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Country: THAILAND



PROJECT DOCUMENT

Project Title:	Strengthening Capacity and Incentives for Wildlife Conservation in the Western Forest Complex
UNPAF (2012-2016) Outcome(s) and Outputs:	Goal: <i>National development processes enhanced towards climate resilience and environmental sustainability</i> Outcome 1: <i>Climate change adaptation mainstreamed by the key line ministries into their sectoral and provincial plans, policies and budgets</i>
Executing Entity/ Implementing Partner:	Department of National Parks, Wildlife and Plant Conservation (DNP)- Wildlife Conservation Office (WSO) and Ministry of Natural Resources and Environment (MONRE)
Implementing Entity/ Responsible Partner:	DNP-WCO and UNDP

Agreed by (National Economic Development Agency):

Agreed by (Department of Environment and Natural Resources):

Agreed by (Department of National Parks, Wildlife, and Plant Conservation):

MR. NIPON CHOTIBAL, Director-General

Date/Month/Year

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Date/Month/Year

Brief Description

Situated at the core of the Western Forest Complex (WEFCOM), the Huai Kha Khaeng-Thung Yai Naresuan World Heritage Site (HKK-TY WHS) consists of three contiguous Wildlife Sanctuaries: the Huai Kha Khang (HKK); the Thung Yai Naresuan East (TYE); and the Thung Yai Naresuan West (TYW). Totalling an area of 6,427 km², the largely intact forest habitats of the HKK-TY WHS provide a protected refuge for approximately half of Thailand's tiger population.

There are no villages within the HKK, but there are 14 formally recognised enclave villages within the TYW (7 villages) and TYE (7 villages). There are further villages, together with mixed forest-agriculture, in a 5km buffer around the HKK-TY WHS with a particular concentration to the east of HKK where there is an estimated 29 villages. Many of the villagers living in the enclave and buffer villages are dependent on the use of forest resources

The most significant threats to tiger survival in and around the HKK-TY WHS includes: i) habitat degradation and fragmentation; ii) poaching of the prey that tiger depend on; and iii) poaching of the tigers themselves. These threats are further exacerbated by limited capacity and insufficient resources to effectively plan and administer the wildlife sanctuaries, and limited working relationships with enclave and buffer communities.

The project has been organised into *three components*, and will be implemented over a period of five years.

The first component of the project is directed towards strengthening and scaling up existing best-practice management activities, and developing and testing innovative approaches to enforcement and compliance, in the HKK-TYN WHS. It will strive to reduce the direct threats to tigers and prey, improve effectiveness of wildlife sanctuary management, and enhance the use of data and information to support key management decision-making.

The second component of the project is focused on linking sustainable livelihood development in the enclave and buffer zone villages with specific conservation outcomes, and improving economic links between the buffer zone and enclave villages and the Wildlife Sanctuaries. It will seek to achieve these linkages by

TABLE OF CONTENTS

TABLE OF CONTENTS	3
ACRONYMS AND ABBREVIATIONS.....	4
SECTION I: ELABORATION OF THE NARRATIVE	7
PART 1: SITUATIONAL ANALYSIS	7
Context and Global Significance	7
Threats, Root Causes and Impacts	18
The Long-Term Solution and Barriers to Achieving the Solution	20
Baseline Analysis.....	23
Stakeholder Analysis	27
PART II: STRATEGY	30
Project Rationale and Conformity	30
Project Objective, Outcomes and Outputs/Activities	33
Key Indicators, Risks and Assumptions	41
Incremental Reasoning and Expected Global, National and Local Benefits	43
Cost Effectiveness.....	45
Sustainability and Replicability	46
PART III: MANAGEMENT ARRANGEMENTS	48
Project Implementation Arrangement.....	48
Financial and other procedures	50
Audit Clause	50
PART IV: MONITORING AND EVALUATION FRAMEWORK.....	51
Monitoring and reporting	51
Monitoring and Evaluation Budget and Work Plan.....	53
PART V: LEGAL CONTEXT	55
 SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF)	 56

ACRONYMS AND ABBREVIATIONS

ALRO	Agricultural Land Reform Office
APR	Annual Project Report
AWP	Annual Work Plan
BAAC	Bank for Agriculture and Agricultural Co-operatives
BPP	Border Patrol Police
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CBO	Community Based Organisation
CC	Climate Change
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CO ₂ e	Carbon dioxide equivalent
COP	Convention of Parties
CPAP	Country Programme Action Plan
DNP	Department of National Parks, Wildlife and Plant Conservation
FAO	Food and Agricultural Organisation
FCPF	Forest Carbon Partnership Facility
FIO	Forestry Industry Organisation
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographical Information System
GMS-FBP	Greater Mekong Sub-region- Forest and Biodiversity Program
GTI	Global Tiger Initiative
GTRP	Global Tiger Recovery Programme
HKK	Huai Kha Khaeng Wildlife Sanctuary
HKK-TY	Huai Kha Khaeng and Thung Yai Naresuan (Wildlife Sanctuaries)
IFMP	Integrated Fire Management Plan
IRR	Internal Rate of Return
IRRRA	Internal Rate of Return Risk Analysis
IUCN	International Union for Conservation of Nature
KNRWRS	Khao Nang Ram Wildlife Research Station
Lao PDR	Lao People's Democratic Republic (informally also called Laos)
LiDAR	Light Detection and Ranging
LOA	Letter of Agreement
LULUCF	Land Use, Land Use Change and Forestry
MOAC	Ministry of Agriculture and Cooperatives
M&E	Monitoring and Evaluation
METT	Management Effectiveness Tracking Tool
MOI	Ministry of the Interior
MIST	Spatial Management Information System
MONRE	Ministry of Natural Resources and Environment
MoU	Memorandum of Understanding
MRV	Measuring, Reporting and Verification
MOTS	Ministry of Tourism and Sport

NESDP	National Economic and Social Development Plan
NFR	National Forest Reserve
NGO	Non-Government Organization
NIM	National Implementation Modality
NP	National Park
NTFP	Non-Timber Forest Product
NTRP	National Tiger Recovery Programme
ONEP	Office of Natural Resources and Environmental Policy and Planning
PA	Protected Area
PAA	Project Administrative Assistant
PAC	Protected Area Committee
PAO	Provincial Administrative Organisation
PB	Project Board
PCF	Provincial Conservation Forums
PD	Project Director
PIR	Project Implementation Review
PM	Project Manager
RAMSAR	Convention on Wetlands of International Importance
REDD+	Reducing Emissions from Deforestation and Forest Degradation (in developing countries) + Conservation, Sustainable Forest Management, and Enhancement of Forest Carbon Stocks
RFD	Royal Forestry Department
R-PP	Readiness Preparation Proposal
RTA	(UNDP) Regional Technical Advisor
RTG	Royal Thai Government
RTP	Royal Thai Police
SBAA	Standard Basic Assistance Agreement
SFM	Sustainable Forest Management
SMART	Spatial Monitoring and Reporting Tool
TAO	Tambon Administrative Organisation
TGO	Thailand Greenhouse Gas Organisation
TEV	Total Economic Valuation
TRC	Tiger Range Country
TREEMAPS	Tracking Reductions in Emissions through Enhanced Mapping and Project Support
TTAP	Thailand Tiger Action Plan (2010-2020)
TYE	Thung Yai Naresuan East Wildlife Sanctuary
TYW	Thung Yai Naresuan West Wildlife Sanctuary
UN	United Nations
UNDP	United Nations Development Programme
UNDP CO	UNDP Country Office
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
WCO	Wildlife Conservation Office
WCU	Wildlife Crime Units
WCS	Wildlife Conservation Society
WEFCON	Western Forest Complex

WHC	World Heritage Convention
WHS	World Heritage Site
WIFOS	Wildlife Forensics Science Unit
WPM	Wildlife Premium Mechanism
WS	Wildlife Sanctuary
WWF	World Wide Fund for Nature

SECTION I: ELABORATION OF THE NARRATIVE

PART 1: SITUATIONAL ANALYSIS

Context and Global Significance

Context

1. Thailand is situated in mainland south-eastern Asia between latitudes 5°35' and 20°25' N, and longitudes 97°20' and 105°40' E. Most of the country lies in the Indo-Chinese Peninsula but its southern portion extends into the Malay Peninsula where it borders on the Andaman Sea to the southwest and the Gulf of Thailand to the south and east. To the south Thailand borders on Malaysia, to the north and west is Myanmar, to the east is Lao PDR and Cambodia lies to the southeast of the country. The surface area of Thailand is 513,100 km² and it has 8,082 km of border, of which 3,219 km is coastline (see Map 1 below). The highest point, Doi Inthanon, is in the northwest at 2,576m.



Map 1. The K

outh east Asia

2. The Kingdom of Thailand is a constitutional monarchy currently ruled by a military junta which took power in May 2014. The administrative capital of Thailand, and also the largest commercial centre, is Bangkok. The population of the country is approximately 68 million with a per capita GDP of around US\$9,000 (when adjusted by purchasing power parity). Administratively the country is divided into 76 provinces. Each province is divided into districts. Local government consists of two types, ordinary (municipalities and administrative organisations) and special (City/Metropolitan administrations).

3. There are four dominant terrains in Thailand: (i) the mountainous areas found largely to the north and west of the country; (ii) the central and eastern Khorat Plateau which extends up to the Mekong River in the north; (iii) the lowlands of the south and on the peninsula; and (iv) the marine and coastal environment. There are two dominant river systems in Thailand: the Chao Phraya river flows from north to south from between the western and central mountains to the Gulf of Thailand near Bangkok; and the Mekong river which also flows north-south, but which hugs the eastern boundary of Thailand and flows along much of the border with Lao People's Democratic Republic (Lao PDR).

4. Thailand's biodiversity has high global significance and it is one of the most biodiverse countries in the world. With a hot tropical climate, over 35% (approximately 190,000 km²) of the country is forested. The forest types range from rainforest to evergreen and deciduous forests to savanna and mangroves in the coastal waters. The country's topographical diversity together with the forests and the marine, coastal and island regions are important contributors to the country's biodiversity. Significant portions of eight WWF Ecoregions fall within Thailand, including: Northern Indochina Subtropical Moist Forests; Kayah-Karen/Tenasserim Moist Forests; Peninsular Malaysian Lowland and Mountain Forests; and Cardamom Mountains Moist Forests.

5. Nine percent of all species known to science are found in the country¹. Thailand has approximately 15,000 plant species, roughly 8% of the global total; 290 mammal species, of which six are endemic; over 900 bird species; approximately 320 reptile species; and 120 amphibians. Thailand has recorded 7 endemic mammal species, 2 bird species, 47 reptile species, 7 amphibians, 72 fish species and 757 plant species. Aquatic biodiversity is as notable as its terrestrial counterpart. There are over 11,900 marine invertebrate species, approximately 2,000 marine fish species and 606 fresh water fish. There is also important diversity associated with the country's coral reefs.

6. Levels of endemism are high, with more than 100 endemic animal species and over 700 endemic plant species found in Thailand². Levels of threat are also high as indicated by the IUCN's Red List which notes that Thailand has over 1,700 globally threatened species, including a number of Critically Endangered species. The list of Critically Endangered species contains 13 mammal, 43 bird, 11 reptile, 18 fish and 20 plant species.

Thailand's Protected Area System

7. Thailand's protected area (PA) system was initiated in the 1960's and consists of 379 formally recognised protected areas (including those established by Royal Decree) which cover a total area of 11,589,718 hectares. These protected areas, some of which are contiguous with each other, account for approximately 18% of Thailand's total land area as well as 8% of its territorial seas. In addition there are botanical gardens, arboreta, watersheds and mangrove forests which are widely regarded as conservation areas and fall under the authority of the Department of National Parks Wildlife and Plant Conservation (DNP) but are not recorded as part of the PA system.

¹ Bugna, Sahlee and Giacomo Rambaldi. 2001. *A Review of the Protected Area System of Thailand*. Biodiversity. July – September 2001 pp 1-5.

² IUCN Red List, Thailand

8. Each of the formally recognised protected area falls into one of four protected area types (see Table 1): i) National Park (both terrestrial and marine), ii) Wildlife Sanctuary, iii) Forest Park or iv) Non-hunting Area. In addition, Botanical Gardens, Aboretums, Watersheds and Mangroves (see Table 2) are recognised as areas that have a conservation function, but are not included in the formal PA system³.

Table 1: Summary information for Thailand's Protected Areas (data as of 2008)

Type of PA	Number	Area (ha)	IUCN Category	Management Authority	Enabling Legislation
National Park (incl. Marine)	148	7,290,858	II	National Parks Division, DNP	National Parks Act of 1961
Wildlife Sanctuary	60	3,689,609	II	Wildlife Conservation Division, DNP	Wildlife Protection and Preservation Act of 1960
Forest Parks	112	123,879	III	National Parks Division or Regional Forest Offices	National Reserve Forest Act of 1964
Non-hunting Areas	59	485,372	IV or VI	Wildlife Conservation Division, DNP	National Reserve Forest Act of 1964
TOTAL	379	11,589,718			

Table 2: Summary information for Botanical Gardens, Arboreta, Watersheds and Mangroves

Type of conservation area	Number	Approximate area (ha) ⁴	IUCN Category	Management Authority
Botanical Garden	15	5,896	VI	DNP
Arboreta	54	3,608	VI	DNP
Watersheds	-	9,309,000	I, II, IV & VI	DNP
Mangroves	-	4,280,000	VI	DNP

9. Although most of the major habitats have been included in the protected area system in Thailand⁵, there remain some gaps in coverage. In particular, under-represented areas include marshes, mangroves, mudflats, peat swamp forest, monsoonal evergreen forest, mixed dipterocarp forest and heathlands. There is a process of ensuring that these habitats are more appropriately represented in the PA system, but more still needs to be done in this regard.

10. The protected areas of Thailand are important resources for the livelihoods of rural peoples, with approximately one-third of Thailand's rural village population living close to, or within, a protected area. Many of these villagers are dependent on the extraction of natural resources - particularly non-timber forest products - to both supplement their income as well as to provide for their direct household needs.

³ Due to overlaps that exist between protected areas (land units) and their classifications the total areas of these groups are not presented. Some of these areas incorporate RAMSAR sites (10) as well as World Heritage Sites (2) and UNESCO Biosphere Reserves (4).

⁴ See Note 3 above for explanation of why the areas are approximate for Watersheds and Mangroves

⁵ Trisurat, Y. 2006. Applying gap analysis and a comparison index to evaluate protected areas in Thailand. *Environmental Management* 39: 235-245. Springer.

The Project Site: *Huai Kha Khaeng-Thung Yai (HKK-TY) World Heritage Site (WHS)* and its buffer areas

11. Situated in western Thailand - along the Tranao Sri Mountain Range, and near the Myanmar border - the Western Forest Complex (WEFCOM) is the largest tract of intact forest remaining in Southeast Asia. It comprises seventeen forest regions (covering an area of 18,700km²); its boundaries extend through five provinces (Kanchanaburi, Supanburi, Uthaitani, Kampaengpet, and Tak); and it encompasses seven National Parks (Khao Laem NP; Khaoen Sri Nakerin NP; Erawan NP; Khlong Lan NP; Mae Wong NP; Klong Wang Chao NP; and Sai Yok NP), five Wildlife Sanctuaries (Umphang WS; Huai Kha Khaeng WS; East Thung Yai Naresuan WS; West Thung Yai Naresuan WS; and Salakpra WS) and three areas proposed for future designation as National Parks (see Map 2 below).

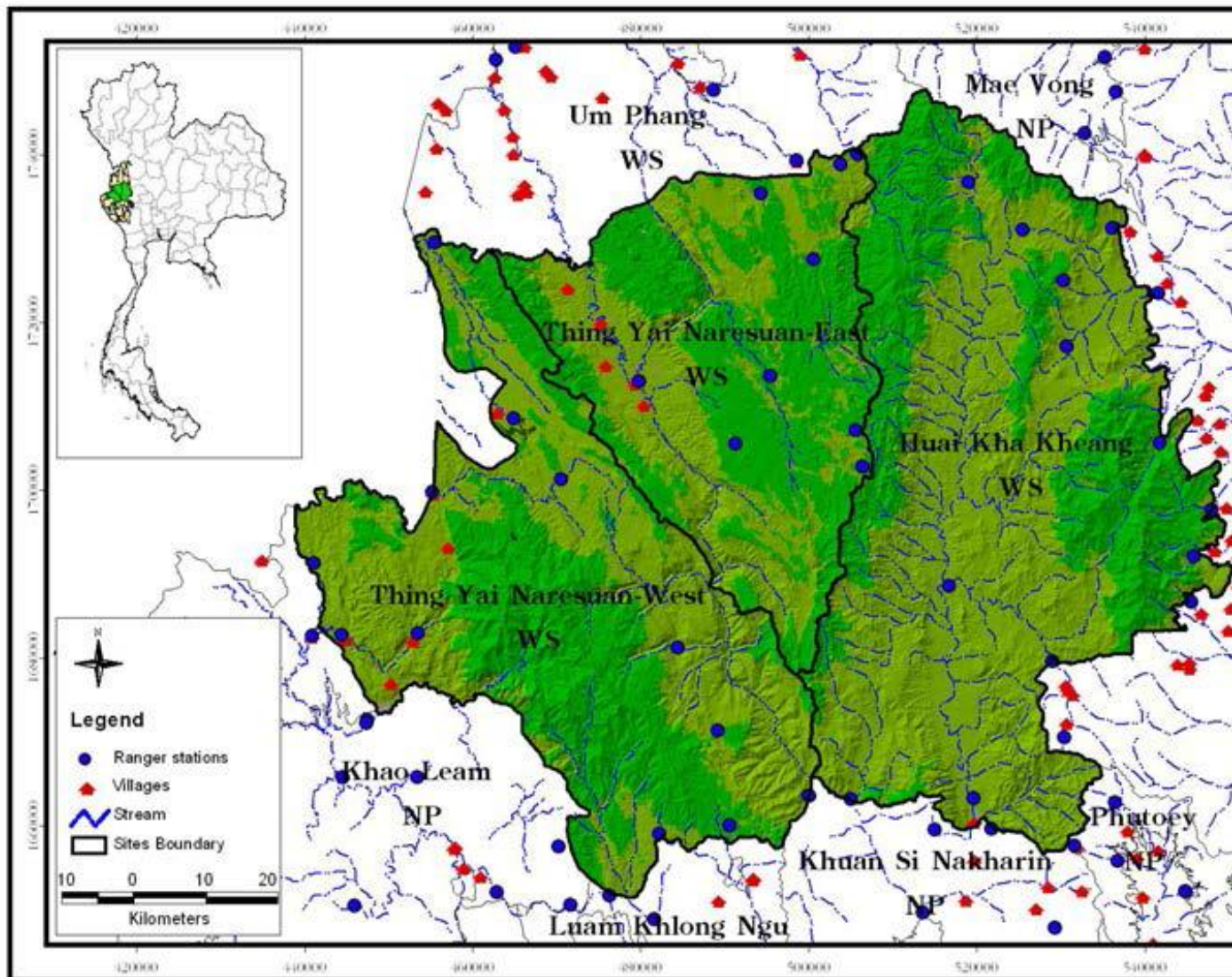


Map 2: Location of the protected areas (existing and proposed) in the Western Forest Complex (WEFCOM) in Thailand

12. Situated at the core of the WEFCON - and spanning portions of the Uthai Thani, Tak and Kanchanaburi provinces - the Huai Kha Khaeng-Thung Yai Naresuan (HKK-TY) World Heritage Site (WHS)

consists of three contiguous Wildlife Sanctuaries: the Huai Kha Khang sanctuary (HKK); the Thung Yai Naresuan East (TYE) WS; and the Thung Yai Naresuan West (TYW) WS.

