covers an area of 364,100ha, including in Pahang the Endau-Rompin State Park (40,200ha) and Lesong, Sungai Pukin, Endau and Sungai Marong PRFs, together with the State Park totalling 113,100ha; and in Johor the Endau-Kluang Wildlife Reserve and the Endau-Kota Tinggi Wildlife Reserve comprising Endau-Rompin NP (48,900ha) along with Labis, Mersing, Kluang, Lenggor, Semberong and Ulu Sedili PRFs (202,100ha). The landscape contains a mix of lowland and hill dipterocarp forest that is unique in the peninsula in having some affinity to the vegetation of the coastal parts of Borneo. The area's botanical distinctiveness includes "open bog-like vegetation on the top of the various hills, ridges and plateaux"<sup>130</sup>. Species from the area include a large epiphyte, the pandan, *Pandanus epiphyticus*, which in Peninsular Malaysia is only found in Johor.

Endau-Rompin is also known for its large mammals, including elephants, tapirs, and tigers. It is also the only area in the peninsula to have populations of bearded pigs (*Sus barbatus*). In 1933, two large forest areas (Endau-Kluang, Endau-Kota Tinggi) were gazetted as wildlife reserves under the Johor Wild Animals and Birds Protection Enactment 1923, recognising the area as holding important wildlife habitats. These forests extend from the central-northern region to the central-eastern region of Johor.

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<sup>130</sup>Davison, G., 1988. Endau-Rompin: a Malaysian Heritage. *Malaysian Nature Society*.



**Figure 12. The Project Landscape: the Endau-Rompin Forest Landscape<sup>131</sup>**

The southern part of this forest landscape (Lenggor, Ulu Sedili and Panti Forest Reserves) is of particular importance as a tiger habitat since it is predicted to be able to maintain a tiger population density of 0.3-0.4 tigers/10,000ha (personal communication, Song Horng Liang, Wildlife Conservation Society). It is therefore important that tigers are able to move between Endau-Rompin NP and this area. PL1 is also an important corridor for elephants, which regularly cross the Kluang – Jemaluang federal road.

### **Socio-Economic Context<sup>132</sup>**

Three Orang Asli settlements are located within the PL-1 Corridor; Terowoh and Punan inside the corridor and Pucur just outside the corridor’s boundary. The indigenous groups here are the Jakun. The three villages see their landscapes as part of their NCR claims and currently most have their own fruit orchards and have started planting rubber trees, particularly in Kg Punan and Pucur where there are RISDA development projects. Kg. Terowoh, however, remains reliant on a mixed economy of cultivation and the gathering and trading of NTFPs, primarily rattan. Requests for titled land for rubber smallholdings have been declined and instead non-indigenous contractors are encroaching.

Jakun women visit the forests to gather rattan, vegetables, plant shoots, tubers and medicinal plants, and to fish in the river. Although they still use traditional medicine, much of the indigenous knowledge on the medicinal values of forest plants has been lost.

All three villages have varying degrees of access to basic amenities and infrastructure; Kg. Punan is best developed, Kg. Pucur smaller but with basic amenities, and Kg. Terowoh with little access to amenities due to its more remote location.

<sup>131</sup>Malaysian Conservation Alliance for Tigers. 2012. Malaysia’s progress towards 1000 tigers. *MYCAT Tracks*, 4, Petaling Jaya, Malaysia

<sup>132</sup> All of the information in this section has been taken from the results of the PPG study of indigenous communities

### ***Threats to Biodiversity***

Of the three tiger priority landscapes identified in the NTCAP, Endau-Rompin is the smallest and is further isolated from the rest of the Main Range, and is significantly threatened by poaching activities. Johor was the first (and only) state to ban all hunting, state-wide; despite this, and fortnightly to monthly patrolling of the landscape<sup>133</sup>, indiscriminate use of snares in this landscape and other poaching signs show that wildlife are being illegally hunted.

In 2011 there were 96 wildlife-offence cases recorded from Johor (95 under Act 716 and one under Act 686). However of these cases, only four were prosecuted (all concerning illegal possession of wildlife).

***Table 18. Patrol Efforts in Endau-Rompin Forest Landscape<sup>134</sup>***

	<b>Distance covered (km)</b>	<b>Snares removed</b>	<b>Hunting signs found</b>
<b>2010</b>	4193	239	119
<b>2011</b>	4992	442	40

The connection between Mersing PRF (to the north) and Lenggong Tengah PRF, which is part of Endau Kota Tinggi West Wildlife Reserve, (to the south) is in the process of being fragmented by plantations. The existing natural forest in this key corridor is being replaced by TLC rubber plantations as well as vegetable farms and oil palm plantations. In addition, at least one iron-ore mine is being set up inside the corridor. This mine will lead to forest loss unless replanting activities are undertaken.

The extensive destruction of the natural landscape due to logging and agriculture has shrunk the roaming areas for wildlife, forcing the elephants into closer contact with humans. It is apparent that residents seek compensation from the DWNP, but in both areas, due to the seemingly inadequate responses by the authorities to incidences of HWC, some communities have taken their own action to protect their families, crops and community. The setting of snares and the lacing of crops with poison are some of the ways in which the communities retaliate, but there is no comprehensive data available to show the scale of the problem in this landscape.

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<sup>133</sup>Malaysian Conservation Alliance for Tigers. 2012. MYCAT Tracks Vol. 4. Petaling Jaya, Malaysia.

<sup>134</sup> Malaysian Conservation Alliance for Tigers. 2012. Malaysia's progress towards 1000 tigers. *MYCAT Tracks*, 4, Petaling Jaya, Malaysia

## Annex IV. List of stakeholders and roles and responsibilities in the CFS and Record of Stakeholder Consultation

Stakeholder	Roles & Responsibilities in CFS
<b>Government Ministries</b>	
Ministry of Natural Resources and Environment (NRE)	Federal government ministry to be the national executing agency for the project. It is responsible for biodiversity conservation, wildlife and forest management as well as REDD+ readiness, and houses key departments such as: FDPM (the national implementing agency of the project); DWNP (principal implementing partner of the project); Department of Irrigation and Drainage (JPS) which is an important stakeholder in water resource management in CFS. NRE also supervises statutory organisations such as: Forest Research Institute of Malaysia (FRIM), which is an important co-implementer of the CFS-wide biodiversity and ecosystem services monitoring activities; and the National Hydraulic Research Institute of Malaysia (NAHRIM), which can significantly contribute as well.
Ministry of Housing and Local Government	Key ministry responsible for planning, coordinating and implementing excellent and sustainable living environment for Malaysian people. The department of Town and Country Planning, the initiator of the National Physical Plan, falls under this ministry.
Ministry of Agriculture and Agro-Based Industries	Federal government ministry responsible for planning and implementation of policies, strategies and agricultural development programmes.
Ministry of Works	Federal government ministry responsible for infrastructural development and providing policy and regulatory framework for the construction sector.
Ministry of Transport	Federal government ministry responsible for the planning, formulation and implementation of transport policies, and implementing and monitoring development programmes for the transport sector.
<b>Federal Government Agencies</b>	
National Human Rights Commission (SUHAKAM)	SUHAKAM plays a role in the oversight of human rights in general but has been particularly involved in the rights of the Orang Asli in Peninsular Malaysia. They have been advocating for greater recognition of Orang Asli traditional rights by the state governments.
Energy Commission	The official regulator for the energy industry in Peninsular Malaysia and Sabah. The Commission was established to ensure that the energy industry is developed in an efficient manner so that Malaysia is ready to meet the new challenges of globalization and liberalization, particularly in the energy supply industry.
Department of Town & Country Planning	DTCP is the main agency responsible for the formulation of the CFS as a concept and also for the CFSMP. DTCP works with local authorities to develop local plans which also make reference to the CFS.
Economic Planning Unit, Prime Minister's Department	Federal government agency responsible for national economic and development planning., as well as development of strategies and policies in determining financial allocations for the various sectors of the national economy.
Auditor General's Department	The AGD plays a general oversight role for all government agencies. They have been particularly critical of the implementation of the CFS in a number of instances. In particular the AGD published a report that highlighted deficiencies in the implementation of the CFS in the Kahang landscape.
Malaysian Rubber Board	The MRB is the main government agency overseeing the rubber industry in Malaysia. They help facilitate the supply of rubber seedlings and will be a significant stakeholder in the implementation of the CFS due to their role in providing technical advice to smallholders.