Map



13. Total
World
TY WH

14. Current
Wildlife Conservation Division) to visit the area.

15. The HKK-TY WHS is spread over a hilly terrain, ranging from 250m to 1,678m in height above sea level. The WHS is the main catchment area of the Huai Kha Khaeng River which flows through the area and gave the HKK WS its name. The fertile red-brown earth is derived from limestone and predominates in the upland areas and the Mae Chan Valley. One major feature is the presence of natural mineral licks for the animals, most occurring around the granite intrusions which may be associated with massive faults or lineaments in the area's natural geology. As the area is limestone, sinkholes are common. Smaller ones are about 20m wide but others stretch for 2km in length and are as much as 30m deep. There are many small lakes, ponds and swamp areas, some of which dry up during the dry season (from November to April). The permanent water sources provide sufficient resources for the wildlife and fauna. The monsoon climate sees heavy rains during September and October each year and the annual rainfall is about 1,700mm. The climate ranges from tropical to sub-tropical with temperatures ranging from 10°C min. to 28°C max. in December and 20°C min. to 37°C max. in May.

16. The HKK-TY WHS's importance as a conservation area is in part based on the heterogeneity and relative integrity of its habitats, the diversity of its flora and fauna, and the complexity of its ecosystems. Although relatively unexplored from a botanical perspective, the biogeographical position of the area - at the interface between the southern ridges of the eastern Himalayas and the equatorial forests - has resulted in botanical associations found nowhere else, with many plant species of exclusively Sino-Himalayan, Sundaic, Indo-Burmese, and Indo-Chinese affinities intermingling.

17. Montane Evergreen forests cover about 15% of the HKK-TY WHS and occur along the mountain ridges above 1,000 m where moisture levels are high. Seasonal or Dry Evergreen forests occupy approximately 30% of the WHS, predominantly on the sloping land lying between 800 and 1,000 metres elevation. Below 800 m elevation, Gallery Evergreen forests occur along permanent watercourses, where humidity is high and the soil is perpetually moist. The dominant forest type in the lower lying regions - Mixed Deciduous forest - covers about 45% of the total area. Other vegetation types which occupy small areas of the WHS include the rare Dry Dipterocarp forest ($\pm 1\%$ of the area) and Savanna forest and Grassland ($\pm 4\%$ of the area)⁶.

18. The fauna found within the HKK-TY WHS includes an unusual mix of species with Indo-Chinese, Indo-Burmese and Sino-Himalayan affinities. In total, the area supports a large proportion of Thailand's animals, including 67 species of mammal (of Thailand's 265 total mammal species). Most importantly these include three of the National Reserved Wildlife Species of Thailand: the wild water buffalo (*Bubalus arnee*), the mainland serow (*Capricornis sumatraensis*) and the hog deer (*Cervus porcinus*). The only herd of water buffalo in Thailand is found in the southern area of the WHS. Other threatened animals include: the Asiatic wild dog (*Cuon alpinus*); tiger (*Panthera tigris*); leopard (*Panthera pardus*); clouded leopard (*Neofelis nebulosa*); Asian elephant (*Elephas maximus*), estimated to number just 150-200 animals; Asian tapir (*Tapirus indicus*) and Fea's muntjac (*Muntiacus fea*). The Thailand brow-antlered deer (*Cervus eldi siamensis*) was last seen in the area in 1965. Gaur and banteng are still fairly common, although they have become increasingly threatened by poaching elsewhere in Thailand. Two species of otter, macaques, the silver leaf monkey, Phayre's leaf monkey and the white-handed gibbon also inhabit the area.

19. Of particular importance to this project is that the HKK-TY WHS provides habitat and sanctuary for approximately half of Thailand's tiger population. It is estimated that 65 to 70 tigers remain in HKK WS and around 40 in TYE and TYW.⁷ It has been estimated that the WHS could potentially support a tiger population of approximately 500 tigers if there was a sufficient prey base and tiger poaching was eliminated⁸.

20. Thailand has 900 species of birds, 355 of which are found in the HKK-TY WHS, although many are now considered rare. These include the green peafowl, Kalij pheasant, Burmese peacock-pheasant, rufous-necked hornbill and white-winged wooduck. Some of the last viable populations of riparian bird species can be found here including the lesser fishing eagle, red-headed vulture and crested kingfisher. Toads, frogs, reptiles and amphibians have been recorded, along with 113 species of freshwater fish.

21. There are no villages within the HKK WS, but there are 14 formally recognised enclave villages within the TYW (7 villages) and TYE (7 villages). Residents of these villages have acquired the right to live within the wildlife sanctuaries as their villages were established at the time that the sanctuaries were gazetted.

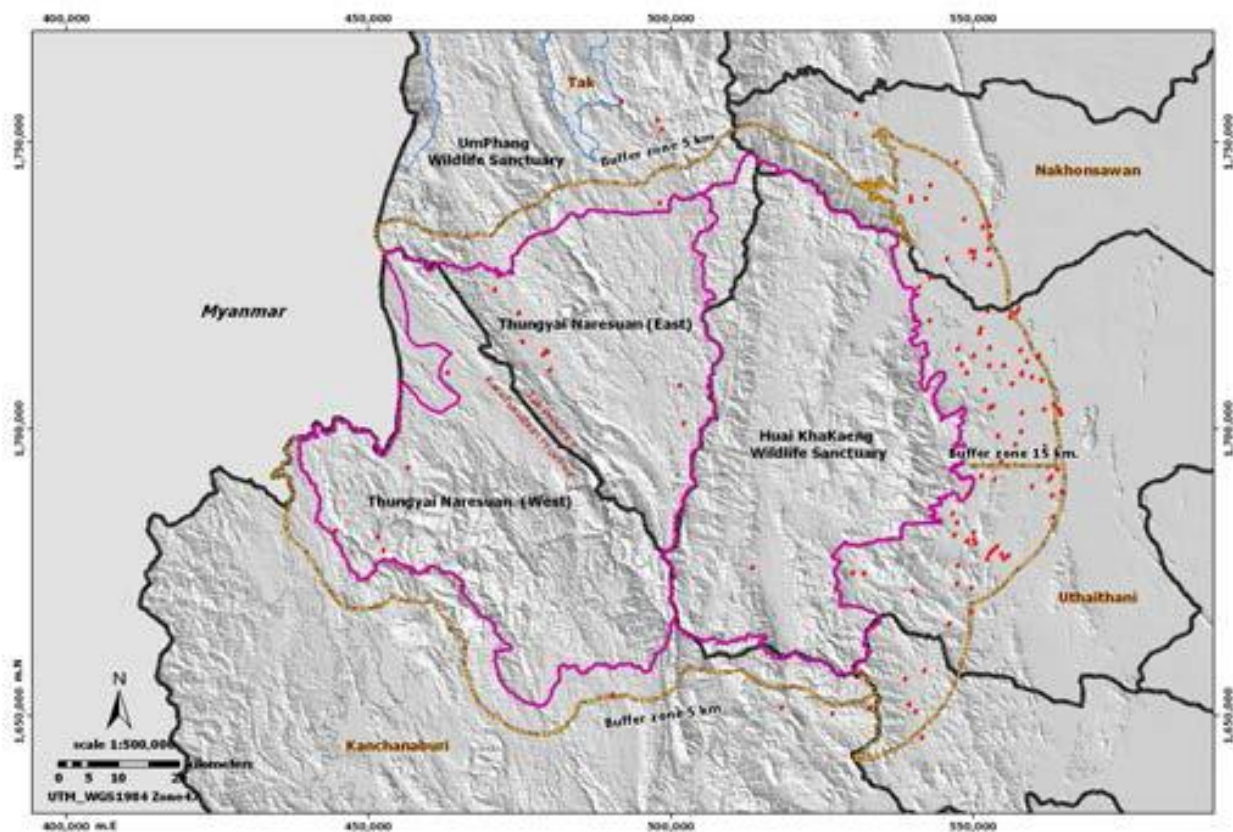
22. There are further villages, together with mixed forest-agriculture, in a 5km buffer around the HKK-TY WHS with a particular concentration to the east of HKK where there is an estimated 29 villages. These villagers are dependent on the use of forest resources, and many have a historical use rights to access these resources.

⁶ Seub Nakhasathien, Stewart-Cox, Belinda (1990). *Nomination of the Thung Yai - Huai Kha Khaeng Wildlife Sanctuary to be UNESCO World Heritage Site*. Bangkok: Royal Forest Department

⁷ Reference: Thailand-Tiger Action Plan (TTAP)

⁸ Reference: Walston et al. 2010. Bringing the tiger back from the brink - the six percent solution PLoS Biol 8(9): e1000485. doi:10.1371/journal.pbio.1000485

23. The project site thus has two components, a 'core' and a 'buffer' area (see Map 4 below).
- The 'core' comprises the three contiguous Wildlife Sanctuaries that make up the HKK-TY WHS, including the 14 enclave villages in TYE and TYW.
 - The 'buffer' is a strip of land surrounding and immediately adjacent to the core of the site. The buffer has three distinct sections as follows (see also Map 4);
 - To the east of the HKK WS is a stratified buffer. The inner portion is a 2km wide band of national reserve forest (the forested buffer zone) immediately adjacent to the eastern boundary of HKK WS. Outside of this is an additional band of approximately 10km in width that is referred to as the 'social buffer zone'. This outer band contains an estimated 29 villages;
 - To the north (as part of the Umphang Wildlife Sanctuary) is a 5km wide buffer in which there are no villages.
 - To the south is a 5km wide buffer that includes one village.



Map 4: Project Area showing the Buffer Zones and Enclave and Buffer Zone Villages in and adjacent the Huai Kha Khaeng – Thung Yai Naresuan World Heritage Site

24. There are indications that the human population in the 14 enclave villages have been increasing since the proclamation of the protected areas. This is particularly so in the west of the WHS (TY-W) where the numbers are increasing more rapidly than they are further east. This is understood to be in part due to immigration by people from Myanmar.
25. Common crops in the cultivated land in the enclave villages are rice, chili and tobacco which are grown in a rotational manner within defined boundaries. Coffee is being promoted in some areas but perishable crops

are not suitable due to poor road conditions when attempting to get the produce to markets. Most Karen families earn income by selling rice, chili, black sesame and labour services.

26. In the buffer zone of HKK villagers have access to Community Forests (defined in terms of the National Forest Reserve Act) land which has been classified as suitable for agricultural or economic development and have been degazetted and separated from the forestry conservation sector for this purpose. The Royal Forestry Department (RRD) and the Agricultural Land Reform Office (ALRO) may issues land use certificates (STK-1 Kho ALRO 4-01) to farmers that allows them to plant and harvest trees on degraded National Forest Reserve (NFR) lands.

Tiger Conservation in Thailand

27. The global conservation status of the tiger (*Panthera tigris*) has been listed as Endangered since 1986⁹. In the past half century three of the original eight sub-species have gone extinct in the wild through human action. The primary criteria listed for this status is that the range of the species has declined by approximately 50% over the past three generations¹⁰. Additional data (although with potentially lower confidence) indicate that global population numbers of tigers have dropped by 50% over the same period and there is concern that the declines may persist. There is also concern that some of the decline may not be reversible. The most current global population estimate is that there are approximately 3,900 tigers globally of which just over half are found in “source sites”¹¹ (see Table 3)¹² and 2,500 of which are breeding animals. Tigers are listed as Appendix I animals in CITES meaning that all international trade is banned, and all tiger range states and countries with consumer markets have banned domestic trade as well¹³.

Table 3: National tiger population estimates and estimates in protected “source sites which may have the potential to repopulate areas where tigers have gone extinct.

Country	National tiger population estimates	Estimated tiger population in “source sites”
Bangladesh	440	300
Bhutan	75	-
Cambodia	20	-
China	45	-
India	1,706	970
Indonesia	325	293
Lao PDR	17	17
Malaysia	500	163
Myanmar	85	-
Nepal	155	155
Russia	360	71
Thailand	200	185
Viet Nam	20	-
Total	Total 3,948	Total 2,154

28. Thailand lies at the heart of the tiger range and is thus known as a key tiger range country (TRC). Recognising the importance of Thailand as a TRC, and the contribution that Thailand can make towards tiger conservation, the Royal Thai Government (GoT) has been an active stakeholder in tiger conservation and has

⁹ IUCN Redlist (www.iucnredlist.org)

¹⁰ A tiger generation is between 7 and 10 years.

¹¹ Walston *et al.* 2010. Bringing the tiger back from the brink – the six percent solution. PLOS Biol 8(9): e1000485. doi:10.1371/journal.pbio.1000485.

¹² All figures from summary in IUCN Redlist (www.iucnredlist.org)

¹³ www.cites.org

participated in the Global Tiger Initiative (GTI) from its inception. Thailand's National Tiger Recovery Program (NTRP) reflects the goals of the Global Tiger Recovery Program (GTRP) at the national level and the national mechanism for achieving the goals of the NTRP is the Thailand-Tiger Action Plan 2010 – 2020 (TTAP).

29. In recognition of the need to increase the global tiger population the primary outcome that the TTAP aims to achieve is to increase the tiger population of Thailand by 50 percent by 2020. In order to achieve this outcome five "Priority Actions" have been identified for implementation. These are i) strengthening direct conservation action and enforcement; ii) building capacity based on successful models; iii) strengthening monitoring, research, and information management; iv) promoting education, awareness, and public participation; and v) seeking strategic ways to finance tiger conservation.

30. In the NTRP a critical issue is the identification of "source sites" which can serve as source or donor sites for tigers which can then be used to establish new populations of tigers in their original range – either by passive range expansion or through translocation. These sites are where the primary focus should ideally be placed in implementing the TTAP. In Thailand three sites have been identified, the most important of which - and which hosts more than half of Thailand's tigers - is the HKK-TY WHS in the WEFCON (the other two sites are the Dong Phrayayen–Khao Yai Forest Complex near the Cambodian border and the Kaeng Krachan Forest Complex to the south of the Western Forest Complex along the Tenasserim Range adjacent to the Myanmar border).

31. A significant challenge in conserving tigers is the need to obtain reliable figures for the population. Current estimates for the tiger population in HKK-TY WHS contain significant uncertainty (ranging between 84 and 121 and at an average density of 2-3 tigers/100 km²). There is understood to be a higher density of tigers in the east (estimated to be between 59 & 77 tigers in HKK) than in the central and west (between 25 & 44 tigers in TY-E and TY-W) of the WHS¹⁴.

REDD+ in Thailand

32. Although Thailand does not as yet have a national REDD+ strategy, national preparedness for implementing REDD+ in Thailand has been initiated and is being advanced under the national Readiness Preparation Proposal (R-PP)¹⁵. The DNP are responsible for the functioning of the REDD+ Technical Task force¹⁶, and regional offices will be established to assist the preparatory work at local levels.

33. In the HKK-TY WHS, the forest is dense, high canopy cover tropical forest, which is ideal for REDD projects, as it is high in carbon density. Initial studies suggest that the Thung Yai East Wildlife Sanctuary (157,066 ha) within the WHS may be viable for REDD+ projects. Very initial analysis suggests that there has been some forest loss/degradation in Thung Yai East Wildlife Sanctuary. Land use changes in this period show decreasing area of mixed deciduous forest, secondary grow forest and dry evergreen forest in TYE while other areas (e.g. agricultural and grassland) have been increasing. Initial analysis suggests that the cause of forest loss/degradation at this site is from: (a) conversion for agriculture, often using rotational/shifting cultivation, and mainly related to the seven villages within the WS; (b) low burns every dry season in the bamboo forest to encourage shoot regrowth; and (c) wildfires every dry/hot season (March/April).

Policy and Legislative Context

¹⁴ Thailand – Tiger Action Plan 2010 - 2022

¹⁵ http://forestcarbonpartnership.org/sites/fcp/files/2013/Oct2013/Thailand%20FCPF%20Readiness%20Progress%20Sheet_October%2013.pdf

¹⁶ <http://www.forestcarbonpartnership.org/sites/fcp/files/2013/RRevised%20R-PP%20version%2024%20Feb%202013.pdf>

34. Thailand is a signatory to a number of global treaties relevant to conservation. These include: the Convention on Biological Diversity (CBD) signed in 1992 and ratified in 2004; the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) signed in 1971; the United Nations Framework Convention on Climate Change (UNFCCC) signed in 1992; the World Heritage Convention (WHC) signed in 1972; and the UN Declaration of the Rights of Indigenous Peoples by the United Nations General Assembly signed in 2007.

35. The Constitution of Thailand clearly recognises the rights of communities to “conserve the natural resources and the environment¹⁷” and details rights of the community in this regard¹⁸ as well as the limitations that exist on individuals exercising other constitutional rights where they may have negative impacts on the natural resource base and biodiversity of Thailand¹⁹. The constitution establishes a relatively decentralised governance structure and thus the recognition of stronger local governance, including issues relating to natural resource management²⁰.