<b>Stakeholder</b>	<b>Roles &amp; Responsibilities in CFS</b>
Malaysian Palm Oil Board	The MPOB is the main government agency overseeing the oil palm industry in Malaysia.
Malaysian Timber Industry Board	MTIB (via their subsidiary, Forest Plantation Development Sdn Bhd) are involved in issuance of soft loans to the plantation industry (including companies in the Kahang landscape).
Department of Orang Asli Development (JAKOA)	Federal agency responsible for Orang Asli affairs. Key role in coordinating development activities related to the Orang Asli.
Rubber Industries Smallholder Development Authority (RISDA)	Federal agency promoting rubber (and to a lesser extent oil palm) among various smallholders, including several Orang Asli villages in the CFS.
Public Works Department (JKR)	Main engineering department responsible for general civil works, including the maintenance of most of the federal and state roads.
Malaysian Timber Certification Council	MTCC implements the Malaysian Criteria and Indicators for Forest Management Certification, setting the standards and monitoring compliance.
Department of Railways	Oversees the operation of KTMB and the Railway Asset Corporation in the management of the federal railway network.
Malaysian Highways Authority	Responsible for overseeing privatized highways in Peninsular Malaysia (at least one highway (EKVE) is planned to cut through part of the CFS).
Department of Environment	Responsible for approval and monitoring of EIAs (including for several projects in the CFS).
Drainage & Irrigation Department	Responsible for maintaining water courses in Peninsular Malaysia (including several rivers relevant to CFS).
Forestry Department Peninsular Malaysia	The key implementation agency of the CFSMP. Headquarters in Kuala Lumpur provide overall coordination and technical advice (through a dedicated CFS Unit of the Forest Management Division). The actual implementation activities are carried out by the respective state forestry departments (Perak State Forestry Department, Pahang State Forestry Department, Johor State Forestry Department). The state forestry departments have operational autonomy and report to their respective state executive councils on operational matters. The landscape-level management is carried out by the district forest offices (Gerik DFO, Lipis DFO, Mersing DFO).
Department of Wildlife & National Parks	The federal department charged with the responsibility for wildlife and national parks, it is the key implementation agency for wildlife crime enforcement activities in the CFS.
Federal Land Development Authority (FELDA)	Government agency charged with handling the resettlement of rural poor into newly developed areas. It focuses on opening smallholder farms for the ethnic Malay population growing cash crops. It operates 880,000 hectares of oil palm plantations, mainly across Peninsular Malaysia and therefore is a significant stakeholder in CFS implementation and landscape planning and management in target landscapes.
Armed Forces	An important stakeholder in the Belum-Temengor landscape, with several camps in and around the Royal Belum State Park.
Police	Play a supplementary role in the enforcement of wildlife laws, assisting DWNP especially with regards to gun control measures.
National Land Council	The National Land Council (NLC) is responsible for the coordination of and guidance for planning, management, development and use of land in Peninsular Malaysia (including forest resources). It was set up in order to ensure that national policies would

<b>Stakeholder</b>	<b>Roles &amp; Responsibilities in CFS</b>
	be implemented uniformly across states, since each state has authority over its own land. The NLC also acts as a point of contact for the federal and state governments for discussions and problem solving regarding land policies, administration and management, in order to combat the fragmented governance system.
Environmental Quality Council	The EQC oversees the implementation of the Environmental Quality Act 1974 and sets national level policies on issues related to pollution.
National Physical Planning Council	The NPPC is chaired by the Prime Minister and coordinates spatial planning among all the states of Peninsular Malaysia.
National Biodiversity Council	The National Biodiversity Council (NBC), which was established in 2002 as the National Biodiversity and Biotechnology Council, is the highest-level decision-making body of the government pertaining to biodiversity management. The Council is chaired by the Prime Minister and comprises 10 Cabinet ministers and 13 State Chief Ministers. However, this Council has not met for several years.
<b>State Government</b>	
State Executive Council (Exco)	Ultimate authority on all land matters in the CFS landscapes they are critical stakeholders in ensuring the security of the priority areas and corridors in their respective state, as forestry policy formulation and implementation is responsibility of the state forestry departments, rather than the federal forestry department. Under the state excos are various committees (e.g. for Environment, Tourism, Forestry, Orang Asli).
State Economic Planning Units	Responsible for developing state-level policies with regard to land use and economic development.
State Parks Corporations	Key stakeholders in the management of PAs in the Belum Temengor Landscape (Perak State Park Corporation) and in Endau-Rompin (Johor State Park Corporation).
Department of Land & Mines	State department responsible for the coordination of issuance of land titles and mining leases.
Monarchy	The office of the respective state sultans and those of the crown princes are important stakeholders in terms of land use, logging concessions and mining leases in all three CFS focal landscapes.
<b>Peoples' Representatives</b>	
Senators	Senators appointed to represent marginal groups (such as Orang Asli) are important because there are no Orang Asli elected representatives in the Dewan Rakyat.
Members of Parliament	The peoples' representatives in the Federal Parliament are important in voicing the concerns of local communities on national level issues.
Members of State Legislative Assemblies	The peoples' representatives in the state legislative assemblies (e.g. Perak, Pahang and Johor) have a role in the enactment or amendment of laws related to land and forests. The Public Accounts Committees of these assemblies play an oversight role over state agencies.
Local government	Mostly appointed, these include Members of Village Committees (JKKK), members of local councils, etc. The buy-in from these representatives are important in the implementation of site-specific initiatives in the CFS focal landscapes.
Political Parties	Policies pledging the reform of forest laws are in the manifestos of both the main political coalitions in Malaysia (Barisan National and "Pakatan Rakyat").
<b>Private Sector</b>	
Utility Companies	Water suppliers and electricity suppliers such as Tenaga Nasional Berhad (TNB) are important partners for the PES component, as potential buyers of the ecosystem



Stakeholder	Roles & Responsibilities in CFS
	services. One company Perak Hydro Renewable Energy Corporation Sdn Bhd (PHREC) is already working together with the Perak State Forestry Department on such a scheme.
Keretapi Tanah Melayu Berhad (KTMB)	KTMB is the railway operator in Peninsular Malaysia. They are a particularly important stakeholder in the Sungai Yu Corridor. There is also a plan to build a high-speed railway through the Belum-Temengor landscape.
Highway maintenance companies	Most roads in the CFS come under the Public Works Department but some stretches (such as the East-West Highway) are privatized to highway maintenance companies.
Tour operators	Tourism operators, concessionaires, lodge owners in the target landscapes will be key stakeholders in the projects, in support of landscape management plan development and implementation and development of alternative livelihoods based on community based tourism. One such company is the EMKAY Group (including MK Land Bhd) that runs a resort in the Belum-Temengor landscape.
Logging/Plantation companies	Logging licence holders, contractors and sub contractors are important stakeholders throughout the CFS in terms of operational on-the-ground management. In the BT landscape, an important company is Perak ITC Sdn Bhd, which holds a long-term logging concession in Temenggor PRF. In Johor, several companies are involved in logging and plantation development including Jasa Wibawa Sdn Bhd, Hamid Sawmill Sdn Bhd, Yayasan Johor, Kulim Plantations Berhad, Mados Plantation Sdn Bhd among others. In Pahang there are several small logging companies involved in the Sungai Yu landscape. Some of these companies are represented by trade associations such as the Malaysian Timber Organisation (MTO), East Coast Loggers' Association, Persatuan Pembalak Bumiputera Negeri Perak and the Malaysian Palm Oil Association (MPOA).
FELDA Global Ventures Berhad	FELDA is the largest oil palm plantation in the CFS, with extensive existing estates and also areas planned for future conversions, including in part of the Sungai Yu landscape.
Mining companies	Several iron mining companies are operating in the Pahang and Johor landscapes. These companies have an important role in the implementation of the CFSMP.
Consulting companies	Several research and consulting companies have been closely involved in the original conceptualization of the CFS and the drafting of related plans over the years. These companies include PE Research Sdn Bhd; Malaysian Environmental Consultants Sdn Bhd; ERE Consulting Group; Green Spider; among others. The expertise in these consulting groups will be a valuable resource for the implementation of the CFSMP.
Non-timber Forest Produce (NTFP) dealers & manufacturers	There are several NTFP dealers and processors that are relevant to the CFS, these include the rattan and gaharu industries (traders, manufacturers). The wild meat and pet trade are also relevant in this regard.
<b>Academic Institutions</b>	
Universiti Putra Malaysia	UPM's Faculty of Forestry is the main forestry faculty in Malaysia and is involved in several research initiatives related to the CFS.
Universiti Malaya	UM plays a role in research related to several aspects of the CFS including biodiversity (through its Institute of Biological Sciences) as well as Orang Asli issues (through its Centre of Malaysian Indigenous Studies). UM also has a field studies centre in the CFS (Ulu Gombak).
Universiti Kebangsaan Malaysia	UKM has an Institute for Environment and Development (LESTARI) that has been involved in several initiatives related to sustainable development generally, and forest biodiversity in particular. UKM also has a consultancy arm involved in environmental impact assessment of projects affecting the CFS.

Stakeholder	Roles & Responsibilities in CFS
University of Nottingham Malaysia Campus	UNMC has a School of Geography with an important project on the Management and Ecology of Malaysian Elephants (MEME). MEME is working with DWNP on studying elephant populations in the CFS, with a special focus on the Belum-Temengor landscape.
Universiti Utara Malaysia	UUM plans to establish a new university campus inside the Belum-Temengor landscape.
Universiti Sains Malaysia	USM has programmes looking at the study of biodiversity in Peninsular Malaysia and has worked with the EMKAY group to look at the Belum-Temengor landscape in particular.
Rimba Research Group	Rimba is a group of biologists conducting research on threatened species and ecosystems in Malaysia, with the ultimate aim of conserving natural habitats and ecosystems. Rimba's main project is on the Kenyir Wildlife Corridor in Terengganu.
<b>Civil Society</b>	
Malaysian Environmental NGOs (MENGOs)	Coordinates and disseminates information among its members (including MNS, WWF Malaysia, TrEES and Wetlands International, all of whom are actively involved in conservation projects in the CFS).
Malaysian Conservation Alliance for Tigers (MYCAT)	Alliance of conservation organizations, including the Malaysia Nature Society, WWF, Wildlife Conservation Society (WCS) and TRAFFIC South-East Asia, with the objective of saving the Malayan tiger in the wild. It coordinates implementation of the Tiger Conservation and Action Plan and includes wildlife scientists. Therefore it is an important stakeholder to the project and possible collaborator for developing science based wildlife survey mechanisms and protocols and their application in the target landscapes. MYCAT's Citizen Action for Tigers (CAT) Walks programme involves carrying out regular group activities in the Sungai Yu Tiger Corridor. This initiative helps ensure that there is a regular presence of conservation-minded individuals in this critical landscape.
Wildlife Conservation Society (WCS) Malaysia Program	WCS supports a tiger conservation programme in the Endau-Rompin forest landscape, entailing support for patrols by DWNP, JNPC, Forest Dept. rangers and systematic monitoring of tiger population, prey occupancy surveys and environmental education activities. Important stakeholder/collaborator and possible co- implementer of landscape level actions on the ground, especially in the Endau-Rompin forest landscape
TRAFFIC South-East Asia	South-East Asia chapter of TRAFFIC - a global wildlife trade monitoring network, working to ensure that trade in wild plants and animals does not threaten conservation of nature. Important stakeholder and possible co-implementer of some activities under the wildlife monitoring system strengthening component of the project, in particular the intelligence-based national wildlife trade surveillance system strengthening linked to the international wildlife trade enforcement network. TRAFFIC has a specific programme looking at wildlife trade in the Belum-Temengor landscape.
WWF-Malaysia	WWF has supported tiger conservation since 2002 through its Tigers Alive programme. The current phase III (2008-2011) focuses on the establishment of ecological linkages in the Belum-Temengor forest landscape. Important stakeholder/collaborator and possible co-implementer of landscape level actions on the ground, especially in the Belum-Temengor forest landscape
Malaysian Nature Society	MNS is active in all three focal landscapes, having branches in each state. In Belum-Temengor it was one of the main drivers behind the creation of the State Park and has been actively campaigning to stop logging in the rest of the landscape. MNS Selangor Branch has been the main supporter of the MYCAT CAT Walks in the Sungai Yu Tiger Corridor. MNS was also the main party responsible for the creation of the