36. Thailand’s international commitments, as they pertain to protected areas, are reflected nationally through legislation that establishes and regulates protected area management. The three pivotal legal instruments in this regard are:

- i. The National Parks Act (1961) which provides for the establishment, demarcation, regulation, governance and management of national parks. The Act does not distinguish between terrestrial and marine national parks. In terms of the Act the government may “*reserve land [which is in a] natural condition for the purpose of public research and recreation*” and determine such land to be a National Park by means of a Royal Decree. Once established, prohibited activities in national parks include hunting, harvesting of natural resources, clearing vegetation, obstructing waterways, mining, introducing domestic livestock, causing fires and polluting water.
- ii. The Wild Animal Reservation and Protection Act of 1960 (revised in 1992) provides for the establishment of wildlife sanctuaries primarily as conservation areas for preserved and protected wild animals, under the authority of DNP. In addition the Act provides for the regulation and management of Wildlife Sanctuaries (and public zoos) as well as the regulation of prohibited activities such as collecting, holding, propagating (captive breeding), trading and hunting of protected and preserved wild animals. Wildlife sanctuaries are generally not open to the public, but research activities are explicitly provided for in the Act.
- iii. The National Forest Reserve Act of 1964 provides the underlying legislative framework for the conservation and regulation of forest areas in Thailand, including *Forest Parks* (or National Forest Reserves) and *Non-Hunting Areas*. This includes the power to declare a given area, based on certain criteria, to be under protection and thus to enforce the regulation of activities that are permitted within these areas, including the use of natural resources. The main features of forest parks and non-hunting areas are:
 -) *Forest Parks* are forested areas that have at least one significant feature such as a waterfall, large trees or geomorphologic formations. Their chief purpose is to provide sites for local tourism and recreation.
 -) *Non-Hunting Areas* are open to consumptive uses such as fishing and gathering of non-timber forest products, but hunting is banned.

Community forests in the HKK buffer zone are established under authority of the Act. The regulations used to implement the Act recognise the rights of communities to rehabilitate, use, conserve and manage National Forest Reserve (NFR) land.

¹⁷ S73

¹⁸ S66 and S67

¹⁹ S43

²⁰ S290

37. Additional Cabinet Resolutions and National Policies pertinent to biodiversity conservation and protected area management in Thailand are:

- i. A Cabinet Resolution of 1998 provides some recognition of communities living within National Parks. In terms of the resolution, communities who can provide documentary evidence of their residence on the land prior to the establishment of the protected area may be granted formal recognition and their settlements demarcated. Limited subsistence activities may then be permitted on condition that they can be shown to be sustainable. The resolution stipulates that the recognition does not extend to granting land or property rights.
- ii. A Cabinet Resolution on Watershed Classification establishes different categories of watersheds. In terms of the resolution, Class I Watersheds will strive to achieve a high level of forest protection²¹. Such watersheds may contain or overlap with other categories of protected areas.²²
- iii. The National Forestry Policy (1985) set a target of achieving 40% forest cover in Thailand of which 25% is to be managed for conservation. The policy recognises the long term nature of the endeavour and promotes the involvement of the private sector in forest management. The policy is complemented by the National Forestry Development Plan (1997).
- iv. The Forestry Master Plan was developed in 2003 and aims to promote i) the restoration of degraded forests, ii) encourage the forest industry with various plantation schemes, and iii) support the community forests that local communities have established and are struggling.
- v. The Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016) develops and promotes strategies to raise environmental awareness in relation to the conservation of forest resources and biodiversity.
- vi. The Community Forest Act was drafted in 1992 but has yet to be enacted.

Institutional Context

38. The *Ministry of Natural Resources and Environment* (MONRE) is the Ministry responsible for the overall regulation, planning and management of natural resources in Thailand. Within the Ministry there are a number of subordinate departments; national, provincial and regional offices; authorities, organisations, and public companies.

39. The *Office of Natural Resources and Environmental Policy and Planning* (ONEP) in the MONRE is responsible for developing Thailand's environmental policy, as well as serving as the coordination center for natural resources management.

40. The *National Park, Wildlife and Plant Conservation Department* (DNP) in the MONRE consists of 13 divisions/offices at the national level, and has 21 regional offices, including:

- i. National Park Office – responsible for policies and planning related to national parks including recreation, study and research, natural resource management and development & information;
- ii. Wildlife Conservation Office - responsible for policy and planning related to wildlife sanctuaries, including wildlife research, wildlife protection, extension and promotion, management and development. The Wildlife Conservation Office comprises seven Divisions namely; i) Administration; ii) Wildlife Conservation Areas Management; iii) Wildlife Protection; iv) Extension and Promotion; v) Wildlife Research; vi) Wildlife Captive Breeding; and vii) Wildlife Sanctuary Management Development Study Center.
- iii. Watershed Conservation and Management Office - in charge of watershed area restoration policy and planning and improvement of livelihoods of minority hill tribes who reside in watershed areas; and

²¹ While Class 1 watersheds are generally viewed as conservation areas in Thailand they are not primarily managed for biodiversity conservation objectives, and are not officially counted in the DNP *Statistical Data 2007* reports as part of the system of protected areas.

²² It has been estimated that more than 50% of Class 1 watersheds intersect existing national parks and wildlife sanctuaries.

- iv. Regional Offices - responsible for overseeing the administration, protection, and management of National Parks, Wildlife Sanctuaries and Watersheds.

41. At the level of the individual Wildlife Sanctuaries, the size of the staff complement depends on the extent of the area being managed, and the associated responsibilities, but the structure is similar across most PAs. The officer in charge is the PA superintendent. The Superintendent is supported by one or more Assistant Superintendents who in turn oversee the work of rangers and various logistic staff. The Wildlife Sanctuaries in the HKK-TY WHS are generally structured into the following sections: (i) administration; (ii) wildlife research; (iii) wildlife protection; (iv) wildlife habitat management; and (v) education and promotion. Temporary staff is hired on a contract basis. The primary line of reporting of the Superintendent is to the Wildlife Conservation Offices, while there is a coordination and information-sharing relationship with the relevant DNP Regional Office.

42. The primary reporting relationship of the Directors of the Khao Nang Rum Wildlife Research Centre, the Huai Kha Khaeng Education and Development Centre and the Forest Protection Fire Station (all located in the HKK buffer zone) is to the central Wildlife Conservation Offices, with variable levels of cooperation and collaboration with the management of the three WSs.

43. The *Royal Forestry Department* (RFD) in the MONRE is responsible for: (i) forest conservation, protection and enforcement in NFRs; (ii) forest and forest products research and monitoring; (iii) facilitating community forest management and commercial forestry on private land; (iv) administration of the wood industry, national forestry lands and forest produce; and (v) education in, and development of, forests and forest products. Community forests are registered with the Royal Forestry Department (RFD). The RFD may issue STK-1 land use certificates on degraded NFR lands to local farmers, allowing them to plant and harvest trees .

44. The *Agricultural Land Reform Office* (ALRO) is responsible for: (i) land allocation for farmers under the Agricultural Land Reform Act; (ii) supporting infrastructure development in land reform areas; and (iii) facilitating financial and technical support to farmers in land reform areas. ALRO may issue ALRO 4-01 land use certificates for designated land reform areas, which allows its holder to use the agricultural reformed land.

45. *Local Government*, located within or immediately adjacent to PAs, include elected councils under the Tambon²³ Administrative Organisations (TAO), which are mandated to undertake local environmental planning and management, as well as developing local infrastructure and spatial planning.

46. At *village level* there is a Village Headman structure (Phu Yai Baan) which plays an important role in decision-making at village level and integrates these decisions with those of the Tambon and District Authorities.

Threats, Root Causes and Impacts

47. The Thailand Tiger Action Plan (TTAP) identifies the most significant threats to tiger survival in Thailand as being i) habitat degradation and fragmentation; ii) poaching of the prey that tiger depend on; and iii) poaching of the tigers themselves. The value of tiger habitat however extends beyond the value of the tigers which occupy them. Tiger habitats support tigers, their prey, and a vast amount of biodiversity. They also contribute to human well being, locally and globally, through the provision of many ecosystem services such as water harvesting, carbon sequestration, plant genetic materials, food security and medicinal plants, and opportunities for community-based tourism. Most of these benefits are not currently monetized so tiger landscapes are significantly undervalued in the country. In part it is this undervaluing of the tiger landscapes

²³ A Tambon is a sub-unit of a district that is important in local government

that results in the inaction that leads to degradation, fragmentation, and loss of natural habitats, depletion of prey animals, and poaching to supply a large illegal global trade in their body parts, have pushed wild tigers and their landscapes to the brink of extinction. These threats are further exacerbated by limited capacity and insufficient resources in the country to effectively plan and administer protected, and other important conservation, areas.

Habitat degradation and fragmentation

48. In Thailand, land clearing for various purposes - largely for agricultural use - has led to an average annual reduction in forest cover of 1.21% in the second half of the 20th century. Forest cover in Thailand has decreased from 273,629 km² in 1961 to 158,653 km² in 2006²⁴.

49. While deforestation rates are relatively low in the three wildlife sanctuaries making up the HKK-TY WHS, they are not completely free of the phenomenon. Habitat loss or degradation is occurring as a result of encroachment of farming activities (particularly where shifting cultivation is practiced) in enclave villages and buffer villages (e.g. crop cultivation in Tambon Kaen Makrut in HKK), disturbance by recreational use of off-road vehicles, illegal logging (e.g. rosewood logging in TYW by poachers from Myanmar), extensive livestock grazing and browsing, resource harvesting (particularly non-timber forest products) and fires caused by villagers.

50. Frequent small controlled (e.g. to encourage bamboo shoot regrowth or to open land for cultivation) fires in several locations (e.g. along the eastern border of the HKK, in a 15 km radius from the boundary of the WS) is causing ongoing forest degradation and contributing to an increase in GHG emissions. Regular, large uncontrolled wildfires are originating from extensive shifting cultivation activities which then later create out-of-control wildfires that enter the WS (e.g. at the northeast corner of TYE), threatening forest habitats and species.

51. Threats stemming from buffer zones include illegal selective logging, unsustainable NTFP harvesting (especially mushrooms), shifting cultivation, increased levels of fire, uncontrolled livestock grazing and the unhindered passage of poachers. Unless buffer zones are better managed through effective co-operation of villagers as well as clear delivery of incentives – linked to conservation outcomes – by the park, these threats will continue to increase and expand further into the core biodiversity zones as well as exacerbate the fragmentation effects.

52. The number of people resident in each of the enclave villages in the TYW WS is not fixed and there is little or no control on people moving to and settling in the villages. Inadequate influx control has allowed the number of residents in these villages to increase (primarily as a result of the immigration and integration by Burmese Karen into the seven enclave villages in TYW).

Poaching of tiger prey

53. An important threat to the persistence and growth of tigers populations is a reduced (compared to the benchmark) and declining prey base in the HKK-TY WHS. The primary driver of loss of prey abundance is illegal hunting and poaching. Poaching activities are, in part, driven by an active commercial trade in wildlife which seeks to satisfy growing demands by restaurants, the wild meat trade and the trophy market. Reversing the decline of prey populations within otherwise suitable habitat is crucial not only for tiger conservation, but also for the supporting ecosystems.

²⁴ There is evidence that Thailand may have managed to effectively prevent further degradation in forest lands with an increase in forest cover of 150km² between the period 2005 and 2010 (an annual average increase of 0.08%).

54. Poaching of tiger prey species is understood to be undertaken mainly by hunters from the villages to the east of the HKK buffer zone as well as hunters from the 14 villages inside TYE and TYW WSs while a certain amount of poaching takes place from across the international border with Myanmar. The poaching targets ungulates (which are key prey for tigers) and primates. A factor which exacerbates the impact is that wildlife poaching is commonly not treated as a serious crime by police and judiciary in the provinces, enabling poachers to avoid significant punitive measures.

Poaching of tigers

55. Poaching of tigers is primarily for international wildlife trade in tiger bones and other parts for the traditional medicine products²⁵. The tiger trade exists because there is potential to make enormous profits and it is managed by crime syndicates. The majority of tigers are hunted by professional or semi-professional hunters who sell directly to traders although a significant portion of are killed as a result of conflict with, or for profit by, local communities.

56. Between 2000 and 2014 Thai authorities made 34 seizures of tiger products involving an estimated 139 tigers. Concern has been expressed nationally that captive tiger facilities may be implicated in tiger trade. If this is the case the current national captive tiger database, which is limited to identifying tigers by their stripes alone, may not be sufficient and considerably stronger evidence of identity would be gained by using DNA as a primary identifier of an animal.

The Long-Term Solution and Barriers to Achieving the Solution

57. The establishment, and effective management, of a representative national system of protected areas is an integral part of the country's overall strategy to address the threats and root causes of biodiversity loss.

58. The Huai Kha Khaeng-Thung Yai Naresuan (HKK-TY) World Heritage Site (WHS) consisting of three contiguous protected areas - the Huai Kha Khang (HKK) Wildlife Sanctuary (HKK); the Thung Yai Naresuan East (TYE) Wildlife Sanctuary; and the Thung Yai Naresuan West (TYW) Wildlife Sanctuary is considered by the Government of Thailand (GoT) as a critical tiger conservation landscape in Thailand.

59. The long-term solution sought by the Government of Thailand (GoT) for the HKK-TY WHS is characterised by: (i) legally secure and effectively demarcated Wildlife Sanctuaries that are configured to ensure that populations of forest habitats and forest species can persist in the wild; (ii) a mandated and fully accountable management institution that is responsible for the efficient and cost-effective management of these Wildlife Sanctuaries; (iii) individual Wildlife Sanctuaries that are sufficiently staffed, adequately resourced and sustainably funded to achieve their defined management objectives; and (iv) villages located in and around the Wildlife Sanctuaries in which communities are able to live in harmony with, and can sustainably utilise, the unique natural resources of the area.

60. The main barriers to achieving the long term solution are outlined below.

Barrier 1: Inadequate operational capacity and resources to effectively manage the wildlife sanctuaries

61. While ranger patrols – using the Spatial Monitoring and Reporting Tool (SMART) to collect and report on patrol data - is already being undertaken in the WHS, the coverage and intensity of these patrols are however

²⁵ TRAFFIC, 2008. "What's Driving the Wildlife Trade? A Review of Expert Opinion on Economic and Social Drivers of the Wildlife Trade and Trade Control Efforts in Cambodia, Indonesia, Lao PDR and Vietnam". East Asia and Pacific Region Sustainable Development Discussion Papers. East Asia and Pacific Region Sustainable Development Department, World Bank, Washington, DC.

being constrained by the availability of suitably trained ranger staff and the proper equipping of these rangers. The existing patrolling capability is also unevenly distributed across the WHS, with more ranger staff concentrated in the HKK and fewer deployed in TYE and TYW.

62. The effectiveness of the ranger patrols is largely a function of the skills base of the rangers and the equipment that they have at their disposal. Although considerable effort has already been made by the DNP – with substantial support from the Wildlife Conservation Society (WCS) – to train and properly equip the ranger corps across the three wildlife sanctuaries, there is limited funds to sustain (e.g. refresher training, additional skills training and maintenance/replacement of equipment) these initial investments, and no funds available to train and equip any new ranger staff. Ranger staff salaries are still comparatively low, and there are few financial (other) incentives to retain staff and maintain their levels of professional morale. The working conditions are relatively harsh, and the risk of injury or even death while on patrol is not uncommon.

63. Community-based patrolling inside the villages is operating in the area of the enclave villages of TYE and TYW, but there is limited recognition of this by the management of the WSs and there is no standardised reporting format for this patrolling as it is not fully embedded in the SMART patrol system. Patrolling in the HKK buffer zone is not being systematically implemented, with a tendency to only be reactive to incidents.

64. Although the DNP maintains a monitoring capability (primarily for selected large and medium-sized mammals and tigers) in the Khao Nang Ram Wildlife Research Station in HKK, the coverage of monitoring efforts across the WHS are still unevenly distributed and do not cover the full extent of the WHS. Camera trapping of tigers currently covers about 60% of HKK and only 30% of TYE and TYW respectively. The line transect for distance sampling have, due to resourcing constraints, fallen into disrepair. There are no monitoring facilities and monitoring staff in TYE and TYW, leading to a spatial bias of research and monitoring activities in HKK.

65. There is limited provincial capacity to implement a more integrated approach to wildlife crimes by targeting traders and trade chains and including the judiciary, police and prosecutors as key partners in tackling syndicated poaching problems. Intensive enforcement efforts currently appear to be focused on the wildlife sanctuaries, with little investment in addressing other local and provincial aspects of the intermediary and end user chain.

66. The enforcement of tiger poaching in Thailand (and the HKK-TY WHS) is currently based on information on the stripe patterns of tigers. While this system appears to work well for captive animals, it is not very useful for wild populations, or forensically if only part of a tiger or carcass is found or seized. For this reason there is a need to develop and maintain a comprehensive tiger genetic database in order to genetically identify all sampled tigers, and improve the success of prosecutions relating to illegal trade cases.

67. Currently there is no budget for fire management (e.g. fire-fighting equipment, maintenance of fire breaks, fire surveillance systems) and the staff only resort to reactive back-burning when wildfire enters the wildlife sanctuaries. There is no integrated approach to address the threats posed by the seasonal burning of bamboo forests and the burning of crop fields in the buffer areas and enclave villages, and the spread of large uncontrolled wildfires from adjacent area. The fire-fighting capacity and skills of staff is still basic, utilitarian and largely responsive in nature.

***Barrier 2:** Limited progress in linking livelihood development activities in the enclave and buffer villages with improved conservation outcomes in the HKK-TY WHS*

68. The management focus of the HKK-TY WHS is currently oriented towards enforcement, monitoring and research efforts in the wildlife sanctuaries with limited efforts being made to support the social and

economic development of enclave and adjacent local communities, many of whom still rely on natural forest resources for part of their livelihood.

69. The Wild Animal Reservation and Protection Act also does not give the management staff of the WSs the authority to implement sustainable development programmes beyond the boundaries of the sanctuary, despite the fact that proactive measures to improve the living conditions in these communities may significantly reduce the extent and intensity of threats to the ecological integrity of the sanctuaries ecosystems, habitats and species. It is thus difficult for the WS management teams to adequately budget for, and allocate sufficient staff to, supporting sustainable development initiatives in the enclave and buffer zone villages. Where sanctuary staff are being committed to support community-based sustainable livelihood initiatives, these staff are typically still poorly resourced and inadequately trained.

70. Despite the welcome efforts of a number of stakeholder institutions, there are still few meaningful incentives in place for communities to adopt more biodiversity-friendly land and natural resource use practices in the enclave and buffer area villages. There is also generally a low level of awareness prevailing among community members in these villages about the real need to protect forest resources, and the means to do this.