Stakeholder	Roles & Responsibilities in CFS
	Endau-Rompin NP which was the result of an expedition and campaign in the 1980s. MNS has an ongoing hornbill conservation project in the B-T Landscape.
ASEAN-WEN	The Association of South-East Asian Nations Wildlife Enforcement Network (ASEAN-WEN) coordinates the regional response to illegal trade in protected species, which threatens biodiversity, endangers public health, and undermines economic wellbeing. Important stakeholder and possible collaborator/co-implementer of some activities under the wildlife monitoring system strengthening component of the projects.
Association for the Protection of Natural Heritage of Malaysia (PEKA)	Working with the Pahang State Forestry Department on replanting, forest surveillance and public awareness activities in the CFS.
Wetlands International Malaysia	Working on the conservation of peatlands, including the South-East Pahang Peat Swamp Forest and the Tasek Bera Ramsar Site (both parts of the CFS).
Global Environment Centre	Working on improving water resource management in several CFS states including Perak and Selangor.
The Malaysian Society for Transparency and Integrity (TI Malaysia)	TI Forest Governance Programme seeks to improve public participation and transparency of forest management throughout Malaysia, including the CFS (has included a special focus on the plight of several Orang Asli communities).
Malaysian Trade Unions Congress (MTUC)	MTUC is the umbrella organization for the main trade unions in Malaysia. It has a general interest in the welfare of workers and of specific relevance to industries in the CFS includes the All Malayan Estate Staff Union, the FELDA Workers Union and the Peninsular Malaysia Mine Workers Union, among others.
Timber Employees Union, Peninsular Malaysia (TEUPM)	TEUPM is the main union looking out for the rights and welfare of workers in wood-based industries in Peninsular Malaysia, it is not a member of MTUC.
West Malaysia Malay Forest Officers Union (KPPHMSM)	KPPHMSM is the main union of FDPM staff, it is not a member of MTUC.
National Union of Plantation Workers (NUPW)	NUPW is the main plantation workers union in Peninsular Malaysia.
Institute of Foresters Malaysia (IRIM)	IRIM is the professional institute that aims to promote and advance the science and practice of all aspects of forestry. IRIM has an ongoing cooperation with TI Malaysia in their “Forest Watch” programme.
Roundtable for Sustainable Palm Oil (RSPO)	RSPO is the international body in charge of developing voluntary standards for sustainable management of palm oil plantations and overseeing a scheme to verify the same.
Malaysian Indigenous Peoples Network (JOAS)	JOAS is the national-level network of NGOs and community organizations concerned with the welfare of indigenous people in Malaysia.
Peninsular Malaysia	JKOAS is the peninsula-level network of community organizations concerned with the

<b>Stakeholder</b>	<b>Roles &amp; Responsibilities in CFS</b>
Orang Asli Village Network (JKOAS)	welfare of Orang Asli.
Peninsular Malaysia Orang Asli Society (POASM)	POASM is a registered society formed by members of the Orang Asli community to help protect their identity, heritage and future.
Centre for Orang Asli Concerns (COAC)	COAC is a centre to facilitate Orang Asli initiatives related to their self-development and in defence of their rights, and to support those who want to promote such initiatives.
Forest Sustainability Malaysia Sdn Bhd (FSMSB)	FSMSB is the company that has been tasked to develop a national forest management standard for Malaysia under the Forest Stewardship Council (FSC) scheme.
Sahabat Alam Malaysia (SAM)	SAM is the local branch of Friends of the Earth and has been campaigning for forest protection in several CFS states, particularly in Perak.
Persatuan Aktivis Sahabat Alam (KUASA) Perak	KUASA is a group of grassroots activist fighting for environmental protection in Perak. They have been actively involved in the TI Malaysia Forest Watch initiative.
Treat Every Environment Special Sdn Bhd (TrEES)	TrEES is a group of environmentalists based in Selangor. They were the main driving force behind the creation of the Selangor State Park (an important protected area in the CFS). They have formed a coalition with WWF and MNS to make sure that the park is adequately protected and not fragmented by highway development.
Malaysian Bar Council	The Malaysian Bar is the professional organization for lawyers in Peninsular Malaysia, it has active committees on “Orang Asli” as well as on “Environment”. The Bar committee on Orang Asli is an important in coordinating the representation of local communities in several court cases between where the Orang Asli are challenging the state governments.
Financial institutions	Several Banks may play a role as financial intermediaries to broker sales of ecosystem services and monitor compliance. Large banks such as HSBC and Maybank have programmes that contribute to forest governance in Malaysia. HSBC is funding the development of FSC standards. The Maybank Foundation is an important donor to MYCAT.
<b>Individuals</b>	
Local Residents	Key users and beneficiaries of the forest biodiversity. They are the affected parties of human wildlife conflict, and play a major role in local habitat conservation and controlling of poaching. Important co-implementers of landscape level activities including development of landscape management plans, designing and implementation of socio-economic measures to establish ecological connectivity, as well as participatory biodiversity and ecosystem service monitoring and wildlife protection activities.
Outsiders	In addition to locals, there are several outsiders that are important stakeholders in their individual/personal capacities. These include migrant workers (who seldom have any collective representation because membership of unions is restricted to Malaysian citizens). In addition, there are numerous non-local recreational users of the forests in all three CFS focal landscape (including campers, hikers, photographers, hunters, fishing enthusiasts, 4WD enthusiasts).

## **Record of Stakeholder Consultation**

### **Record of consultation with tribal communities**

In order to ensure that the local communities in particular the Orang Asli communities are properly consulted and their views and concerns are taken on board, the PPG team conducted several visits to the villages in all three of the focal corridors sites. In addition, the PPG team worked with the Forestry Department Peninsular Malaysia and the three state forestry departments to facilitate a series of formal consultation meetings that were attended by local communities as below.

<b>Date</b>	<b>Group</b>	<b>PPG Team</b>	<b>Remarks</b>
10th April, 2013	RPS Air Banun (Belum-Temengor), Perak	SCS	Attending headmen-Samad, Analek and Andak
11th April, 2013	Kg Bechah Kelubi (Taman Negara -Merapoh), Pahang	SCS	(Attending headmen-Harun B. Abas)
12th April, 2013	Kg Punan (Endau/Kahang), Johor	SCS, FLBCS	(Attending headmen - Lilin B. Jumpa)
13th April, 2013	Kg Pucur (Endau/Kahang), Johor	SCS, FLBCS	(Attending headmen-Semangar B. Ahmad)

Note: FLBCS = Forest Landscape and Biodiversity Conservation Specialist; SCS = Social and Community Specialist

The above consultations represented the culmination of several informal meetings and briefings in all three focal corridor landscapes where special efforts were made to reach out to the key local communities with a focus on the indigenous Orang Asli population. In addition, informal consultations were made with representatives of the national-level Jaringan Kampung Orang Asli Semenanjung Malaysia (JKOAS – the Peninsular Malaysia Network of Aboriginal People).

The main comments, suggestions and views expressed during these meeting that were relevant to the project were as follows: a) need to ensure that human-wildlife conflict (particularly from elephants) is not increased by proposed corridors; b) need to respect native customary land in the design of the proposed corridors; c) need to ensure that crop loss from elephant damage is adequately compensated; d) need to establish formal avenues of communication between relevant agencies and affected communities.

Currently, there is no practice for significant community participation in co-management of the forests and wildlife within the three targeted landscapes. However, there is a strong desire for official ownership and responsibility for the land, and involvement in decision-making regarding resource use. The establishment of joint committees consisting of government authorities, Orang Asli communities and other land users, with responsibilities shared between stakeholders, would have several benefits. Such an arrangement would allow the Orang Asli to a) participate in decision-making b) gain income from employment in land management activities, c) enhance the effectiveness of the land management due to their strong knowledge of the forests and d) give the Orang Asli recognition and increased social status. Employment opportunities include: monitoring and enforcement, tree-planting and fence construction, documentation of local resource sites and indigenous knowledge, identification and protection of local resources for handicrafts and commercial harvests (such as Tualang trees, which are commons sites for bees' nests).