71. The cooperative governance mechanisms between the individual villages and the forest management authorities (both in the DNP and RTF) to adopt specific land use practices, and administer any agreed sustainable levels of forest use, remains weakly managed. This is resulting in low levels of collaboration with communities to improve the protection of forests and wildlife. This is being further exacerbated by poor and inconsistent enforcement of existing laws and regulations against forest degradation and deforestation in the National Forest Reserves in the HKK buffer area, and limited political will (at the village, district and provincial national level) to effectively rehabilitate and protect the forest resources in the NFRs.

72. The Karen enclave communities inside the TYW and TYE WSs do not yet have secure land tenure rights, and the current agreements delineating the boundaries of the enclave villages in TYE and TYW are still informal, with no enabling legislative framework to secure their legal status.

73. There is a need to move away from the approach where villagers largely experience conservation efforts through law enforcement operations, to a more collaborative approach where financial and technical support provided to support the social and economic development of villages (including nature-based tourism development, improved productivity of crops, development of community forests, improved access to markets, etc.) is linked to specific pre-determined conservation outcomes (smaller and fewer wildfires, lower pollutants, better control over poaching, more sustainable levels of natural resource use, etc.).

74. Support for community forestry is highly variable, even within the Ministry of Natural Resources and Environment. While the Royal Forestry Department has long developed and facilitated community-based forestry initiatives, the National Park, Wildlife, and Plant Conservation Department has not always supported these initiatives occasionally leading to institutional and regulatory inertia.

75. The administration of wildlife sanctuaries is predominantly financed from government budget allocations. While the annual budget allocations for the operational and staff budgets of the WSs are considered adequate to meet the current basic management requirements, they are however insufficient to fill the critical gaps in the coverage of the patrolling and monitoring activities that would be required to effectively manage the WHS, and mitigate the threats to its biodiversity. In recent years funding for capital expenditure in the sanctuaries has been inadequate to provide for the replacement of ageing infrastructure, equipment and vehicles. The WSs are thus dependent on periodic short- to medium-term funding and technical support from a range of development partners (including WCS and SNF) to supplement the shortcomings in their capital, operational and human resource budgets. Indications are that government budget allocations are, in the light of other more pressing demands on the national budget, not likely to increase significantly over the medium-term to fill any

financing gaps. Wildlife Sanctuaries are by law also not open for tourists, so the development of nature-based tourism services and facilities is currently not considered a viable income-generating mechanism. There is thus a critical need to identify ways to develop a more diverse portfolio of prospective financing mechanisms for the WHS. For example, while the potential to pilot a REDD+ project, linked to a Wildlife Premium Mechanism (or similar), has been identified as a possible financing mechanism for the WHS (and its enclave and buffer villages), there is however no institutional capacity and resources to fully develop this pilot carbon project.

***Barrier 3:** Low awareness levels of the importance of, and the need to conserve, the forest habitats and associated wildlife in and around the HKK-TY WHS*

76. The Education and Promotion sections of the three wildlife sanctuaries are generally limited in numbers, budgets and technical skills. They tend to focus on environmental education to scholars, with limited involvement in community outreach efforts. In HKK WS, there is an Extension and Promotion Section which focuses on awareness raising with schools visiting the WS headquarters and its network of nature trails. The Huai Kha Khaeng Extension and Development for Conservation Centre focuses its efforts and resources on providing nature education to schools in both the buffer zone and more widely in Uthai Thani province, but there is limited engagement with the HKK buffer zone communities and weak working relations with the HKK WS management team. Currently, the WSs do not have any capacity to support livelihood development in the buffer and enclave villages.

77. Each of the three sanctuaries has a Protected Area Committee (PAC) – a co-management structure, with an advisory function - comprising representatives from the wildlife sanctuary, local communities, local government agencies, and other stakeholders. Current PAC membership of some PACs is however still skewed towards conservation allies and external stakeholders. PAC agendas also tend to focus on threat mitigation in the wildlife sanctuaries, with little discussion on strategies needed to proactively address threats originating in the buffer zone. The representation of local community interests on the PACs is thus somewhat weak. The PAC have little to no decision-making authority. By example, the preparation of the WS 5-year Management Plans and annual planning and budgeting process, do not involve substantive input from the PACs.

78. Despite a number of awareness-raising and outreach campaigns being undertaken by the Education and Promotion staff of the three WSs and the Huai Kha Khaeng Extension and Development for Conservation Centre (HKK EDCC), the extent and reach of these initiatives remain very limited and intermittent due to critical staff and resource constraints. Extension and outreach efforts by different government agencies and NGOs/CSOs (DNP, ALRO, RTF, SNF, etc.) in the buffer villages are typically uncoordinated and scattered. As a result, there is still a relatively low level of awareness in the enclave and buffer zone villages of the inherent value (both biological, ecosystem services and socio-economic) of the WHS, the key threats to its integrity and what can be done to collaboratively address these threats. There is thus an urgent need for a more sustained, strategically focused and well coordinated outreach and awareness-raising programme to be implemented in the buffer zones of the WHS, and its enclave villages.

Baseline Analysis

Western Forest Complex

79. As the largest contiguous area of relatively undisturbed forest in Thailand the WEFCON is a focal area for a number of national and regional conservation initiatives. With the support of WWF and WCS, there is ongoing tiger conservation work focussing on rehabilitating the prey base of tigers, largely through establishing basic levels of law enforcement; community engagement; and wildlife monitoring in the adjacent Mae Wong and Khon Lan NPs. Additional work is being conducted, together with DNP, using camera traps in Mae Wong NP (initial indications are that at least 10 tigers were identified). In addition to this, community engagement has

placed a focus on the recognition of local leaders, promoting self-regulation by communities (aiming to facilitate greater reporting on illegal activities) and awareness-raising as well as through establishing information networks and joint surveys and patrols of buffer areas. These efforts are likely to continue through the project implementation phase.

80. Engagement with local community members and villagers in the WEFCON has been established through the establishment of a number of Provincial Conservation Forums (PCF). Six PCFs are relatively established and have been active for nearly a decade. The PCFs are composed of members from government departments (including staff from PAs in the province), from local communities and governments, civic society, local institutes and NGOs. They are nominated by the local PA managers for the purposes of ensuring improved communication and coordination. Their roles have been to advise park managers, to raise awareness on conservation, to help in conflict resolution, to implement pilot projects with communities and to be a forum for public hearings.

Wildlife sanctuaries - HKK, TYE and TYW

81. The management authority for the three wildlife sanctuaries is the Wildlife Conservation Office (WCO) of DNP, which falls under the Ministry of Natural Resources and Environment.

82. The current staff complement for the three wildlife sanctuaries that make up the HKK-TY WHS is 454 individuals. The allocation of functional responsibilities of these staff is detailed in the table below.

Table 4: The total number of Park Guards and an estimate of their relative allocation (as a % of the staff complement) to key functions in each of the Wildlife Sanctuaries in the HKK-TY WHS.

Wildlife sanctuary	Total park staff	% for law enforcement	% for wildlife management	% for public engagement	% for technical and administration
HKK	269	71	3	2	24
TYE	112	79	9	7	5
TYW	199	78	14	4	4

83. Using the figures for park rangers allocated to law enforcement, this indicates that there is an average patrol allocation of 14km² per patrol ranger.

84. Historically a more intense patrolling regime has been established in HKK with 21 patrol sub-stations and the HKK HQ. In TYW the ranger patrols operate from 16 sub-stations and the TYW HQ, while in TYE the ranger patrols operate from 8 sub-stations and the TYE HQ (see Table 5). Mobile checkpoints are used to monitor movement and activities in HKK, but not all of these checkpoints are currently functional.

Table 5: Current baseline patrol infrastructure in each wildlife sanctuary in HKK-TY WHS

	HKK	TYE	TYW
Permanent ranger sub-stations plus HQ	22	9	17
Temporary ranger stations	0	1	1
Functional checkpoints	4	0	0

85. The five-year management plans for all three wildlife sanctuaries were prepared in 2009, and are due for revision in 2015. The process of revision is the responsibility of the Superintendent of each wildlife sanctuary, with participation from staff and local community members. The legal framework for wildlife sanctuary management focusses the mandate largely on the core zone activities, and this is reflected in both the budget as well as the staffing allocations.

86. The annual combined operating budgets for the three wildlife sanctuaries is approximately 1.7 million US\$. HKK has a slightly higher proportion of the operating budget allocation (approximately 40%), with the remaining 60% divided between TYW and TYE. The functional allocation of the operating budgets is roughly 65% to protected area and wildlife management, 20% to public engagement and dissemination of knowledge, 12% to research and monitoring and 3% to administration.

87. The collection and management of data from ranger patrols takes place through the Spatial Monitoring and Reporting Tool (SMART) and the data management information system (MIST) which are being used in all three wildlife sanctuaries. The monitoring, reporting, management and analysis of the data enables the understanding of patrols and patrol effort by managers as well as spatial mapping of patrol routes and activities. This is an example of the best system in use internationally, although the extent and intensity of patrolling effort is still not adequate for effective management. Focal data collected through the SMART system is largely related to tigers and tiger prey information as well as data on anti-poaching activities.

88. Community-based patrolling takes place from the enclave villages of both TYE and TYW. This patrolling however, receives little recognition as an important aspect of the management effort for the three wildlife sanctuaries. It does however serve to promote and develop leadership and responsibility in community members.

89. Camera trapping and transect lines are utilized in the project site to monitor tigers and their prey. This work is undertaken by staff and visiting researchers from the Khao Nang Ram Wildlife Research Station (KNRWRS). The KNRWRS is staffed by a manager, three biologists and ten contract staff, with support from additional WCS staff. Camera trapping has been established in approximately 60% of HKK (an area of 1000km²) where it has been consistently implemented for the past 10 years. Less coverage (approximately 30%) of the TYE and TYW wildlife sanctuaries is achieved by camera trapping (an area of 200-300 km²).

90. Wildlife sanctuaries have no legally formalised relationship with the buffer zone or enclave village communities. Interaction between the three wildlife sanctuaries and local community members is currently facilitated through the three separate Protected Area Committees (PACs) which have been established, one each for HKK, TYE and TYW. The PAC for TYE meets every 3 months while those for HKK and TYW meet every six months. The PACs comprise members of i) regional and local administrative offices, ii) other relevant government officials, iii) local villager and community representatives, iv) DNP staff and v) specialists and interest group representatives (e.g. media, women's groups, NGOs such as WCS on the conservation aspects and the SNF as a support to community development). The Terms of Reference for the PACs is to provide advice, recommendations and support to the wildlife sanctuary in planning, implementation, monitoring and evaluation of their activities and approaches as well as to discuss matters of mutual interest or concern such as logging and hunting concerns, land title and matters of jurisdiction, wildlife tourism and opportunities that it presents. In HKK the PAC receives specific support from the SNF to aid it in its functioning.

91. HKK has four nature education centres that have the potential of being developed to take on an educational tourism role as well. They are the Thung Faek centre in the Lansak district; the HKK HQ (also Lansak district); Cyber Water Falls, Huai Knot District and Huai Mae Dee in the Ban Rai district.

92. The Huai Kha Khaeng Extension and Development for Conservation Centre focusses its efforts on resources on providing nature education to schools in both the HKK buffer zone as well as more widely in the Uthai Thani province.

Enclave villages – TYE and TYW

93. SNF is actively supporting community livelihood development activities in the 14 enclave villages of TYE and TYW. SNF are facilitating the process of delineating the areas for productive land use (e.g. for rotational farming) and have concluded the demarcation of village boundaries. SNF are also active in promoting local health services through training “barefoot doctors”, improving access to markets and improving access to education.

94. Villagers in the TYW enclave villages receive agricultural extension support from the technical staff of the Highland Agricultural Development Centre. The technical staff are building on indigenous knowledge of the largely Karen villagers, with focal crops being rice chilli and tobacco as well as coffee and fruit. Much of this produce is used for local consumption but the surplus is sold on external markets. Vegetables and ducks (for eggs) are produced for internal consumption.

95. The TAO are working closely with the superintendents of both TYE and TYW to continually improve relations between the sanctuaries and the communities living in the enclave villages.

96. The land tenure of Karen individuals in enclave villages is currently not legally secure as the Wild Animal Reservation and Protection Act of 1992 provides no community rights of tenure. Communities in the enclave villages have expressed the sentiment that they would like their security of tenure to be improved. Karen villagers have also expressed that they would like greater access to income-generating activities that are compatible with environmental conservation. There is also a need for more paddy land in, and improved road access and more reliable energy supplies to, the villages.

HKK buffer zone – NFR and villages

97. The buffer zone to the east of HKK is very vulnerable to encroachment and land use in this area been zoned to provide additional protection to the wildlife sanctuary. The zonation has been further strengthened by the erection of a barbed wire fence along its eastern boundary (at Kaen Makrut), an area particularly vulnerable to encroachment.

98. The Royal Forestry Department (RFD) has a target of establishing 135 community forests around the HKK-TY WHS. In support of this target, it has allocated a budget of ~US\$3,500 per community forest. The RFD also operates a reforestation program on state lands in the HKK buffer zone.

99. The Agricultural Land Reform Office (ALRO) operates a land reform fund (LRF) wherein each family can borrow approximately US\$1000 (THB 30,000) at an annual interest rate of 4% and it is commonly used for agriculturally associated objectives. In addition in some areas the ALRO provides support for community reforestation activities in land reform areas among buffer zone villages e.g. in Kanchanaburi the budget has been used to plant trees along the protected area boundaries.

100. In the Ban Khlong Salao village in Tambon Kaen Makrut the SNF has facilitated the establishment of a 629 rai (100 ha) community forest together with negotiating the withdrawal of farmers from encroaching into HKK.

101. In Uthai Thani the Bank for Agriculture and Agricultural Cooperatives (BAAC) has a program where it promotes the establishment of Tree Banks. Each Tree Bank initially consists of farmers groups (of between 9 and 30 members) who cultivate trees, which in turn raise the value of the land. Necessary prerequisites are that the farmers have title or usufruct rights to the land (if it is state land) where the trees are planted. The benefit to the farmer is that Tree Bank groups are paid one THB per tree per year for payment of the group’s management committee, one THB per tree per year for tree maintenance and one THB per tree per year for renewing the registration and mapping of the trees. This is regulated under the Forest Plantation Act.

102. The Thai Ecotourism and Adventure Association (TEATA) has companies that have tours that go to the HKK buffer zone where there are nature trails, but they do not enter the WS as this is not legally permitted. The TEATA are of the view that the prohibition from tourists entering the wildlife sanctuaries means that eco-tourism cannot be seen as a main income generator for communities but rather as an additional business opportunity.

Tiger conservation

103. The HKK-TY WHS is classified as a Class 1 tiger conservation landscape (i.e. it holds more than 100 tigers). The existing levels of patrolling and data analysis using SMART and MIST technologies will be continued as the primary form of monitoring for tigers and their prey. The current levels of law enforcement will continue within the HKK-TY WHS, as well as more broadly through deployment of the Wildlife Crimes Unit. Liaison and awareness programs will continue, with a focus on local restaurants and markets (where meat from tiger prey is commonly sold) and in local communities.

104. The Department of National Parks, Wildlife and Plant Conservation (DNP) will continue to seek ways of implementing the Thailand Tiger Action Plan.

105. The DNP have established a captive-tiger database using the unique identifying stripe patterns of captive and photographed wild tigers. However, often tiger carcasses or parts are seized and in such cases, the stripe patterns cannot be used to distinguish the evidence.

REDD+

106. Thailand's Readiness Preparation Proposal for REDD+ has been submitted to and approved by the Forest Carbon Partnership Facility (FCPF), paving the way to implement the REDD+ readiness activities in Thailand. The DNP has conducted a preliminary analysis of the baseline forest cover for the buffer zone areas for the years 2000 and 2008, and intends to expand this analysis to complete the assessment of potential for piloting REDD+ with Wildlife Premium. Requests for the necessary remotely sensed data from relevant agencies have been made to enable this analysis to proceed.

107. Thailand is also actively participating in Phase 2 (2012-2016) of the Greater Mekong Sub-region Forests and Biodiversity Program (GMS FBP). The GMS FBP has a priority landscape (across multiple countries) focus on biodiversity conservation. It has a specific focus on promoting REDD + activities in Thailand, with the overall aim of supporting climate-resilient landscapes across the projects priority areas.

Stakeholder Analysis

108. Partnerships will be an important strategy through which the Project will aim to achieve its objectives. Table 6 below describes the major categories of stakeholders, their roles and responsibilities and their involvement in the Project.