The project has incorporated a number of these suggestions in all three components but mainly into the design of Component 2 - Sustainable forest landscape management of three priority forest landscapes within the CFS. In particular, project Outcome 2.4 aims for: “The socio-economic status of local communities improved and support for conservation increased through the generation of sustainable livelihoods based on wildlife and the reduction of human-wildlife conflict”. The specific output for the three landscapes are as follows: Output 2.4.1: Ecotourism and Handicrafts projects piloted within indigenous communities in Greater Taman Negara and Belum-Temengor; Output 2.4.2: Training programme piloted for indigenous community members as law-enforcement officers within Endau-Rompin; Output 2.4.3: Human-wildlife conflict mitigation measures piloted within Belum-Temengor and Endau-Rompin.

The following attendance records of collective community consultation sessions are available in separate PDF file.

Bechah Kelubi (Taman Negara -Merapoh) (Attending headmen-Harun B. Abas)	11th April, 2013
Pucur (Endau/Kahang) (Attending headmen-Semangar B. Ahmad)	13th April, 2013
Punan (Endau/Kahang) (Attending headmen - Lilin B. Jumpa)	12th April, 2013
RPS Air Banun (Belum-Temengor) (Attending headmen-Samad, Analek and Andak)	10th April, 2013

Certified by: Lim Teck Wyn

Date: 5 November 2013

Annex: Attendance records

## Annex V. Environmental and Social Screening Procedure Report

### QUESTION 1:

**Has a combined environmental and social assessment/review that covers the proposed project already been completed by implementing partners or donor(s)?**

Select answer below and follow instructions:

- NO** → Continue to Question 2 (do not fill out Table 1.1)
- YES** → No further environmental and social review is required if the existing documentation meets UNDP's quality assurance standards, and environmental and social management recommendations are integrated into the project. Therefore, you should undertake the following steps to complete the screening process:
1. Use Table 1.1 below to assess existing documentation. (It is recommended that this assessment be undertaken jointly by the Project Developer and other relevant Focal Points in the office or Bureau).
  2. Ensure that the Project Document incorporates the recommendations made in the implementing partner's environmental and social review.
  3. Summarise the relevant information contained in the implementing partner's environmental and social review in Annex A.2 of this Screening Template, selecting Category 1.
  4. Submit Annex A to the PAC, along with other relevant documentation.

**Note: Further guidance on the use of national systems for environmental and social assessment can be found in Annex B.**

**TABLE 1.1: CHECKLIST FOR APPRAISING QUALITY ASSURANCE OF EXISTING ENVIRONMENTAL AND SOCIAL ASSESSMENT** Yes/No

- |   |
|---|
| 1. Does the assessment/review meet its terms of reference, both procedurally and substantively?   |
| 2. Does the assessment/review provide a satisfactory assessment of the proposed project?  |
| 3. Does the assessment/review contain the information required for decision-making?   |
| 4. Does the assessment/review describe specific environmental and social management measures (e.g. mitigation, monitoring, advocacy, and capacity |

development measures)?
5. Does the assessment/review identify capacity needs of the institutions responsible for implementing environmental and social management issues?
6. Was the assessment/review developed through a consultative process with strong stakeholder engagement, including the view of men and women?
7. Does the assessment/review assess the adequacy of the cost of and financing arrangements for environmental and social management issues?
Table 1.1 (continued) For any “no” answers, describe below how the issue has been or will be resolved (e.g. amendments made or supplemental review conducted).

### QUESTION 2:

Do all outputs and activities described in the Project Document fall within the following categories?

- Procurement (in which case UNDP’s [Procurement Ethics](#) and [Environmental Procurement Guide](#) need to be complied with)
- Report preparation
- Training
- Event/workshop/meeting/conference (refer to [Green Meeting Guide](#))
- Communication and dissemination of results

Select answer below and follow instructions:

- NO** → Continue to Question 3
- YES** → No further environmental and social review required. Complete Annex A.2, selecting Category1, and submit the completed template (Annex A) to the PAC.

### QUESTION 3:

Does the proposed project include activities and outputs that support *upstream* planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change (refer to Table 3.1 for examples)?(Note that *upstream* planning processes can occur at global, regional, national, local and sectoral levels)



Select the appropriate answer and follow instructions:

**NO** → Continue to Question 4.

**YES** → Conduct the following steps to complete the screening process:

1. Adjust the project design as needed to incorporate UNDP support to the country(ies), to ensure that environmental and social issues are appropriately considered during the upstream planning process. Refer to Section 7 of this Guidance for elaboration of environmental and social mainstreaming services, tools, guidance and approaches that may be used.
2. Summarise environmental and social mainstreaming support in Annex A.2, Section C of the Screening Template and select "Category 2".
3. If the proposed project ONLY includes upstream planning processes then screening is complete, and you should submit the completed Environmental and Social Screening Template (Annex A) to the PAC. If downstream implementation activities are also included in the project then continue to Question 4.

**TABLE 3.1 EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS**

Check appropriate box(es) below

1. Support for the elaboration or revision of global- level strategies, policies, plans, and programmes.

*For example, capacity development and support related to international negotiations and agreements. Other examples might include a global water governance project or a global MDG project.*

2. Support for the elaboration or revision of regional-level strategies, policies and plans, and programmes.

*For example, capacity development and support related to transboundary programmes and planning (river basin management, migration, international waters, energy development and access, climate change adaptation etc.).*

3. Support for the elaboration or revision of national-level strategies, policies, plans and programmes.

*For example, capacity development and support related to national development policies, plans, strategies and budgets, MDG-based plans and strategies (e.g. PRS/PRSPs, NAMAs), sector plans.*

4. Support for the elaboration or revision of sub-national/local-level strategies, policies, plans and programmes.

*For example, capacity development and support for district and local level*

**TABLE 3.1** EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS

Check appropriate box(es) below

*development plans and regulatory frameworks, urban plans, land use development plans, sector plans, provincial development plans, provision of services, investment funds, technical guidelines and methods, stakeholder engagement.*

**QUESTION 4:**

**Does the proposed project include the implementation of *downstream* activities that potentially pose environmental and social impacts or are vulnerable to environmental and social change?**

To answer this question, you should first complete Table 4.1 by selecting appropriate answers. If you answer “No” or “Not Applicable” to all questions in Table 4.1 then the answer to Question 4 is “NO.” If you answer “Yes” to any questions in Table 4.1 (even one “Yes” can indicated a significant issue that needs to be addressed through further review and management) then the answer to Question 4 is “YES”:

- **NO** → No further environmental and social review and management required for downstream activities. Complete Annex A.2 by selecting “Category 1”, and submit the Environmental and Social Screening Template to the PAC.
- YES** → Conduct the following steps to complete the screening process:
  1. Consult Section 8 of this Guidance, to determine the extent of further environmental and social review and management that might be required for the project.
  2. Revise the Project Document to incorporate environmental and social management measures. Where further environmental and social review and management activity cannot be undertaken prior to the PAC, a plan for undertaking such review and management activity within an acceptable period of time, post-PAC approval (e.g. as the first phase of the project) should be outlined in Annex A.2.
  3. Select “Category 3” in Annex A.2, and submit the completed Environmental and Social Screening Template (Annex A) and relevant documentation to the PAC.

**TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT**

1. Biodiversity and <u>Natural</u> Resources	<u>Answer</u> (Yes/No/Not Applicable)
1.1 Would the proposed project result in the conversion or degradation of <u>modified habitat</u> , <u>natural habitat</u> or <u>critical habitat</u> ?	No
1.2 Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?	No
1.3 Would the proposed project pose a risk of introducing invasive alien species?	No
1.4 Does the project involve natural forest harvesting or plantation development without an independent forest certification system for sustainable forest management (e.g. <u>PEFC</u> , the <u>Forest Stewardship Council</u> certification systems, or processes established or accepted by the relevant National Environmental Authority)?	No
1.5 Does the project involve the production and harvesting of fish populations or other aquatic species without an accepted system of independent certification to ensure sustainability (e.g. the <u>Marine Stewardship Council certification</u> system or certifications, standards, or processes established or accepted by the relevant National Environmental Authority)?	No
1.6 Does the project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction.</i>	No
1.7 Does the project pose a risk of degrading soils?	No
2. Pollution	<u>Answer</u> (Yes/No/Not Applicable)
2.1 Would the proposed project result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and <u>trans-boundary impacts</u> ?	No
2.2 Would the proposed project result in the generation of waste that cannot be recovered, reused, or disposed of in an <u>environmentally and socially sound manner</u> ?	No
2.3 Will the propose project involve the manufacture, trade, release, and/or use of chemicals and <u>hazardous materials</u> subject to international action bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international</i>	No

**TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT**

<i>conventions such as the <a href="#">Stockholm Convention on Persistent Organic Pollutants</a>, or the Montreal Protocol.</i>		
2.4	Is there a potential for the release, in the environment, of <a href="#">hazardous materials</a> resulting from their production, transportation, handling, storage and use for project activities?	<b>No</b>
2.5	Will the proposed project involve the application of pesticides that have a known negative effect on the environment or human health?	<b>No</b>
<b>3.</b>	<b>Climate Change</b>	<b><u>Answer</u> (Yes/No/Not Applicable)</b>
3.1	Will the proposed project result in significant <sup>135</sup> greenhouse gas emissions? <i>Annex E provides additional guidance for answering this question.</i>	<b>No</b>
3.2	Is the proposed project likely to directly or indirectly increase environmental and social <a href="#">vulnerability to climate change</a> now or in the future (also known as maladaptive practices)? You can refer to the additional guidance in Annex C to help you answer this question. <i>For example, a project that would involve indirectly removing mangroves from coastal zones or encouraging land use plans that would suggest building houses on floodplains could increase the surrounding population's vulnerability to climate change, specifically flooding.</i>	<b>No</b>
<b>4.</b>	<b>Social Equity and Equality</b>	<b><u>Answer</u> (Yes/No/Not Applicable)</b>
4.1	Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?	<b>Yes</b>
4.2	Is the project likely to significantly impact gender equality and women's empowerment <sup>136</sup> ?	<b>Yes</b>
4.3	Is the proposed project likely to directly or indirectly increase social inequalities now or in the future?	<b>No</b>
4.4	Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?	<b>Yes</b>
4.5	Have there been challenges in engaging women and other certain key	<b>No</b>

<sup>135</sup> Significant corresponds to CO<sub>2</sub> emissions greater than 100,000 tons per year (from both direct and indirect sources). Annex E provides additional guidance on calculating potential amounts of CO<sub>2</sub> emissions.

<sup>136</sup> Women are often more vulnerable than men to environmental degradation and resource scarcity. They typically have weaker and insecure rights to the resources they manage (especially land), and spend longer hours on collection of water, firewood, etc. (OECD, 2006). Women are also more often excluded from other social, economic, and political development processes.

**TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT**

	groups of stakeholders in the project design process?	
4.6	Will the project have specific human rights implications for vulnerable groups?	No
<b>5. Demographics</b>		<b><u>Answer</u></b> <b><u>(Yes/No/Not Applicable)</u></b>
5.1	Is the project likely to result in a substantial influx of people into the affected community (ies)?	No
5.2	Would the proposed project result in substantial voluntary or involuntary resettlement of populations? <i>For example, projects with environmental and social benefits (e.g. protected areas, climate change adaptation) that impact human settlements, and certain disadvantaged groups within these settlements in particular.</i>	No
5.3	Would the proposed project lead to significant population density increase which could affect the environmental and social sustainability of the project? <i>For example, a project aiming at financing tourism infrastructure in a specific area (e.g. coastal zone, mountain) could lead to significant population density increase which could have serious environmental and social impacts (e.g. destruction of the area's ecology, noise pollution, waste management problems, greater work burden on women).</i>	No
<b>6. Culture</b>		<b><u>Answer</u></b> <b><u>(Yes/No/Not Applicable)</u></b>
6.1	Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?	Yes
6.2	Will the proposed project result in physical interventions (during construction or implementation) that would affect areas that have known physical or cultural significance to indigenous groups and other communities with settled recognised cultural claims?	No
6.3	Would the proposed project produce a physical “splintering” of a community? <i>For example, through the construction of a road, power line, or dam that divides a community.</i>	No
<b>7. Health and Safety</b>		
7.1	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding	No

**TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT**

<p>or extreme climatic conditions? <i>For example, development projects located within a floodplain or landslide prone area.</i></p>	
<p>7.2 Will the project result in increased health risks as a result of a change in living and working conditions? In particular, will it have the potential to lead to an increase in HIV/AIDS infection?</p>	<b>No</b>
<p>7.3 Will the proposed project require additional health services including testing?</p>	<b>No</b>
<p><b>8. Socio-Economics</b></p>	<b><u>Answer</u> (Yes/No/Not Applicable)</b>
<p>8.1 Is the proposed project likely to have impacts that could affect women’s and men’s ability to use, develop and protect natural resources and other natural capital assets? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their development, livelihoods, and well-being?</i></p>	<b>Yes</b>
<p>8.2 Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?</p>	<b>Yes</b>
<p>8.3 Is the proposed project likely to negatively affect the income levels or employment opportunities of vulnerable groups?</p>	<b>No</b>
<p><b>9. Cumulative and/or Secondary Impacts</b></p>	<b><u>Answer</u> (Yes/No/Not Applicable)</b>
<p>9.1 Is the proposed project location subject to currently approved land use plans (e.g. roads, settlements) which could affect the environmental and social sustainability of the project? <i>For example, future plans for urban growth, industrial development, transportation infrastructure, etc.</i></p>	<b>No</b>
<p>9.2 Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate <b><u>cumulative impacts</u></b> with other known existing or planned activities in the area? <i>For example, a new road through forested land will generate direct environmental and social impacts through the cutting of forest and earthworks associated with construction and potential relocation of inhabitants. These are direct impacts. In addition, however, the new road would likely also bring new commercial and domestic development (houses, shops, businesses). In turn, these will generate indirect impacts. (Sometimes these are termed “secondary” or</i></p>	<b>No</b>

**TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT**

<p><i>“consequential” impacts). Or if there are similar developments planned in the same forested area then cumulative impacts need to be considered.</i></p>	
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a) ANNEX A.2: ENVIRONMENTAL AND SOCIAL SCREENING SUMMARY

(To be filled in after Annex A.1 has been completed)

**Name of Proposed Project: *Increasing Connectivity in the Central Forest Spine (CFS) Landscape – IC-CFS***

**A. Environmental and Social Screening Outcome**

Select from the following:

Category 1. No further action is needed

Category 2. Further review and management is needed. There are possible environmental and social benefits, impacts, and/or risks associated with the project (or specific project component), but these are predominantly indirect or very long-term and so extremely difficult or impossible to directly identify and assess.

Category 3. Further review and management is needed, and it is possible to identify these with a reasonable degree of certainty. If Category 3, select one or more of the following sub-categories:

Category 3a: Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice, but require some minimal or targeted further review and assessment to identify and evaluate whether there is a need for a full environmental and social assessment (in which case the project would move to Category 3b).

Category 3b: Impacts and risks may well be significant, and so full environmental and social assessment is required. In these cases, a scoping exercise will need to be conducted to identify the level and approach of assessment that is most appropriate.

**B. Environmental and Social Issues** (for projects requiring further environmental and social review and management)

In this section, you should list the key potential environmental and social issues raised by this project. This might include both environmental and social opportunities that could be seized on to strengthen the project, as well as risks that need to be managed. You should use the answers you provided in Table 4.1 as the basis for this summary, as well as any further review and management that is conducted.

The project's objective is to increase federal and state level capacity to execute the CFSMP through the strengthening of institutional and operational structures and the piloting of sustainable forest landscape management plans in three tiger-priority landscapes. Although the project, aims to maintain biodiversity and ecosystem services in the CFS, and support sustainable and inclusive development of local communities, the project may have social impacts that could affect people residing in the project target landscape. This report



identifies possible issues under the relevant questions in the above screening questions, in order to devise precautionary measures during the implementation.

**4.1. Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?**

The project would support implementation of the CFS Master Plan which would involve zoning several areas as wildlife corridors. Some of these areas are presently occupied by several tribes of *Orang Asli*, the indigenous people of Peninsular Malaysia. During the community consultation sessions, which were held at all the demonstration sites during the PPG, a significant amount of human wildlife conflict was reported. The communities are concerned that to designate their land as wildlife corridors would result in increased conflict.

**4.2. Is the project likely to significantly impact gender equality and women's empowerment?**

Yes, the Project will impact gender equality and women's empowerment, in a positive manner. First, one of the CBOs which the Project will establish will be based on handicrafts, which is currently an activity carried out primarily by women. The establishment of the CBO, strengthening of market linkages and supply chains, and capacity building for activities such as value-addition of products, accounting and CBO management will significantly increase both the knowledge and skills of the women and the revenue generated by these activities. This will encourage women's empowerment and encourage gender equality. The ecotourism CBO will also encourage the involvement of women, providing the same benefits.

Apart from the above activity specifically aimed at women's empowerment, there will be many project activities involving stakeholder participation, including at a management level (for example, membership of the Landscape Management Planning Committee), and equal representation of each gender in these activities will be strongly encouraged.

**4.4. Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?**

Yes, the Project will have variable impacts on women and men, different ethnic groups and social classes. Both women and men will be positively impacted by the Project; however, as mentioned above, the CBO activities will be targeted significantly at women, and therefore will encourage women's socio-economic development to a relatively greater degree than for men. In addition, all CBO activities will involve *Orang Asli* groups only, since these are marginalised, poverty-stricken communities; these activities will therefore have a greater impact on them than on non-indigenous groups. However, other outputs such as the community-based monitoring networks, establishment of the Landscape Management Planning Committee and involvement in human-wildlife conflict mitigation measures, etc. will involve both indigenous and non-indigenous groups. *The Orang Asli* are considered of a lower social class than non-indigenous groups; therefore the Project will have the same impact in this regard.

**6.1. Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?**

Yes, the Project will significantly affect the cultural traditions of affected communities. In those areas to be allocated to conservation, such as the 20,000 ha critical forest corridor to be gazetted, traditional resource use will be restricted.

**8.1. Is the proposed project likely to have impacts that could affect women’s and men’s ability to use, develop and protect natural resources and other natural capital assets?**

Implementation of the CFS Master Plan is likely to have impacts that could affect local peoples’ ability to use and develop natural resources: the project would support the CFS Master Plan which recommends the creation of new forest reserves and may restrict peoples’ access to natural resources.

**8.2. Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?**

Yes, the proposed project is likely to significantly affect land tenure arrangements, particularly traditional cultural ownership patterns. In most cases the affect will be for the benefit of the community, through increased potential for co-management, generated through their involvement in landscape management planning, the establishment of CBOs based on natural resources, and their involvement in monitoring activities and in planning of human-wildlife conflict mitigation measures. However, the project would support the CFS Master Plan which would involve the creation of new reserves. The present stated policies of government agencies such as the National Forestry Policy 1978 (revised in 1992) and the National Land Code 1965 does recognise traditional cultural ownership patterns; however, the land tenure arrangements of local communities, particularly those with traditional ownership, are not explicitly taken into consideration in the official process of constitution of new reserves.

**C. Next Steps** (for projects requiring further environmental and social review and management):

In this section, you should summarise actions that will be taken to deal with the above-listed issues. If your project has Category 2 or 3 components, then appropriate next steps will likely involve further environmental and social review and management, and the outcomes of this work should also be summarised here. Relevant guidance should be obtained from Section 7 for Category 2 and Section 8 for Category 3.

In order to mitigate unintended negative social impacts from project’s on-site activities, the following measures will be taken during the project implementation.

**4.1. Environmental and social impacts that could affect indigenous people or other vulnerable groups:**

The Project will carry our Free Prior Informed Consent (FPIC) exercise at the beginning of the detailed planning of local level interventions. The Project will invest significantly in human-wildlife conflict mitigation measures. First, it will review current elephant translocation plans and development plans to ensure the prevention of any overpopulations of elephants. It will strengthen DWNP response mechanisms to human-wildlife conflict incidences and improve communications between communities and DWNP so that the most

appropriate and effective measures against human-wildlife conflict incidences are consistently taken. It will implement the Tiger Challenge competition scheme, whereby communities will be involved in developing mitigation measures on a competitive basis, with funding directed towards implementing the most effective measures put forward.

The Project will also establish CBOs and enhance the income generation potential of livelihood activities based on natural resources (handicrafts and ecotourism), which will mean that the allocation of these wildlife corridors will have positive impacts on community livelihoods through the improvement in wildlife and habitat conditions. Through their involvement in CBOs as well as in monitoring of wildlife and forestry crime and participation in landscape management planning, steps will be taken to prove indigenous people's capacity for community-based natural resource management which will improve their social status.

#### **4.2. Significant impact on gender equality and women's empowerment:**

This impact will encourage gender equality and women's empowerment; therefore there is no risk to mitigate. As a precautionary measure, the project will ensure women's representation in FPIC exercises, and develop gender disaggregated reporting.

#### **4.4. Variable impacts on women and men, different ethnic groups, social classes:**

This impact will encourage the equalisation of gender, ethnic groups and social classes; therefore there is no risk to mitigate. As a precautionary measure, the project will ensure representation of different ethnic groups and women in FPIC exercises, and develop gender disaggregated reporting.