Table 6: Stakeholder Analysis

Stakeholder	Roles and Responsibilities	Proposed involvement in the Project
Ministry of Natural Resources and Environment (MONRE)	The Ministry is responsible for environmental policy and planning	The Ministry will have overall oversight over the project
The Department of National Parks, Wildlife and Plant Conservation (DNP)	The Department is responsible for Managing activities the protected area system in Thailand	The Department will be the implementing agency for the project. DNP will coordinate the implementation

Stakeholder	Roles and Responsibilities	Proposed involvement in the Project
	<ul style="list-style-type: none"> Implementing the CITES Suppressing the illegal wildlife trade within the country Conducting educational outreach to citizens, business leaders and government agencies in Thailand 	of all project activities, and may be responsible for the direct implementation of a number of these activities. It will take the lead role in ensuring ongoing communications with all government agencies and other partners in respect of project implementation.
The Ministry of Agriculture and Cooperatives (MOAC)	Development and regulation of policies on livestock husbandry and the use of fire adjacent to protected areas	The MOAC will support the project by assisting with the communication of the project to villagers as well as promoting better land use practices adjacent to the WHS
Royal Forestry Department (RFD)	The RFD has the responsibility for the management of forests and educating the public about conservation	The RFD will support the project by facilitating the establishment and development of community forestry and nature-based tourism initiatives in the buffer zones.
Agricultural Land Reform Office (ALRO)	Responsible for supporting the allocation and use of agricultural reformed land	The ALRO will support the development of sustainable livelihood activities for farmers in the buffer zone villages
The Ministry of the Interior (MOI)	Supervises provincial governors and their staff. These representatives of provincial government influence development and tourism near protected areas	The MOI will assist by ensuring that effective communication within the spheres of government results in good inter-governmental cooperation in support of the project
The Ministry of Tourism and Sports (MOTS)	Responsible for development of Tourism near to protected areas	The MOTS will contribute by supporting the development of economic incentives for communities through the wise promotion of ecotourism in cooperation with local villagers and the DNP.
The Royal Thai Police (RTP)	Responsible for investigating and enforcing the law relating to illegal wildlife trade in Thailand	The Natural Resources and Environmental Crime Suppression Division of the RTP will contribute to the project by assisting in the training of the park rangers and the Wildlife Crime Units
The Royal Thai Army (RTA)	The RTA is responsible for military training in the country	The RTA is an important training source and can be used by the project in that capacity
The Border Patrol Police (BPP)	Responsible for ensuring the integrity of international borders	The BPP will contribute by assisting the DNP in training park rangers working in protected areas and conducting joint patrols along the border areas
The Customs Department	Responsible for all check points in the country	The Customs Department will assist by working collaboratively with the Natural Resources and Environmental Crime Suppression staff at identified check points
Provincial Administrative Organisation (PAO)	Manages and provides public services within a province.	The PAO will assist by facilitating and supporting the development of the <i>Thap Salao</i> Ecotourism Project

Stakeholder	Roles and Responsibilities	Proposed involvement in the Project
Tambon ²⁶ Administrative Organisations (TAO)	Manage and provide basic infrastructure for communities living in the buffer zones.	The TAOs will assist the project in the implementation of livelihood development, tourism development and outreach programmes in the buffer zone and enclave communities.
Village Chief	Play an important role in decision-making at village level.	The <i>Phu Yai Baan</i> will support and guide the iterative negotiation of Conservation Agreements and will nominate representative on the PACs.
Conservation NGOS	<p>These organisations provide a voice to a diverse set of stakeholders and are often a source of innovation, funding additional projects and education and awareness.</p> <p>Specific NGOS that require mentioning are:</p> <ul style="list-style-type: none">) Wildlife Conservation Society (WCS) who have a specific interest in tiger conservation in the WEFCOM.) Seub Nakhasathien Foundation (SNF) who have an interest in supporting efforts to promote sustainable conservation and development²⁷.) World Wide Fund for Nature (WWF) who have an interest in supplementing REDD+ payments with biodiversity conservation payments in forests 	<p>NGOs will contribute by supporting the goals and approaches of the project and raising awareness of critical issues within their specific fields of interest and expertise. They will work in collaboration with DNP and other state agencies.</p> <ul style="list-style-type: none">) WCS will support the project in improving the use and value of the SMART monitoring system) The involvement of SNF will be focused on support around livelihood development and training for local community members in the enclave and buffer villages) WWF may, by agreement with the DNP, support the implementation of select project activities
Universities and colleges	To provide research, guidance for students undergoing tertiary education and training in conservation and related topics and through communicating new knowledge	Undergraduate and post-graduate students may support and/or participate in the implementation of selected project activities (e.g. camera traps, prey monitoring, outreach programmes, etc.)

²⁶ A Tambon is a sub-unit of a district.

²⁷ Visit <http://www.seub.or.th/> for further information.

PART II: STRATEGY

Project Rationale and Conformity

Fit with GEF Focal Area Strategy and Programme

109. The project will strengthen the management, and improve the financial sustainability, of one of Thailand's most important biodiversity areas, the Huai Kha Khaeng-Thung Yai World Heritage Site (HKK-TY WHS), comprising three contiguous wildlife sanctuaries: Thung Yai West; Thung Yai East; and Huai Kha Khaeng. It will also develop and implement mechanisms to incentivise surrounding communities living in and around the HKK-TY to better protect the biodiversity of the World Heritage Site and to adopt more sustainable land use and forestry management practises in the adjacent buffer areas. Finally, it will implement measures to reduce greenhouse gas (GHG) emissions in the HKK-TY WHS and its buffer areas by reducing the burning of forests and enhancing the protection of forests in order to increase levels of carbon storage.

110. The project is consistent with Objective 1 of the GEF's Biodiversity Focal Area Strategy, '*Improve Sustainability of Protected Area Systems*'. The project will contribute to the following outcomes under Objective 1: Outcome 1.1 '*Improved management effectiveness of existing and new protected areas*'; and Outcome 1.2 '*Increased revenue for protected area systems to meet total expenditures required for management*'.

111. The project will contribute to the achievement of GEF's Biodiversity outcome indicators under Objective 1 as follows:

GEF-5 Biodiversity Results Framework		
Objective	Expected Outcome	Expected Indicator (and project contribution to indicator)
Objective 1 Improve sustainability of Protected Area Systems	Outcome 1.1 Improved management effectiveness of existing and new protected areas	Indicator 1.1 Protected area management effectiveness as recorded by Management Effectiveness Tracking Tool <u>Project contribution to indicator:</u> <i>METT scores for the 3 Wildlife Sanctuaries will improve from an average baseline score of 67% to 72% by end of project</i>
	Outcome 1.2 Increased revenue for protected area systems to meet total expenditures required for management	Indicator 1.2 Increased revenue for protected area systems to meet total expenditures required for management <u>Project contribution to indicator:</u> <i>Revenue for the three Wildlife Sanctuaries will increase from a baseline of <US\$x/annum to>US\$x /annum by end of project²⁸</i>

112. The project is also consistent with Objective 5 of the GEFs Climate Change (CC) Focal Area Strategy, '*Promote Conservation and Enhancement of Carbon Stocks through Sustainable Management of Land Use, Land Use Change and Forestry (LULUCF)*'. The project will contribute to the following outcomes under

²⁸ To be determined at Project Inception during the finalisation of the Financial Scorecard

Objective 5: (i) *Good management practices in LULUCF adopted both within the forest land and in the wider landscape*; (ii) *Restoration and enhancement of carbon stocks in forests and non-forest lands, including peatland*; and (iii) *GHG emissions avoided and carbon sequestered*.

113. The project will contribute to the achievement of GEF's CC outcome indicators under Objective 5 as follows:

GEF-5 Climate Change Results Framework		
Objective	Expected Outcome	Expected Indicator (and project contribution to indicator)
Objective 5 Promote Conservation and Enhancement of Carbon Stocks through Sustainable Management of Land Use, Land Use Change and Forestry (LULUCF)	Outcome Good management practices in LULUCF adopted both within the forest land and in the wider landscape	Indicator Number of countries adopting good management practices in LULUCF <u>Project contribution to indicator:</u> <i>At least 28 villages in the enclave and buffer villages adopt good management practices in LULUCF</i>
	Outcome Restoration and enhancement of carbon stocks in forests and non-forest lands, including peatland	Indicator Hectares restored <u>Project contribution to indicator:</u> <i>309 ha of natural forest habitat restored in the WHS buffer areas</i>

114. The project is further consistent with Objective 1 of the GEFs Sustainable Forest Management (SFM)/REDD-PLUS Focal Area Strategy, '*Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services*'. The project will contribute to the following outcome under Objective 1: Outcome 1.2 *Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services*.

115. The project will contribute to the achievement of GEF's CC outcome indicators under Objective 5 as follows:

GEF-5 SFM/REDD+ Results Framework		
Objective	Expected Outcome	Expected Indicator (and project contribution to indicator)
Objective 1 Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services	Outcome 1.2 Good management practices applied in existing forests	Indicators Carbon stored in forest ecosystems and emissions avoided from deforestation and forest degradation Land (hectares) covered by intact forest

<p>Objective 2 Strengthen the enabling environment to reduce GHG emissions from deforestation and forest degradation and enhance carbon sinks from LULUCF activities</p>	<p>Outcome 2.1 Enhanced institutional capacity to account for GHG emission reduction and increase in carbon stocks</p> <p>Outcome 2.2: New revenue for SFM created through engaging in the carbon market</p>	<p><u>Project contribution to indicators:</u> <i>Avoided forest and forest degradation (985 ha and 249,969 tonnes of CO₂ eq.)</i></p> <p><i>733,172 ha of intact forest</i></p>
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Rationale and Summary of the GEF Alternative

116. The core project site is the Huai Kha Khaeng-Thung Yai Naresuan World Heritage Site (HKK-TY WHS). The WHS is comprised of the Huai Kha Khaeng Wildlife Sanctuary (HKK) and two adjoining Wildlife Sanctuaries - Thung Yai Naresuan East (TYE) and Thung Yai Naresuan West (TYW). There are 14 formally recognised enclave villages located within the TYW (7 villages) and TYE (7 villages). These enclave villages, and the 29 villages in a 5km buffer zone to the east of HKK, will be the focus of complementary project interventions.

117. The project will seek to improve the overall effectiveness of on-ground management of the HKK-TY WHS by addressing competence gaps and strengthening institutional capacity. The project will further develop incentives for community-based sustainable forest management and wildlife conservation activities, by linking livelihood development and conservation outcomes in the buffer areas of the WHS. Environmental education and awareness-raising programmes will also be undertaken, targeting local villages and communities proximate to the WHS.

118. Project activities in the core area will be directed towards strengthening and scaling up existing best-practice management activities, and developing and testing innovative approaches to enforcement and compliance, in the HKK-TYN WHS. It will strive to reduce the direct threats to tigers and prey, improve effectiveness of wildlife sanctuary management, and enhance the use of data and information to support key management decision-making.

119. Project activities will be directed to linking sustainable livelihood development in the enclave and buffer zone villages with specific conservation outcomes, and improving economic links between the buffer zone and enclave villages and the Wildlife Sanctuaries. It will seek to achieve these linkages by promoting incentives (including technical support and grant funding for sustainable livelihood initiatives, ecotourism development and piloting a REDD+ Wildlife Premium carbon project) for community-based sustainable forest management, environmentally friendly agricultural practices, nature-based tourism and education and improved wildlife and habitat protection.

120. Finally, project activities will be directed towards raising the awareness in the communities living in and around the WHS of the need to conserve, and the importance of protecting, the forest landscapes and associated wildlife. With the iterative recognition in these communities of the intrinsic value of the forest habitats and wildlife, the project will then assist in strengthening the representation of the buffer and enclave communities in each of the Wildlife Sanctuary's Protected Area Committees (PACs). With improved community-based representation on the PAC, the project will then assist in building the capacity (information, knowledge, skills) of each of the community representatives to assure a constructive and meaningful contribution to the co-management of the Wildlife Sanctuaries.

Project Objective, Outcomes and Outputs/Activities

121. The project **objective** is to *improve management effectiveness and sustainable financing for Huai Kha Khaeng-Thung Yai Naresuan (HKK-TYN) World Heritage Site and incentivise local community stewardship*.

122. In order to achieve the project objective, and address the barriers (see [Section 1, Part I](#)), the project's intervention has been organised into three **components** (this is in line with the components presented at the PIF stage):

Component 1: Strengthened on-ground conservation actions and wildlife protection.

Component 2: Incentives and sustainable financing for wildlife conservation and forest protection.

Component 3: Improved local education, awareness and participation.

Component 1: Strengthened on-ground conservation actions and wildlife protection

123. Implementation of this component will be directed through three **outputs**, as follows:

Output 1.1: Wildlife and habitat protection.

124. Work under this output will include: (a) increasing the ground coverage of the current SMART patrolling system in the wildlife sanctuaries; (b) developing and implementing an integrated fire management plan for the WHS; and (c) building the capacity of DNP's Wildlife Forensic Analysis laboratory to be able to conduct DNA analysis of wild and captive tigers.

125. *(a) Increasing coverage of ranger patrols*: GEF funding will be used to expand the SMART patrol system across the three Wildlife Sanctuaries. This will ensure that the collective threats to the ecological integrity of the HKK-TY WHS are more systematically addressed, and key species and habitats are more effectively conserved. Incremental financial support from the GEF will particularly focus on: securing the eastern border of HKK WS; filling recognized spatial gaps in the current patrol system; improving efficiency and response time of ranger staff; bolstering rangers' performance and motivation; improving intelligence-led planning and management; and improving relationships among rangers, the community and other stakeholders.

126. The specific activities to be implemented in support of increasing the coverage of ranger patrols include the following:

- (i) Construct and equip (including the procurement of tables, cabinets, water pumps, generators, water tanks) two additional permanent ranger stations - one in TYE and one in TYW Wildlife Sanctuaries;
- (ii) Construct (or renovate) and equip (including procurement of generators, water tanks and temporary booms) an additional eight checkpoints - five in HKK, one in TYE and two in TYW Wildlife Sanctuaries;
- (iii) Rationalise and upgrade the capacity (including the purchase of a server and computers, installation of solar power, and contractual appointment of data base staff) of the SMART Patrol Data Centres across the three Wildlife Sanctuaries making up the HKK-TY WHS;
- (iv) Facilitate regular meetings and/or workshops between managers, rangers, communities and other stakeholders in and around the HKK-TY WHS to discuss and analyse SMART data outputs, and collaboratively identify ways to address ongoing threats;
- (v) Upgrade the radio communications network (including procuring or replacing base-radio stations, radio antenna, VHF/FM hand-held radios, VHF/FM vehicle radio units and solar battery chargers for ranger staff, patrol vehicles, ranger stations and/or checkpoints) across the HKK-TY WHS, as and where needed;

- (vi) Contract additional rangers to complement the current patrol complement in the TYE, TYW and HKK Wildlife Sanctuaries;
- (vii) Procure staff uniforms and staff safety and camping equipment (as required) for newly contracted ranger staff (including uniforms, tents, sleeping bags, backpacks, water bottles, first aid supplies, GPS, weapons, utensils, cameras and torches);
- (viii) Procure essential vehicles for the three Wildlife Sanctuaries, including three 4x4 pickup vehicles; one 4x4 5-ton flatbed truck; three tractors and nine motor/quad-bikes;
- (ix) Strengthen (i.e. expand and top-up) the group insurance scheme (both death and disability insurance) for all field staff (including permanent employees, government employees and daily workers) in the three Wildlife Sanctuaries;
- (x) Supplement the daily patrol rations for park rangers across the three Wildlife Sanctuaries; and
- (xi) Research and pilot the installation of a suitable security surveillance system – linked to a network-attached storage device or central control facility – that can be used in areas with high poaching intensity.

127. Co-financing from the GoT will be used to finance all existing government and contract ranger staff salaries, the operational costs for sustaining the existing SMART patrolling system, the operating and maintenance costs of all equipment and vehicles and the maintenance of all existing infrastructure and associated bulk services. Co-financing from the WCS will be used to support the procurement of ranger uniforms and their safety and camping equipment.

128. *(b) Fire Management:* GEF funding will be used to engineer a paradigm shift from the prevailing reactive fire fighting approach in the WHS and its buffer area to an Integrated Fire Management (IFM) approach in order to cope with the additional probability of climate induced fire hazards. IFM is a series of actions that will include: (i) fire awareness activities; (ii) fire prevention activities (including risk reduction measures); (iii) fire detection; (iv) dispatch and coordination; (v) fire suppression; (vi) fire damage rehabilitation; and (vii) research. Incremental support from the GEF budget will particularly focus on: analyzing current fire regimes and impacts across the WHS; preparing an integrated fire management plan for the WHS and its buffer area; and improving fire management techniques such as: prevention (e.g. firebreaks and/or low intensity prescribed burns), fire fighting capacity (e.g. fire-fighting equipment) and training.

129. The specific activities to be implemented in support of improved fire management include the following:

- (i) Profile the historical distribution, extent and cause of fire incidences and identify trends and wildfire 'hotspots' in the HKK-TY WHS and adjacent buffer areas;
- (ii) Review regional best practice in integrated fire management in similar large, biologically-rich forest habitats;
- (iii) Prepare an overarching Integrated Fire Management Plan (IFMP) for the HKK-TY WHS;
- (iv) On the basis of the requirements of the IFMP, establish and maintain firebreaks (which can also function as pre-ignition boundaries for backburning or prescribed burning, demarcation of the Wildlife Sanctuary boundary and access routes for ranger patrolling of boundaries) in wildfire 'hotspot' areas; and
- (v) Develop and implement basic and intermediary fire management training for targeted sanctuary staff and buffer communities.

130. Co-financing from the GoT will fund all existing government and contract fire management staff salaries, the maintenance of existing firebreaks and the operating and maintenance costs of existing fire fighting equipment and services.

131. (c) *DNA Registration of Captive Tigers*: GEF funding will be used to support the DNP in registering the genetic coding of every wild and captive tiger in Thailand, as an integral part of the country's strategy to control illegal trade in tigers and tiger products. It is envisaged that the genetic coding of each wild and captive tiger will contribute to more effective law enforcement and control of tiger trafficking. The project will finance incremental costs for equipment, the operating costs of acquiring genetic information from individual tigers and the establishment and maintenance of a tiger DNA database.

132. The specific activities to be implemented in support of the genetic coding of live and captive tigers include the following:

- (i) Procure requisite sampling and laboratory equipment (including dart gun and darts package, PCR detection system machine, thermal cycler machine, microcentrifuge, vortex, micropipettes, UV PCR cabinet and workstation, LED gel documentation, gel electrophoresis chamber and heating block);
- (ii) Develop and maintain a tiger gene database system;
- (iii) For each captive and wild sampled tiger, identify the sub-species of the individual animal - DNA extraction and amplification (using polymerase chain reaction, PCR) and DNA sequencing; and
- (iv) For each captive and wild sampled tiger, genetically profile the individual animal – short tandem repeat (STR) fragment analysis and single nucleotide polymorphisms (SNPs) genotyping.

133. Co-financing from the GoT will fund the capital costs of any additional equipment required for genetic analysis, the provision of an equipped laboratory facility, office and computer equipment, the salaries and running costs of permanent government staff and the payment of all utility accounts.

Output 1.2: Resource monitoring and information management

134. Work under this output will include: (a) improving the monitoring and information management capacities (staff, infrastructure, equipment, vehicles and power supply) in the Khao Nang Ram Wildlife Research Station) and in the TYE (monitoring sub-station) and TYW (monitoring sub-station) Wildlife Sanctuaries; (b) expanding the monitoring (camera trapping, line transects, distance sampling and occupancy surveys) of the tiger and tiger prey populations to cover a bigger proportion of the HKK-TY WHS; and (c) establishing a GIS-based information management system for the HKK-TY WHS.

135. (a) *Improved monitoring and information management capacities*: GEF funding will be used to renovate and equip the tiger database centre in the Khao Nang Ram Wildlife Research Station and to establish sub-stations for the monitoring of tiger and wildlife populations in TYE and TYW Wildlife Sanctuaries.

136. The specific activities to be implemented in support of the improvement of the monitoring and information management capacities across the HKK-TY WHS include the following:

- (i) Renovate the tiger database centre in the Khao Nang Ram Wildlife Research Station;
- (ii) Procure supplementary equipment for the tiger database centre in HKK and the monitoring sub-stations in TYE and TYW (including back-up generators, solar power systems and computer equipment);
- (iii) Renovate and equip basic working facilities for the monitoring sub-stations in TYE and TYW;
- (iv) Contract biologists (2) and support worker staff (6) to implement the expanded monitoring program in TYE and TYW; and
- (v) Procure vehicles (two 4WD pick-ups and two motorcycles) for the TYE and TYW monitoring sub-stations.

137. Co-financing from the GoT will be used to fund all existing research and monitoring staff salaries, the operational costs for maintaining the Khao Nang Ram Wildlife Research Station (and its sub-stations), the

operating and maintenance costs of all equipment and vehicles and the maintenance of all existing infrastructure and associated bulk services.

138. (b) *Increased coverage of the wildlife monitoring program:* GEF funding will be used to: support an expanded area of line transect and distance sampling in TYE and TYW; increase the area covered by tiger camera traps; and conduct an occupancy survey for the WHS area.

139. The specific activities to be implemented in support of expanding the footprint of the wildlife monitoring program include the following:

- (i) Increase the tiger camera trapping in HKK from 60% to 70% (cost of equipment and operating costs);
- (ii) Increase the tiger camera trapping in TYE and TYW from 30% to >40% in TYE and TYW (cost of equipment and operating costs);
- (iii) Repair and survey the prey survey transect lines for the HKK-TY WHS (cost of equipment and operating costs); and
- (iv) Conduct the wildlife occupancy survey for the HKK-TY WHS (operating costs).

140. The GoT will continue to finance the current monitoring programme - covering around 60 percent of the HKK WS and 30 percent of TYE and TYW WSs. WCS will provide funding support to the GoT in administering the current monitoring program, and co-financing support to the project in further scaling up the camera trapping in HKK.

141. (c) *GIS-based information management system:* GEF funding will be used to provide assistance to the DNP in the initial development (i.e. design, procurement of hardware and software, networking, database development and user interface development) of a GIS-based information management system for the HKK-TY WHS. The information management system will serve as a decision-support tool to guide conservation management decisions in the WHS.

142. The specific activities to be implemented in support of developing a GIS-based information management system for the HKK-TY WHS include the following:

- (i) Identify and prioritise the critical information needed to support the planning and management of the WHS.
- (ii) Source and validate existing electronic (GIS data, spreadsheets, images, etc.) or hard copy (maps, reports, tables, etc.) WHS-related information.
- (iii) Convert hard copy information (wherever this is practicable and cost-effective) into an electronic format.
- (iv) Design and establish a simple GIS-based information management system to facilitate the storage, retrieval and analysis of all WHS data.
- (v) Support the acquisition of the institutionally compatible hardware and software required to host the information management system.
- (vi) Establish data access and data maintenance protocols for all WHS-related information.
- (vii) Integrate the information management system for the WHS into the broader institutional information systems within the DNP.

143. The GoT will finance the hosting and ongoing maintenance of the information management system. It will ensure the continued collection, transformation and integration of key data and information from the three Wildlife Sanctuaries into the central database.

Output 1.3: Training and capacity development

144. Work under this output will focus on: (a) developing and implementing a sustained training and skills development programme for sanctuary staff, and other institutional and community partners; and (b) facilitating the establishment of a platform for knowledge-sharing across the 13 tiger range countries.

145. The specific activities to be implemented in support of this output include the following:

- (i) Prepare a comprehensive accredited training curriculum, and a suite of individually tailored training courses, for ranger and management staff in the WHS;
- (ii) Develop and implement a 'train-the-trainer' project for select WS and DNP staff;
- (iii) Implement SMART training for all newly contracted rangers across the three Wildlife Sanctuaries;
- (iv) Maintain regular refresher training courses for all ranger staff across the three Wildlife Sanctuaries;
- (v) Facilitate regional study tours for WS sanctuary staff and key community leaders in the buffer area to learn about best practices in other similar sites;
- (vi) Provide training for provincial and district judiciary and police on the nature of wildlife crimes, and the enforcement approaches required to address these;
- (vii) Facilitate professional skills development for targeted WS management staff and relevant DNP staff. This may include *inter alia*: professional short-courses; staff exchange/mentoring partnerships with counterpart tiger conservation agencies; and part-time studies;
- (viii) Assess the feasibility of establishing a 'Regional Tiger Conservation and Training Centre' (RTCTC) for the 13 tiger range countries in the HKK-TY WHS;
- (ix) Prepare a conceptual design and draft a business plan for the RTCTC; and
- (x) Implement a fund-raising strategy to raise financing for the establishment and operations of the RTCTC.

146. Co-financing from the WCS will be used to support the ongoing training of rangers in the SMART patrol system. The GoT will co-finance all other ongoing WS staff training and skills development initiatives.

Component 2: Incentives and sustainable financing for wildlife conservation and forest protection

147. Implementation of this component will be directed through three **outputs**, as follows:

Output 2.1: Community livelihood assistance

148. This output will be implemented in three target areas: (i) selected buffer zone villages along the eastern boundary of HKK; (ii) seven enclave Karen villages in TYE; and (iii) seven enclave Karen villages in TYW.

149. Work under this output will focus on: (a) negotiating Conservation Agreements (CAs) with the targeted enclave and buffer zone villages; (b) facilitating access to technical and financial assistance for agreed livelihood development opportunities in the Karen enclave villages in TYE and TYW; and (c) facilitating access to technical and financial assistance for community-based forestry initiatives in the HKK buffer villages.

150. (a) *Conservation Agreements (CAs)*: CAs are negotiated framework agreements that will define the approved livelihood activities (limited however to those acceptable by law) for each land use category in each village. The short- and medium-term objectives of the CAs are to stabilize the tenure of the occupants and their land use practices. This will be achieved through enforcement, by mutual respect, of: (i) the land use and occupancy rights of the village community; and, (ii) of the conservation status of the Wildlife Sanctuaries. GEF funding will be used to support the pre-consultation and CA negotiation processes within each of the 14 enclave communities in TYE and TYW, and with selected buffer zone villages east of HKK. Livelihood activities will be determined by each village (from a suite of options that are identified in a participatory and consultative

manner). Each village will then identify and prioritize the livelihood development options that may be suitable for project-support in their village. The CA will then define: (i) jointly agreed responsibilities of the village (e.g. to limit poaching and agricultural expansion outside of designated areas), and agreed conservation goals; (ii) the nature of the livelihood assistance that could be provided through the project for meeting both conservation targets and economic growth; and (iii) the local institutions (e.g., sub-district [*tambon*] administrative organization, Village Fund, BAAC Tree Banks, ALRO Land Reform Fund, NGOs/CSOs) that could further finance and/or support the implementation of the CAs. The proposed activities identified in each CA will then be reviewed by the project team, and approved by the DNP, for direct project support. Activities listed as potentially negative for social and environmental safeguard reasons will be screened out and not supported by the project.

151. *(b) Assistance to enclave villages in TYE and TYW:* The potential for introducing livelihood development options to the 14 ethnic Karen enclave villages in TYE and TYW is limited, given legal constraints due to their location inside a wildlife sanctuary (e.g. livestock rearing and tourism are not permitted). Land-based activities supported by the project will emphasize the Thai Government's policy on promoting the 'sufficiency economy' philosophy. GEF funding will be used to support selective livelihood development pursuits in the enclave villages, such as: improved health care (utilizing indigenous Karen knowledge and products); planting of indigenous varieties of upland rice, chili, medicinal herbs, and betel nut; educational scholarships; and micro-enterprises (such as traditional weaving). GEF funds may also be used to promote post-harvest technologies (drying, cleaning, sorting, packing, and storage) and family-based value-added processing of any surplus crops for sale to local traders. Interested farmers, especially women and youth, will be encouraged to organize self-help groups to facilitate the production of indigenous products on existing agricultural land, taking advantage of indigenous knowledge and the marketing of surplus produce. GEF funds will be used to provide livelihood assistance to communities living in the enclave villages through (a) small grants and (b) technical assistance. Additionally, a number of Karen villagers may be contracted by the WS to implement GEF-financed patrol or monitoring work (see Outputs 1.1 and 1.2).

152. *(c) HKK buffer villages:* Community forestry will be promoted in targeted HKK buffer villages in order to protect the remaining forests in the buffer zone on National Forest Reserve (NFR) lands. CAs will stipulate conditions for community-based tree cultivation activities, including: Tree Banks; agroforestry; family forests; forest gardens and smallholder tree farms (of economically valuable indigenous or endangered tropical hardwood species and selected fruit trees); or reforestation to create community forests in degraded areas. The CAs may also include identifying options for: sustainable harvesting of NTFPs for household consumption and sale of surplus, particularly by vulnerable and less well-off households; identifying potential markets; and for income from agroforestry when trees mature. The project will assist in the registration of community forests and Tree Banks with the RFD. These initiatives are consistent with GoT policies and programs and can be supported by budgets from GoT line agencies, local (provincial and sub-district) government budgets and the Bank for Agriculture and Agricultural Cooperatives (BAAC) Tree Bank program upon completion of the project to ensure institutional sustainability. Monoculture cropping and exotic species plantations will however not be supported. GEF funds will primarily be used as small grants or direct technical assistance to supplement existing tree cultivation promotion activities already under implementation by community-based²⁹ initiatives in the selected buffer zone villages.

Output 2.2: Nature-based tourism development

153. Work under this output will focus on (a) preparing a medium-term Financial Plan that provides the strategic framework for mobilizing financial resources - including income from nature-based tourism, educational and recreational facilities and services - for the WHS; (b) undertaking a feasibility assessment of all

²⁹ E.g. The Regional Community Forestry Training Center (RECOFT) and the Seub Nakhasathien Foundation (SNF).

potential tourism and recreational development opportunities in and around the WHS; and (c) developing a detailed concept and business plan for the proposed *Thap Salao* ecotourism project.

154. (a) *Financial Plan for the WHS*: GEF funds will be used to evaluate the feasibility of a range of different funding mechanisms/tools for the WHS. Based on the results of this evaluation, a set of key actions that will be required to mobilize financial resources for, and build financial capacity in, the WHS (and the individual WSs making up the WHS) will be identified. A medium-term Financial Plan will then be developed to provide the strategic framework for the prioritized implementation of these key actions.

155. (b) *Tourism potential analysis of the WHS*: GEF funds will be used to assist the DNP to *inter alia*: examine the market demand for tourism and recreational products and services in and around the WHS; identify specific prospective tourism, recreation and education business opportunities in and around the WHS to meet this market demand; and clarify the necessary enabling environment (legal, institutional and operational) required to realise these tourism, recreation and education business opportunities.

156. (c) *Business planning support to the Thap Salao ecotourism project*: The Thap Salao Ecotourism Project has been proposed by the Uthai Thani Provincial Conservation Foundation and the HKK WS. This community-based tourism project is premised on improving the livelihoods of five villages in the HKK buffer area. In concept it seeks to develop a tourism product that physically links a large indigenous forest (currently designated as a NFR), the Thap Salao reservoir, the HKK Breeding Centre and the HKK Extension and Development for Conservation Centre – all located in the HKK buffer zone – with the HKK (and HKK-TY WHS) headquarters located within the HKK Wildlife Sanctuary, via a 9km nature trail (between Ban Bung Charoen village and the HKK headquarters). GEF funding will be used to assist the project partners (notably local government, HKK WS and the communities of the five villages) in developing a conceptual and business plan which will ensure that the project is economically viable and will generate tangible benefits to the targeted village beneficiaries. The business plan may address *inter alia* the following: (i) start-up financing and running costs; (ii) mitigation of environmental impacts (e.g. wildlife re-introductions from the breeding centre); (iii) requirements for community-based lodging/home-stay; (iv) training and capacity-building needs for local residents (e.g. nature guides, business skills, etc.); (v) infrastructural and equipment requirements; and (vi) governance and benefit-sharing arrangements. The conceptual and business plan will be formulated and implemented in collaboration with community leaders, local government, and other relevant organizations and key stakeholders. Sources of long-term funding to maintain the ecotourism project will also be identified in the business plan – these funding sources may include DNP budget, local government (provincial and sub-district) budget (e.g., PONRE, TAT, RFD, TAO), and contributions from the private sector through CSR.

157. As per the local government's plan, the GoT will finance all the required basic infrastructure improvements and renovation.

Output 2.3: REDD+ and Wildlife Premium

158. More extensive feasibility work is required to assess whether carbon projects in Wildlife Sanctuaries (and other PAs) in Thailand are technically feasible and financially sustainable. Technical assistance is however needed to develop project concepts and design documents, and to bring forest carbon credits to market. Work under this output will thus support the development of demonstration carbon sequestration projects in the HKK-TY WHS and its buffer areas. As part of this development process, the feasibility of adopting an explicit performance-based Wildlife Premium Mechanism (WPM³⁰) will be assessed.

³⁰ E. Dinerstein, et.al. 2012, "Enhancing Conservation, Ecosystem Services, and Local Livelihoods through a Wildlife Premium Mechanism," *Conservation Biology*, 27 (1), pp.14-23

159. Work under this output will be designed, developed and implemented as an integral part of the broader development of Thailand's REDD+ Readiness Preparation Proposal (R-PP).

160. Based on a number of criteria, three potential carbon sites have been identified for development as carbon sequestration demonstration projects. These sites are (i) the buffer zone (up to 15km) to the east of HKK WS, covering an area of 1,817 km²; (ii) the whole WHS (i.e. HKK, TYE, TYW) covering an area of 6,427 km²; or (iii) a decommissioned mine site northwest of TYW, covering an area of about 100 km² (refer to Annex A for more details).

161. The specific activities to be implemented in support of this output include the following:

- (i) Aligning the development of the demonstration carbon sequestration projects with the overarching R-PP implementation process (including the preparation of the: National REDD+ Strategy and Implementation Plan in Thailand; Thailand's Reference Level for REDD+; national REDD+ monitoring system; and REDD+ capacity-building);
- (ii) Conducting pre-feasibility scoping for each of the three potential sites, including identification of project proponents;
- (iii) Preparing a Project Idea Note (PIN) or concept for the project sites, including: defining project scope; identifying project area; identifying potential partners; analyzing legal feasibility; initiating stakeholder engagement; and assessing project feasibility;
- (iv) Designing each demonstration project through in-depth feasibility analysis resulting in preparation of Project Design Document (PDD), including work to: establish carbon baseline, social and economic assessment of the drivers of deforestation; define project activities; analyze financial costs and legal issues; stakeholder consultations; and identification and/or development of project methodology;
- (v) Identification of co-benefits provided by forests;
- (vi) Validation of each project by third party auditor and registration of project to comply with standards (e.g. WPM or CCB standards); and
- (vii) Beginning implementation of community-based forest restoration and protection activities, such as training communities in sustainable harvesting of forests, developing seedling nurseries and improving fire protection to reduce deforestation and re-planting of forests (see also activities under Output 2.1 (c)).

162. Co-financing from the GoT, the Forest Carbon Partnership Fund (FCCPF) and the Greater Mekong Sub-region (GMS) Core Environment Program will support the DNP in preparing Thailand's REDD+ Readiness Preparation Proposal (R-PP).

Component 3: Improved local education, awareness and participation

163. Implementation of this component will be directed through two **outputs**, as follows:

Output 3.1: Community education and outreach

164. Work under this output will focus on: (a) establishing a core team of community liaison/outreach officers (or equivalent) in TYE and TYW; and (b) developing and implementing an education and outreach programme across the WHS. This output is closely linked to, and will complement and support the implementation of, activities under Output 2.1 ('Community livelihood assistance').

165. The specific activities to be implemented in support of this output include the following:

- (i) Contract, train and equip (uniforms and vehicles) a TYE and TYW community liaison and outreach team – comprising two community liaison and two community outreach officers – to assist in the

- implementation of communication, education, social development and economic development activities in the enclave communities of TYE and TYW;
- (ii) Develop an integrated education and outreach programme for the WHS;
 - (iii) Design and print information and educational materials, including *inter alia*: posters, calendars, cartoon books, stickers, and school booklets for use in schools in and around the WHS;
 - (iv) Develop informational and educational materials for different media and media practitioners, including *inter alia*: community radio stations, WHS and other popular websites (e.g. pantip.com, sanook.com, thairath.co.th, and mathichon.co.th), environmental journalists, radio and television commentators;
 - (v) Develop and present informational and awareness-raising ‘road shows’ – using mobile environmental education unit/s - in the targeted enclave and buffer zone villages;
 - (vi) Implement an advocacy campaign in the local restaurants around the WHS buffer area that encourages voluntary compliance with legislation regarding the selling for consumption of illegal wildlife and plant materials; and
 - (vii) Establish information and education facilities and services in and around the TYW headquarters, including establishing a visitor information centre in the existing TYW HQ building and developing the 2.5km Takien Thong Nature Trail.
 - (viii) Host educational day visits and camps for schools.

Output 3.2: Participatory management

166. Work under this output will focus on strengthening the existing Protected Area Committees (PACs) of the three Wildlife Sanctuaries to ensure that they: (i) facilitate meaningful participation in the reserve management planning and decision-making; (ii) can collectively enforce the village-based Conservation Agreements; (iii) provide an accessible and transparent dispute-resolution mechanism for communities and WS management; (iv) are more representative of the interests of local enclave and buffer villages and communities; (v) identify and actively support social and livelihood development opportunities in the enclave villages and villages in the buffer zone; (vi) optimise opportunities for local community ‘beneficiation’ from the conservation and use of the WS; and (vii) meet on a more regular basis. The capacity of community representatives to participate equitably in PAC meetings, and to effectively represent the interests of the villages they represent, will be developed through focused training and capacity building programs.

167. GEF funding will be used to finance consultancies, workshops, PAC meeting and training and capacity-building.

Key Indicators, Risks and Assumptions

168. The project indicators are detailed in the Strategic Results Framework which is include in Section II of this Project Document.