#### **6.1. Significant effects on the cultural traditions of affected communities, including gender-based roles:**

Through taking measures to enhance the income generation potential and sustainability of cultural traditions (such as the use of natural resources for producing handicrafts) where resource harvesting is permitted (which will be in the majority of areas), the Project's activities will have an overall positive effect on cultural traditions.



#### **8.1. Impacts that could affect women's and men's ability to use, develop and protect natural resources and other natural capital assets:**

The Project's strategy is to encourage sustainable use of natural resources. To achieve this, all stakeholders will be involved in the development of sustainable landscape management plans and capacity will be developed (within both genders) for their implementation, thereby increasing women's and men's ability to use, develop and protect natural resources and capital assets. To compensate for the restriction of resource use in certain key areas for connectivity, use of natural resources in other areas (the majority of areas) will be enhanced in terms of income generation and sustainability, thereby increasing benefits. As part of the management plans, Payments for Ecosystem Services schemes will be developed, encouraging community-based protection of their natural resources. In addition, capacity will be developed specifically for community-level monitoring of wildlife and forestry crime, thereby increasing women's and men's ability to protect natural resources. In all these

actions, both women's and men's ability and roles in society will be carefully looked at to ensure neither group will be adversely affected by the project support overall.

**8.2. Significant effects on land tenure arrangements and/or traditional cultural ownership patterns:**

The project will take particular measures to avoid any adverse effects on local communities resulting from changes in resource ownership patterns (through increasing income generation potential from natural resources elsewhere); it will not support the resettlement of local communities.

<b><u>D. Sign Off</u></b>	
<b>Project Manager</b>	<b>Date</b>
 <b>Asfaazam Kasbani</b> Assistant Resident Representative Environment & Energy UNDP Malaysia	<b>Date</b> 21/11/13
 <b>Han Ramalu Ragavan</b> Programme Manager (Energy & Environment) UNDP Malaysia	<b>Date</b> 21/11/13

## **Annex VI. Community Consultation Attendance Record**

- In separate file -

## **Annex VII. Tracking Tools**

- In separate file -

## Annex VIII. UNDP Project Cycle Management Services

Stage	Country Office <sup>137</sup>	UNDP/GEF at regional and global level
<b>Project Oversight</b>	<i>Management Oversight and support</i>	<i>Technical and SOF Oversight and support</i>
	<i>Project Launch/Inception Workshop</i> <ul style="list-style-type: none"> <li>• Preparation and coordination.</li> <li>• Participate in Inception Workshop</li> </ul>	RTA role: <ul style="list-style-type: none"> <li>• Technical support in preparing TOR and verifying expertise for technical positions.</li> <li>• Participate in recruitment process for Chief Technical Advisor and/or Project Manager, if RTA elects to do so.</li> <li>• Verification of technical validity / match with SOF expectations of inception report.</li> <li>• Participate in Inception Workshop</li> </ul>
	<i>Management arrangements:</i> <ul style="list-style-type: none"> <li>• Facilitate consolidation of the Project Management Unit, where relevant.</li> <li>• Facilitate and support Project Board meetings as outlined in project document and agreed with UNDP RTA.</li> <li>• Provide project assurance role if specified in project document.</li> <li>• Ensure completion of timesheets as required.</li> </ul>	RTA role: <ul style="list-style-type: none"> <li>• Technical input and support to TOR development. Troubleshooting support.</li> <li>• Support in sourcing of potentially suitable candidates and subsequent review of CVs/recruitment process.</li> </ul>
	<i>Annual Work Plan:</i> <ul style="list-style-type: none"> <li>• Issuance of AWP.</li> <li>• Monitor implementation of the annual work plan and timetable.</li> </ul>	RTA and PA role: <ul style="list-style-type: none"> <li>• Advisory services as required</li> <li>• Review AWP, and clear for ASL where relevant.</li> </ul>
	<i>Financial management:</i> <ul style="list-style-type: none"> <li>• Conduct budget revisions, verify expenditures, advance funds, issue combined delivery reports, and ensure no over-expenditure of budget.</li> <li>• Ensure necessary audits.</li> </ul>	RTA, PA and Finance Unit roles: <ul style="list-style-type: none"> <li>• Allocation of ASLs, based on cleared AWP</li> <li>• Return of unspent funds to donor</li> <li>• Monitor projects to ensure activities funded by donor comply with agreements and project document</li> <li>• Oversight and monitoring to ensure financial transparency and clear reporting to the donor</li> </ul>

<sup>137</sup> As per UNDP POPP with additional SOF requirements where relevant.

Stage	Country Office <sup>137</sup>	UNDP/GEF at regional and global level
	<p><i>Results Management:</i></p> <ul style="list-style-type: none"> <li>• Alignment: link project output to CPAP Outcome in project tree in Atlas, link CPAP outcome in project tree to UNDP Strategic Key Result Area as outlined in project document during UNDP work planning Gender: In ATLAS, rate each output on a scale of 0-3 for gender relevance.</li> <li>• UNDP monitoring requirements: Monitor progress on quarterly basis in IWP, and monitor risks in Atlas.</li> <li>• Submit annual APR/PIR report.</li> <li>• Arrange mid-term review: prepare TOR, hire personnel, plan and facilitate mission / meetings / debriefing, circulate draft and final reports.</li> <li>• Submit GEF Focal Area Tracking Tool completed by Project Team to mid-term review team.</li> <li>• Ensure tracking of committed and actual co financing as part of mid-term review.</li> <li>• Ensure translation of mid-term review into English.</li> <li>• Prepare management response to mid-term review.</li> <li>• Annual site visits – at least one site visit per year, report to be circulated no later than 2 weeks after visit completion.</li> </ul>	<p>RTA role:</p> <ul style="list-style-type: none"> <li>• Advisory services as required.</li> <li>• Quality assurance.</li> <li>• Project visits – technical support visit during life of Project as required.</li> </ul>
	<p><i>Evaluation:</i></p> <ul style="list-style-type: none"> <li>• Integrate project terminal evaluation into CO evaluation plan. Identify synergies with country outcome evaluations.</li> <li>• Arrange terminal evaluation: prepare TOR, hire personnel, plan and facilitate mission / meetings / debriefing, circulate draft and final reports.</li> <li>• Submit GEF Focal Area Tracking Tool completed by Project Team to evaluation team.</li> <li>• Ensure tracking of committed and actual co financing as part of terminal evaluation.</li> <li>• Ensure translation of terminal evaluation into English.</li> <li>• Prepare management response to terminal evaluation and post both terminal evaluation report and management response in UNDP ERC.</li> <li>• Facilitate and participate in other UNDP and GEF evaluations as necessary.</li> </ul>	<p>RTA, PA, RKS roles:</p> <ul style="list-style-type: none"> <li>• Technical support and analysis.</li> <li>• Quality assurance.</li> <li>• Compilation of lessons and consolidation of learning.</li> <li>• Dissemination of technical findings.</li> <li>• Participate as necessary in other SOF evaluations.</li> </ul>
	<p><i>Project Closure:</i></p> <ul style="list-style-type: none"> <li>• Final budget revision and financial closure (within 12 months after operational completion).</li> <li>• Final reports as required by donor and/or UNDP-GEF.</li> </ul>	<p>RTA, PA role:</p> <ul style="list-style-type: none"> <li>• Advisory services as required.</li> <li>• Technical input.</li> <li>• Quality assurance.</li> </ul>