169. Project risks and risk mitigation measures are described in Table 6 below.

Table 6: Risk Analysis

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
ENVIRONMENTAL Not all of the local forest-dependent communities (i.e. the 14 enclave villages inside TYE and TYW, and the 29 buffer	HIGH	MODERATELY LIKELY		A proactive communication plan and incentives to address the illegal wildlife trade and enhance conservation, including impacts from deforestation, will be developed and adjusted proactively. In addition, local communities and indigenous people (i.e. Karen villages) have participated in project design and will continue to participate during project

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
zone villages east of the HKK boundary) will voluntarily cooperate with the conservation authorities in addressing the threats of deforestation (from shifting cultivation and monoculture) and poaching in the HKK-TY WHS.				<p>implementation through the consultation process. A livelihood development program, an incentives tool and a mechanism for wildlife conservation and reduced emissions from deforestation and forest degradation will be designed in close consultation with the indigenous people (IP) and local communities to get their buy-in and participation. Additionally, it is expected that the livelihood assistance provided through the project will assist to get community interest and buy-in to conservation.</p> <p>Maps with clear allowable forest utilization zones have already been developed for most of the enclave villages in TYE and TYW, and will continue to be finalised for any outstanding enclave villages. These maps will then be used to then negotiate conservation agreements (CA) with each village to define the approved livelihood activities for each land use category in each village. These agreements will then be jointly enforced by DNP and the village leadership. The project will actively promote and support the development of community forestry and nature-based tourism enterprise development in the HKK buffer villages in order to protect the remaining NFR forests in the buffer zone.</p> <p>A peer-to-peer educational process to inform and educate local communities about the impacts of their current agricultural practices and inform about alternative conservation-friendly livelihoods which have been proven successful elsewhere in the country.</p> <p>Further, awareness raising activities in local communities aims to raise community interest in conservation. Work with schools will change the current education curriculum to integrate local/IP wisdom and knowledge with regards to agricultural practice and forest and wildlife conservation. Even where illegal poaching and deforestation activities are still occurring, albeit at a lesser intensity, the project is supporting the scaling up of the SMART ranger patrol system to significantly improve the monitoring and enforcement capability of the wildlife sanctuaries.</p>
<p>INSTITUTIONAL The Department of National Parks, Wildlife and Plant Conservation (DNP) is unable to solicit the support, and coordinate the efforts, of other organs of state (at national, provincial and local government levels) in the implementation of project activities in the HKK-TY WHS buffer areas due its limited mandate in the enclave and buffer zone areas.</p>	MODERATE	MODERATELY LIKELY		<p>A National Project Board with representatives from relevant ministries will be established to support, supervise and monitor the overall implementation of the project.</p> <p>The project will also facilitate the establishment and maintenance of coordination mechanisms among the different responsible authorities (including the RTP, RFD, ALRO, PAOs, TAOs and MTS) and NGOs/CBOs at the national, provincial and district levels, and promote the institutionalization – if required - of such coordination.</p> <p>The DNP shall appoint a National Project Director (NPD) to oversee the project planning and implementation. This NPD will establish a working group –comprising representatives from relevant agencies - for each of the three components (notably for components 2 and 3) as a cooperative mechanism to facilitate inter-agency coordination and cooperation in the planning and implementation of project activities.</p> <p>Accountability relationships between agencies will be clearly defined.</p> <p>The proactive disclosure of important information on project activities and agency performance during project implementation, and the promotion of a communication strategy to improve transparency and demand for good</p>

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
				governance, will be encouraged.
FINANCIAL Income-generating mechanisms supported by the project (carbon project and community-based tourism enterprise) do not generate sufficient revenues for reinvestment back into the conservation of the WHS.	LOW	HIGHLY LIKELY		<p>The RTG recognises that the HKK-TY WHS has limited opportunities for generating income - from large-scale nature-based tourism enterprises (due to the legal constraints of the Wildlife Sanctuary protected areas designation). The strategic logic for the projects focus on community-based tourism is rather to incentivise communities living in the buffer areas to develop business opportunities that can complement, and link directly to, the core conservation objectives of the WHS (this strategic logic also underpins the focus on supporting community forestry activities in the buffer area).</p> <p>More extensive feasibility work is required to assess whether forest carbon financing projects in Thailand are technically feasible and financially sustainable. This project aims to use the HKK-TY WHS and its buffer areas to test this feasibility. While it remains unclear whether carbon projects in Wildlife Sanctuaries are actually financially viable, if they are the HKK-TY WHS (and perhaps the entire area of WEFCON) would be well placed to immediately initiate and implement a carbon project (linked to a WPM) once the RTG have developed its national REDD+ strategy and action plan.</p> <p>The project will also support the development of a Financial Plan for WHS which will evaluate the feasibility of a range of additional funding mechanisms/tools for the WHS. Based on the results of this evaluation, a set of key actions that will be required to mobilize financial resources for, and build financial capacity will be prepared.</p>
ENVIRONMENTAL The effects of climate change further exacerbate the fragmentation of forest ecosystems in the HKK-TY WHS and surrounding buffer areas, leading to an increase in the vulnerability of rare and threatened forest species	LOW	UNLIKELY		<p>The impact of climate change regarding habitat fragmentation and degradation of forests during the project period are expected to be minimal. Further, the WHS is situated within the larger Western Forest Complex which is made up of a number of protected areas.</p> <p>Climate change may result in the increase of more frequent fires that may result in the localised fragmentation of forests and corridors wildlife use to move between forest complexes. The project will thus support the development and implementation (in part) of a fire management plan for the WHS to mitigate the undesirable ecological effects of destructive fires. Further, the project will work closely with villages and communities to identify and support the implementation of alternative land use practices that could reduce the scale and impacts of a damaging fire regime under different climate change scenarios.</p>

Incremental Reasoning and Expected Global, National and Local Benefits

170. The long-term solution for one of Thailand's most important biodiversity areas, the Huai Kha Khaeng-Thung Yai World Heritage Site (HKK-TY WHS) - comprising three contiguous wildlife sanctuaries: Thung Yai West (TYW); Thung Yai East (TYE); and Huai Kha Khaeng (HKK) - is one where: (i) legally secure and effectively demarcated Wildlife Sanctuaries are configured to ensure that populations of forest habitats and forest species can persist in the wild; (ii) a mandated and fully accountable management institution is responsible for the efficient and cost-effective management of these Wildlife Sanctuaries; (iii) individual Wildlife Sanctuaries are sufficiently staffed, adequately resourced and sustainably funded to achieve their defined management objectives; and (iv) communities living in villages located in and around the Wildlife

Sanctuaries live in harmony with, and sustainably utilise, the unique natural resources of the area. Through this project, the area of work undertaken in the ‘business-as-usual’ scenario with largely national / local benefits will as a result of the GEF investment have substantial global benefits, including increased numbers of globally endangered and charismatic species namely tiger.

171. *Without the GEF investment*, the ‘business-as-usual’ scenario for the HKK-TY WHS in the next few years is one where: (i) the coverage and intensity of ranger patrols in HKK, TYE and TYW remains constrained by the availability of suitably trained and properly equipped trained ranger staff, with the concomitant increase in poaching incidents in poorly patrolled areas; (ii) the coverage of the monitoring efforts is unevenly distributed, leading to a spatial bias of information on tigers and tiger prey; (iii) the success of prosecutions relating to illegal trade in tigers is limited due to the lack of wildlife forensic science capabilities; (iv) fire-fighting capacity and skills are utilitarian, leading to reactive fire management responses; (v) limited incentives to encourage the adoption of more biodiversity-friendly land and natural resource use practices in the enclave and buffer zone villages result in continued forest degradation and deforestation; (vi) weak cooperative governance, limited benefit-sharing and a conservation approach dominated by enforcement, results in continued low levels of collaboration by local communities in improving the protection of forests and wildlife; (vii) a high dependency on state budget allocations for the management of the wildlife sanctuaries, leading to limited budget for capital investments and innovations in management; (viii) sporadic and uncoordinated education, awareness and outreach programmes in the enclave and buffer zone villages remain focused on schools, leading to continued low environmental awareness levels in the adult village populations.

172. *Alternative scenario enabled by the GEF*: The incremental GEF funding will support the implementation of a suite of complementary activities to contain and reverse the current extent of forest degradation and fragmentation, and reduce the intensity of poaching threats to tigers and other key faunal species, in the HKK-TY WHS. GEF resources will be used to strengthen the management, and improve the financial sustainability, of the HKK-TY WHS. GEF funding will support the development and implementation of mechanisms to incentivise surrounding communities living in and around the HKK-TY to better protect the biodiversity of the World Heritage Site and to adopt more sustainable land use and forestry management practises in the adjacent buffer areas. Finally, GEF financing will be used to implement measures to reduce greenhouse gas (GHG) emissions in the HKK-TY WHS and its buffer areas by reducing the burning of forests and enhancing the protection of forests in order to increase levels of carbon storage. Collectively the GEF investment in the project will result in best practice management of critical wildlife and their habitats, including Indochinese Tiger and prey, at this key tiger source site of south-east Asia.

173. The project has been organised into *three components*, and will be implemented over a period of five years. The *first component* of the project is directed towards strengthening and scaling up existing best-practice management activities, and developing and testing innovative approaches to enforcement and compliance, in the HKK-TYN WHS. It will strive to reduce the direct threats to tigers and their prey, improve effectiveness of wildlife sanctuary management, and enhance the use of data and information to support key management decision-making. The *second component* of the project is focused on linking sustainable livelihood development in the enclave and buffer zone villages with specific conservation outcomes, and improving economic links between the buffer zone and enclave villages and the Wildlife Sanctuaries. It will seek to achieve these linkages by promoting incentives (including technical support and grant funding for sustainable livelihood initiatives, ecotourism development and piloting a REDD+ Wildlife Premium carbon project) for community-based sustainable forest management, environmentally-friendly agricultural practices, nature-based tourism and education and improved wildlife and habitat protection. The *third component* of the project is directed towards raising the awareness in communities living in and around the WHS of the need to conserve, and the importance of protecting, the forest landscapes and associated wildlife. With the iterative recognition in these communities of the intrinsic value of the forest habitats and wildlife, work under this component will assist in strengthening the representation of the buffer and enclave communities in each of the Wildlife Sanctuary’s Protected Area Committees (PACs). With improved community-based representation on the PAC, the project will assist in building the capacity (information, knowledge, skills) of each of the community

representatives to assure a constructive and meaningful contribution to the co-management of the three Wildlife Sanctuaries.

174. *Global Environmental Benefits:* By implementing the above-mentioned components, the GEF investment will significantly contribute to the protection of 6,427 km² of forests (Montane Evergreen forests - 964km²; Seasonal/ Dry Evergreen forests - 1,928km²; Mixed Deciduous forest – 2,892 km²; Dry Dipterocarp forest – 64km²; Gallery Evergreen forests and Savanna forest – 579 km²) and grassland (257 km²). The project will result in an improvement in the conservation security of, and a reduction of threats to, a faunal mix of species with Indo-Chinese, Indo-Burmese and Sino-Himalayan affinities. This includes: approximately half of Thailand's tiger population; three National Reserved Wildlife Species (the wild water buffalo, the mainland serow and the hog deer); the Asiatic wild dog; leopard; clouded leopard; Asian elephant, estimated to number just 150-200 animals; Asian tapir and Fea's muntjac. The occupancy rate of Tigers and select tiger-prey species will increase, on average, by more than 10% over the life of the project. The project will deliver an average decrease of 4% in the annual deforestation rate and an estimated avoided forest and forest degradation of 985 ha and 249,969 tonnes of CO₂eq.in the WHS, enclave villages and HKK buffer areas.

Cost Effectiveness

175. Despite common agreement that it is important to conserve biodiversity, the total areas under effective protection are often less than optimal while levels of funding are almost always insufficient to carry out such works.³¹ This 'market failure' problem need not occur if the total benefits of biodiversity are fully known and recognized. Unfortunately, in practice, the total benefits of biodiversity are usually grossly underestimated leading to insufficient protection, over-exploitation, and under-compensation. Because biodiversity provides global as well as local benefits, international organizations, communities, and governments all have important roles to play to correct this market failure.

176. Benefits of biodiversity conservation are estimated using the total economic value (TEV) approach, which takes into account the use and non-use values of biodiversity. Economic internal rate of return analysis (EIRR) is carried out to evaluate the economic returns from project activities. EIRR can be used to compare the cost of funds for the project with its return. If the EIRR is higher than the cost of funds, then the project is economically attractive. The average cost of funds for the public sector, measured by average government bond yield³² is 3.76 percent per annum. On the other hand, the private sector cost of funds, measured by average minimum lending rate, MLR, is 6.8 percent per annum. These costs of funds can be compared to the estimated EIRR to decide whether to invest in project activities or not.

177. Since the project aims to stabilize and reduce the deforestation rate, and stabilize wildlife populations, within the project area, the TEV of the project will only include benefits accrued in the forest area, including habitat and wildlife that would have been saved by project activities. Assuming the project's impact period is 30 years, the EIRR of the project is 9.37 percent, which is higher than both public and private cost of funds. This result is robust even when subjected to a sensitivity analysis with respect to key variables, namely, carbon prices, target reduction in deforestation rates, option and existence values, and operation and maintenance expenses. Detailed analysis can be found in Section IV, Part II of the project document.

178. The project will seek to achieve a catalytic investment in securing the long-term sustainability of the Huai Kha Kaeng-Thung Yai Naresuan WHS. Costs incurred in project implementation will focus only on those additional actions necessary to strengthen the capacity of the WCO and partners to effectively manage the areas, as well as development of the necessary incentives to ensure communities living in/adjacent to the areas benefit from the conservation of the area and therefore are accommodating in a sense that their lifestyles do not have a negative effect on the area's forest habitat. To accomplish this, the project will seek to complement and build

³¹ Dixon, J.A. and P.B. Sherman, 1991, "Economics of Protected Areas," *Environmental Economics*, Vol. 20, No. 2, pp. 68-74.

³² Average government bond yield (with different maturities), as of May 23, 2013 are based on data from Thai Bond Market Association. Average (2009 – 2013) annual commercial banks' MLR are calculated using data from Bank of Thailand.

upon the extensive baseline activities already underway in the area (e.g. SMART patrolling system). Wherever possible, the project will use the competencies and technical skills within the mandated government and its partner institutions to implement project activities. Where applicable, project resources will also be deployed to strengthen and expand existing initiatives and programmes to avoid duplication of effort. Increased co-financing commitments will continue to be targeted by the project during the project implementation.

Project consistency with national priorities/plans

179. The project is consistent with Thailand's GEF strategy of providing support to the implementation of the 10th National Economic and Social Development Plan (NESDP, 2007-2011), which includes focus on holistic development within the framework of sustainable development, including sustainable natural resources and environmental management. The project is in line with the direction of the NESDP 2012-2016, which aims to 'create socio- economic security through strengthening production of goods and services based on knowledge, creativity and environmental friendliness, improving social protection for better coverage, and ensuring food and energy security.' The Plan's Development Strategy 6, in particular, gives emphasis to managing natural resources and environment towards sustainability.

180. The project aligns with Thailand's GEF National Portfolio Formulation Document (NPFD MONRE 2011). It is explicitly identified as 'Project 10' in 'Table 1, Proposed Projects' of the NPFD.

181. The project is in full conformity with Thailand's National Biodiversity Strategy and Action Plan (NBSAP, 2008-2012), especially with Strategy 2: Encouraging the Sustainable Use of Biodiversity, including the action plan on sustainable use of biodiversity.

182. The GEF project is fully consistent with Thailand's Second National Communication to the UNFCCC, which states that increasing carbon sinks from forest areas is one of the priority mitigation activities.

183. This project is closely aligned to Thailand's National Tiger Recovery Program (NTRP), which reflects the goals of the Global Tiger Recovery Program (GTRP). The project will directly support the implementation of the 'National Activities' in the 'GTRP Implementation Priorities', including: i) establish and run the Regional Tiger Conservation and Research Center at Huai Kha Khaeng Wildlife Sanctuary; ii) develop a full-size project proposal for funding from the donor; and iii) develop a full REDD+ funding strategy for the Dawna Tenasserim landscape.

184. The project's REDD+ pilot is an integral part of the Thailand national Forest Carbon Partnership Facility (FCPF) process, providing the first such pilot for Thailand. The two projects - FCPF and the REDD+ pilot - will work in parallel to develop strategies for methodologies and mechanisms for benefit sharing.

Sustainability and Replicability

185. Project sustainability will depend ultimately on ownership of the project by the GoT and its commitment to continue to fund protected area management, support community co-management, and tackle illegal wildlife trade. The GoT has shown significant commitment to managing the WHS, as evidenced by past and current funding. GEF funds will allow the GoT to significantly improve efficiency and effectiveness of WHS management, and decrease poaching and habitat loss from outsiders and enclave and buffer zone communities; through increased protection and enhanced local community participation in management, including through the application of indigenous knowledge. As such, a sustainable conservation outcome will be achieved through management efficiency and threat alleviation.

186. Beyond project completion, sustainability of project interventions is being ensured on several levels. At the national level, mainstreaming of the project is enhanced through establishment of a Project Board where knowledge and experience are exchanged. The PMU/PIUs will be embedded in existing institutions with an emphasis on mainstreaming practices and standards during implementation. Policy development that enables participatory management will further add to sustainability of the co-management approach.

187. Integrating local enclave and buffer zone communities in protected area management and planning through community development working groups and regular meetings, as well as providing benefits through livelihood development activities, employment opportunities (patrolling and wildlife monitoring), and ecotourism, will leverage support for, and engagement in, sustainability of the wildlife sanctuaries.

188. To address potential funding risks after project completion, the project will pursue the following: (i) maintaining a dialogue with concerned government agencies on future budget allocations to implementing agencies; (ii) enabling future partnerships between the implementing agency and international NGOs and global initiatives; (iii) ensuring that project supported activities are community-based to ensure local ownership; and (iv) exploring potential alternative and parallel financing sources from the private sector through Corporate Social Responsibility (CSR), the voluntary domestic carbon market through REDD+ and Wildlife Premium mechanism, and nature-based tourism.

189. **Replication** will be achieved through the direct replication of selected project elements and practices and methods, as well as the scaling up of experiences. The project will specifically use the lessons learnt from the experience and outcome of the pilot of REDD+ and Wildlife Premium Mechanism in the roll-out of a diversified suite of financing mechanisms across the entire national protected area system.

190. Each project output will include the documentation of lessons learnt from implementation of activities under the output, and a collation of the tools and templates (and any other materials) developed during implementation. The Project Manager will ensure the collation of all the project experiences and information. This knowledge database will then be made accessible to different stakeholder groups in order to support better future decision-making processes in protected areas.

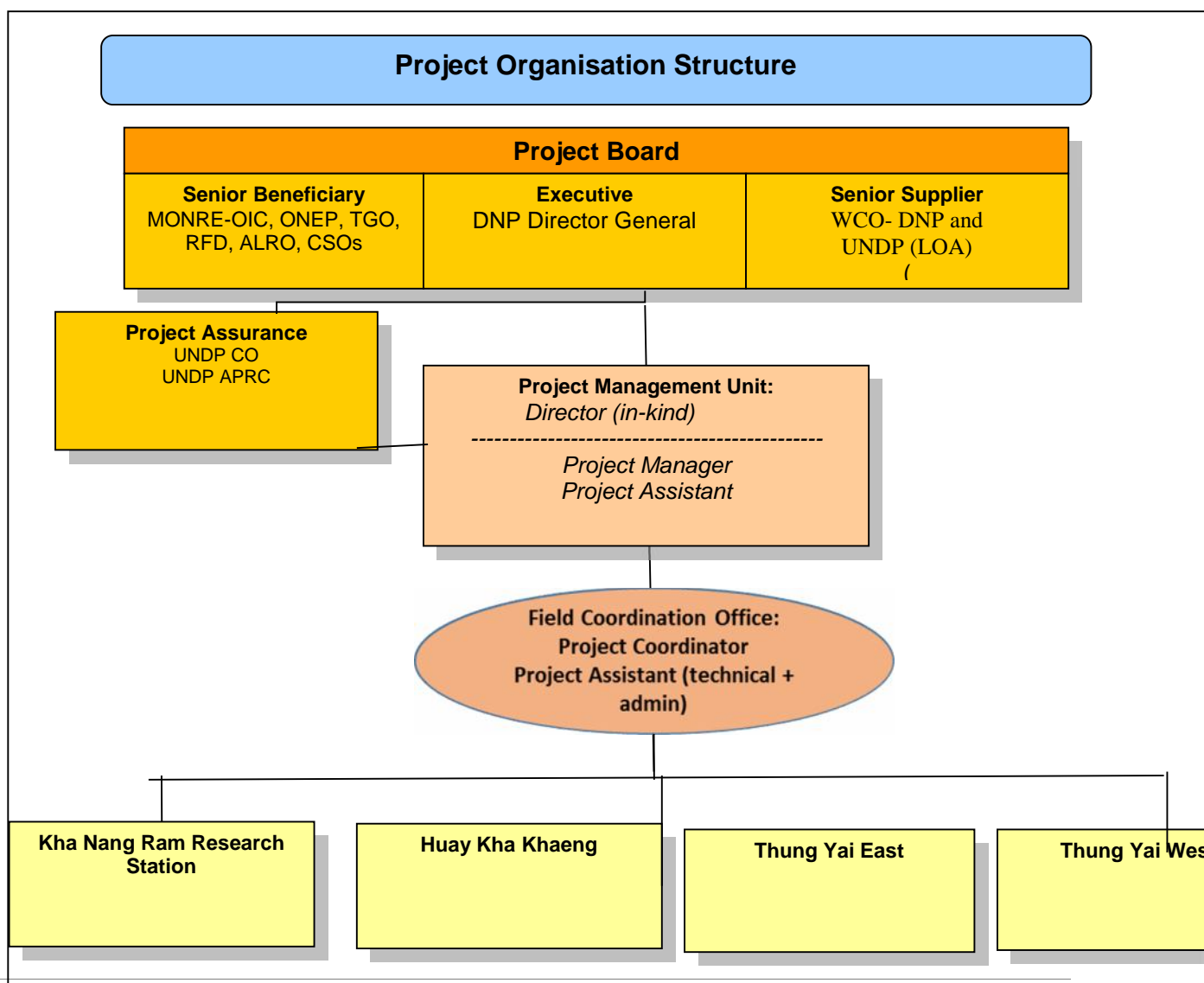
PART III: MANAGEMENT ARRANGEMENTS

Project Implementation Arrangement

191. The project will be implemented over a period of five years.

192. The UNDP Country Office will monitor the implementation of the project, review progress in the realisation of the project outputs, and ensure the proper use of UNDP/GEF funds. Working in close cooperation with DNP, the UNDP Country Office (CO) will provide support services to the project - including procurement, contracting of service providers, human resources management and financial services - in accordance with the relevant UNDP Rules and Procedures and Results-Based Management (RBM) guidelines.

193. The project will be nationally implemented (NIM) by the Wildlife Conservation Office (WCO) under the Department of National Parks, Wildlife and Plant Conservation (DNP), within the Ministry of Natural Resources and Environment (MONRE), in line with the UNDP Country Programme Document (2012-2016) and the RTG - United Nations Partnerships Framework (UNPAF, 2012-2016). UNDP will provide some of the support services to facilitate the implementation through a Letter of Agreement between DNP and UNDP.



194. Following the programming guidelines for national implementation of UNDP supported projects, the DNP will sign the Project Document with UNDP and will be accountable to UNDP for the disbursement of funds and the achievement of the project objective and outcomes, according to the approved work plan.

195. The DNP-WCO, as the Implementing Partner (IP), will be responsible for the following functions: (i) coordinating activities to ensure the delivery of agreed outcomes; (ii) certifying expenditures in line with approved budgets and work-plans; (iii) facilitating, monitoring and reporting on the procurement of inputs and delivery of outputs; (iv) coordinating interventions financed by GEF/UNDP with other parallel interventions; (v) approval of tender documents for sub-contracted inputs; and (vi) reporting to UNDP on project delivery and impact. It will also be directly responsible for creating the enabling conditions for implementation of all project activities.

196. The DNP-WCO will designate a senior staff member as a Project Director (PD). The PD will provide the strategic oversight and guidance to project implementation³³. The PD may constitute three small Reference Groups (one for each of the three project components) to assist in reviewing and monitoring project implementation and progress. It will also work with WCS and SNF as partners in delivering some of the key outcomes as specified in the project strategy.

197. The day-to-day administration of the project will be carried out by a national Project Manager (PM – based in Bangkok), with the support of a Field Coordinator (FC - based in the HKK-TY WHS) and two Project Administrative Assistants (PAA), one of whom is part-time (based in Bangkok) and one full-time (based in HKK-TY WHS). Collectively the PM, FC and PAAs comprise the Project Management Unit (PMU). The PM has the authority to administer the project on a day-to-day basis on behalf of the DNP-WCO, within the constraints laid down by the Project Board (PB). The PM's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The PM will prepare Annual Work Plans (AWP) in advance of each successive year and submit them to the Project Board for approval. The PM will liaise and work closely with all partner institutions to link the project with complementary national programs and initiatives. The PM is accountable to the PD for the quality, timeliness and effectiveness of the activities carried out, as well as for the use of funds. The FC and PAAs will provide professional, technical and administrative support to the PM, as required. The terms of reference for the PM, FC and PAAs are detailed in Section IV, Part III.

198. The PM will also be technically supported by contracted national and international consultants and companies. Recruitment of specialist support services and procurement of any equipment and materials for the project will be done by the PM, in consultation with the PD and in accordance with relevant recruitment and procurement rules and procedures. The terms of reference of the key national and international consultants to be contracted by the project are detailed in Section IV, Part III.

199. The DNP-WCO will delegate technical implementation of the relevant project activities to the Wildlife Sanctuary management teams.

200. A Project Board (PB) will be constituted to serve as the executive decision making body for the project. While the final composition of the PSC will be determined at the Project Inception Workshop (see Section I, Part IV), it may include representation from the DNP, RFD, TGO, ALRO, WCS, WWF, SNF and BAAC. The PB will meet at least twice per annum (more often if required). The PB provides overall guidance and policy direction to the implementation of the project, and provides advice on appropriate strategies for project sustainability. The Project Board will play a critical role in project monitoring and evaluation by quality assuring the project processes and products. It will arbitrate on any conflicts within the project, or negotiate a

³³ The PD will not be paid from the project funds, but will represent a Government in-kind contribution to the Project.

solution to any problems with external bodies. It will also approve the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

201. The PM will produce an Annual Work Plan (AWP) to be approved by the PB at the beginning of each year. These plans will provide the basis for allocating resources to planned project activities. Once the PB approves the AWP, this will be sent to the UNDP Regional Technical Advisor for Biodiversity at the GEF Regional Coordinating Unit (RCU) for clearance. Once the AWP is cleared by the RCU, it will be sent to the UNDP/GEF Unit in New York for final approval and release of the funding. The PM will further produce quarterly operational reports and Annual Progress Reports (APR) for review by the PB, or any other reports at the request of the PB. These reports will summarize the progress made by the project versus the expected results, explain any significant variances, detail the necessary adjustments and be the main reporting mechanism for monitoring project activities.

Financial and other procedures

202. The financial arrangements and procedures for the project are governed by the UNDP rules and regulations for National Implementation Modality (NIM). All procurement and financial transactions will be governed by applicable UNDP regulations under NIM.

Audit Clause

203. 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 recognized auditor of the Government, or by a commercial auditor engaged by the Government.

PART IV: MONITORING AND EVALUATION FRAMEWORK

Monitoring and reporting

204. The project will be monitored through the following Monitoring and Evaluation (M&E) activities.

Project start-up:

205. A Project Inception Workshop will be held within the first 4 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

206. The Inception Workshop should address a number of key issues including:

- a) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and the UNDP/GEF Regional Office vis-à-vis the project team. Discuss the 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 will be discussed again, as needed.
- b) Based on the project results framework and the relevant GEF Tracking Tool, if appropriate, finalize the first AWP. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- c) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- d) Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- e) Plan and schedule Project Board meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

207. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

Quarterly:

-) Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
-) Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high.
-) Based on the information recorded in Atlas, a Project Progress Report (PPR) can be generated in the Executive Snapshot.
-) Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

208. Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period. The APR/PIR combines both UNDP and GEF reporting requirements.

209. The APR/PIR includes, but is not limited to, reporting on the following:

-) Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
-) Project outputs delivered per project outcome (annual).

-) Lesson learned/good practice.
-) AWP and other expenditure reports
-) Risk and adaptive management
-) ATLAS QPR
-) Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits:

210. UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

211. The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; 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 organization, 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 evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#).

212. The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

213. An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

214. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#).

215. The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

216. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing:

217. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

218. 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, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

219. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Communications and visibility requirements

220. Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

221. Full compliance is required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

Monitoring and Evaluation Budget and Work Plan

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> Project Manager UNDP CO, UNDP GEF 	Indicative cost: \$6,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> Oversight by Project Manager Project team 	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/PIR	<ul style="list-style-type: none"> Project manager and team UNDPCO UNDP RTA UNDP EEG 	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> Project manager and team 	None	Quarterly

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Mid-term Evaluation	<ul style="list-style-type: none"> Project manager and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	Indicative cost: \$40,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> Project manager and team, UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	Indicative cost: \$45,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> Project manager and team UNDP CO local consultant 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> UNDP CO Project manager and team 	Indicative cost (per time): \$6,000x2 = 12,000	Once every two years
Visits to field sites	<ul style="list-style-type: none"> UNDP CO UNDP RCU (as appropriate) Government representatives 	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 103,000	

PART V: LEGAL CONTEXT

222. The Royal Thai Government and the United Nations Special Funds have entered into the Agreement to govern assistance from the Special Fund to Thailand, which was signed by both parties on 04 June 1960. Pending the finalization of the Standard Basic Assistance Agreement (SBAA) between UNDP and the Government, the Agreement will govern the technical assistance provided by UNDP Thailand under the Country Programme Document (2012-2016).

223. Under the UNDP-funded programmes and projects, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner in accordance with the aforementioned Agreement between the UN Special Fund and the Government of Thailand concerning Assistance from the Special Fund 1960.

224. The implementing partner shall:

- a) Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the Programme is being carried;
- b) Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

225. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

226. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Programme Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Programme Document.

SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF)

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
Project Objective: To improve the management effectiveness of, and sustainable financing for, Huai Kha Khaeng-Thung Yai Naresuan (HKK-TYN) World Heritage Site and incentivise local community stewardship	METT Scores of HKK, TYE and TYW Wildlife Sanctuaries	HKK: 67% TYE: 75% TYW: 60%	HKK: 71% TYE: 77% TYW: 68%	Project review of METT Scorecards	Assumptions: Z The government continues to invest in improving the management of the WHS, as part of its strategy to conserve the forest ecosystems, forest habitats and rare and threatened forest fauna in the WEFCON. Z Communities living in and around the three wildlife sanctuaries respect the sanctity, and derive value from the conservation, of these sanctuaries. Risks: Z Not all communities cooperate with the conservation authorities in addressing the key threats of deforestation and poaching in the WHS. Z The DNP is unable to solicit the support, and coordinate the efforts, of other organs of state, due its limited mandate in the villages around the WHS. Z Income-generating mechanisms do not generate sufficient revenues for reinvestment back into the conservation of the WHS Z The effects of climate change further exacerbate the fragmentation of forest ecosystems, leading to an increase in the vulnerability of rare and threatened forest species.
	Financial sustainability scorecard for the WHS	TBD	TBD	Project review of Financial Sustainability Scorecard	
	Capacity development indicator score for DNP (Wildlife Conservation Office)	Systemic: 67% Institutional: 64% Individual: 61%	Systemic: 69% Institutional: 65% Individual: 68%	Project review of Capacity Development Indicator Scorecard	
	Number of villages (of the 43 targeted enclave and buffer zone villages) directly benefiting from community-based livelihood activities that contribute to reducing the extent and intensity of threats to the HKK-TY WHS	0	>28	Project record of technical support and sub-grant funding agreements	

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
Outcome 1 Strengthening on-ground conservation actions and wildlife protection	Outputs: 1.1 Wildlife and habitat protection. 1.2 Resource monitoring and information management. 1.3 Training and capacity development				
	Number of tigers/100 km ² in the three wildlife sanctuaries	HKK: 2.3 TYE: 0.7 TYW: 1.3	HKK: 2.7 TYE: 0.9 TYW: 1.5	Wildlife monitoring survey reports	Assumptions: Z The SMART patrol system is maintained across the three wildlife sanctuaries Z The DNP allocates adequate budget for the ongoing running costs and maintenance of project-procured infrastructure and equipment. Z The wildlife sanctuaries sustain current ranger patrol and wildlife monitoring efforts in the WHS Z The security and integrity of the tiger DNA database is protected Risks: Z Not all communities cooperate with the conservation authorities in addressing the key threats of deforestation and poaching in the WHS. Z The effects of climate change further exacerbate the fragmentation of forest ecosystems, leading to an increase in the vulnerability of rare and threatened forest species.
	Aggregate occupancy index (number/km ²) of select tiger prey species (sambar; gaur; banteng) and elephant in the three wildlife sanctuaries	HKK: 6.5 TYE: 9 TYW: 13	HKK: 8 TYE: 11 TYW: 17	WHS wildlife monitoring survey reports	
	Number of poacher encounters per annum reported by ranger patrol staff from HKK, TYE and TYW	HKK: 84 TYE: 72 TYW: 96	HKK: 76 ³⁴ TYE: 65 TYW: 86	SMART patrol data Wildlife sanctuary monthly and annual reports	
	Areal coverage (as a % of total WHS area) of the ranger patrols in the WHS	60%	>90%	SMART patrol data	
	Number of wildfire incidences per annum in the WHS	TBD	TBD	Wildlife sanctuary monthly and annual reports	
	Number of tigers (captive and wild) with a documented DNA record	Captive: 0 Wild: 0	Captive: 1,250 Wild: 500	DNA tiger database	

³⁴ It is anticipated that there will be an initial increase in number of poachers encountered as the patrols are increased, but that by the end of the project the poachers will be aware of the increased patrolling and therefore reduced their activity within the WHS.

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
	Coverage (as a % of total area) of the wildlife monitoring program in the wildlife sanctuaries	HKK: 60% TYE: 30% TYW: 30%	HKK: >70% TYE: >40% TYW: >40%	WHS wildlife monitoring survey reports	
	Number of staff of HKK, TYE and TYW who receive (a) refresher training and (b) train-the-trainer training,	Refresher: 0 Train-the-trainer: 0	Refresher: 470 Train-the-trainer: 40	Record of training course Wildlife sanctuary monthly and annual reports	
	Percentage of temporary ranger staff across the three wildlife sanctuaries who have adequate death and disability insurance cover	36%	100%	Insurance policy documentation	
Outcome 2 Incentives and sustainable financing for wildlife conservation and forest protection	Outputs: 2.1 Community livelihood assistance. 2.2 Nature-based tourism development 2.3 REDD+ and Wildlife Premium Mechanism				
	Number of villages with signed Conservation Agreements	0	>28	Conservation agreements	Assumptions: Z Village leadership structures are stable and representative of the interests of the villages Z Village populations remain relatively stable Z The RFD registers community forests timeously Risks: Z Not all communities cooperate with the conservation authorities in addressing the key threats of deforestation and poaching in the
	Area registered as community forest in the HKK buffer zone	1,029 ha	1,338 ha	Community forest registration certificates	
	Number of people (of which percentage are female) living in the enclave villages of TYE and TYW who are direct recipients of project grant funding support	0 (0)	175 (60)	Project record of sub-grant funding agreements	

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
	Direct project beneficiaries living in buffer villages (of which percentage are female) who are direct recipients of project grant funding support	0 (0)	300 (60)	Project record of sub-grant funding agreements	WHS. Z The DNP is unable to solicit the support, and coordinate the efforts, of other organs of state, due its limited mandate in the villages around the WHS.
	Financial, Tourism and Integrated Fire Management plans for the WHS are in place	Financial: No Tourism: No Fire: No	Financial: Yes Tourism: Yes Fire: Yes	Approved plans	Z Income-generating mechanisms do not generate sufficient revenues for reinvestment back into the conservation of the WHS Z The effects of climate change further exacerbate the fragmentation of forest ecosystems, leading to an increase in the vulnerability of rare and threatened forest species.
	Avoided forest and forest degradation (ha and tonnes of CO ₂ eq.) in the WHS, enclave villages and HKK buffer areas	0 0	985 ha 249,969 tonnes of CO ₂ eq.	Remote sensing data and ground-truthing reports Carbon monitoring reports	
	Annual deforestation rate (%) in the WHS, enclave villages and HKK buffer areas	0.76% per annum	0.62% per annum	Remote sensing data and ground-truthing reports	
Outcome 3 Improved local education, awareness and participation	Outputs: 3.1 Community education and outreach 3.2 Participatory management				
	Number of WS community liaison and outreach staff working in targeted enclave and buffer zone villages	<21	29	Wildlife sanctuary organograms and annual reports	Assumptions: Z DNP continues to support, and strengthen the role of, PACs for wildlife sanctuaries Z DNP encourages the adoption and expansion of outreach and extension programmes in wildlife sanctuaries
	Number of schools using WHS-based education and information materials	0	20	Project reports	

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
	Number of informational and educational road shows presented per annum using the mobile environmental education units	0	144/annum	Project reports	Risks: Z Not all communities cooperate with the conservation authorities in addressing the key threats of deforestation and poaching in the WHS. Z The DNP is unable to solicit the support, and coordinate the efforts, of other organs of state, due its limited mandate in the villages around the WHS.
	Number of PACs with full representation and involvement of enclave and buffer zone villages	0	3	Minutes of PAC meetings	