



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Conserving Habitats for Globally Important Flora and Fauna in Production Landscapes		
Country(ies):	Thailand	GEF Project ID:	TBD
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4839
Other Executing Partner(s):	Office of Natural Resources and Environmental Policy and Planning (ONEP) and Zoological Park Organization (ZPO), under the Ministry of Natural Resources and Environment (MONRE)	Submission Date:	2 August 2013
GEF Focal Area (s):	Biodiversity	Project Duration (Months)	48 months
Name of parent program (if applicable):	N/A	Project Agency Fee (\$):	\$ 167,096
	<ul style="list-style-type: none"> • For SFM/REDD+ <input type="checkbox"/> • For SGP <input type="checkbox"/> • For PPP <input type="checkbox"/> 		

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
BD-2	GEFTF	1,758,904	9,140,000
Total Project Cost		1,758,904	9,140,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To mainstream globally important biodiversity species conservation into production sectors through improved management of critical habitats						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
Enabling Framework and Capacity to manage endangered species (ES ¹) in productive landscapes	TA	<p><i>Enabling policy and institutional environment for mainstreaming BD through managing ES in production landscapes resulting in:</i></p> <p>Reduction in number of species listed as ES and/or increase in number of individuals of species listed as ES.</p> <p><i>Increased knowledge and skills of central and district-level institutions to apply criteria to prevent/mitigate and offset impacts on biodiversity. UNDP capacity development Scorecard shows improvement</i></p>	<ul style="list-style-type: none"> • A set of national policies and regulations to mainstream biodiversity into production sectors including an updated Endangered Species and Habitat Act that (i) stipulates the procedures for listing a species as ES; (ii) stipulates the procedures for designating “critical habitat²”; (iii) stipulates the procedures for assigning lead agency to coordinate management of “critical habitat” and clarifying its role and responsibilities vis-a-vis those of other sectors; (iv) endorses the land use planning framework (see below) for managing the “critical habitats”; (v) stipulates the procedures for establishing “take³” prohibitions. • Land-use Planning framework in place that integrate ES conservation into land use planning and allocation decisions by (i) no-go areas for development in highly sensitive areas identified; (ii) prescribe appropriate measures and practices that reduce threats to biodiversity in production 	GEFTF	499,004	4,309,091

¹ A “species” is considered (i) endangered if it is in danger of extinction throughout or a significant portion of its range in Thailand; (ii) threatened if it is likely to become an endangered species within the foreseeable future.

² Critical habitat is defined as (i) specific areas within the geographical area occupied by the ES at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species if the agency (ONEP) determines that the area itself is essential for conservation.

³ To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct

		<p><i>[Baseline and target to be determined in PPG stage]</i></p> <p><i>Increase in managed land/seascapes that integrate biodiversity</i> <i>[Baseline and target to be determined in PPG stage]</i></p>	<p>areas; (iii) define clear roles, responsibilities and rights of national, provincial and local authorities, communities and private sector in ES management.</p> <ul style="list-style-type: none"> • Office of Natural Resources and Environmental Policy and Planning (ONEP) led effective cross-sectoral coordination mechanism in place involving Department of Land Development, Department of Lands, Department of Local Administration, Department of Public Works and Town & Country Planning, Department of National Park, Wildlife and Plant Conservation, leading to better planning, coordination, monitoring and enforcement capabilities • Strengthened institutional capacity of ONEP to identify ES and monitoring their recovery through (i) A GIS based decision support system for landscape management developed incorporating ES and critical habitats data; (ii) Monitoring system in place to evaluate acceptable limits of change in defined critical habitats, and take adaptive measures to reduce impacts; (iii) Approved methodology for the development of Recovery Plans and Conservation Plans⁴. 			
Critical Habitat Management demonstrated for 3 ES	TA/INV	<p><i>Official Government gazettal of the listing of three ES namely Spoon-billed Sandpiper (<u>Eurynorhynchus pygmeus</u> Critically Endangered Red List Category), Water Lily (<u>Crinum thaianum</u>, Endangered Red List Category) and Eastern Sarus Crane (<u>Grus antigone</u>, Vulnerable Red List Category</i></p> <p><i>Critical Habitats defined for the three ES and management and recovery plans developed and integrated into Provincial Land Use Planning Frameworks measured by no net loss of critical habitat</i> <i>[Baseline to be determined in PPG stage]</i></p> <p><i>Stability or increase in numbers of populations of the following species:</i></p> <ul style="list-style-type: none"> • Spoon-billed Sandpiper • Water Lily • Eastern Sarus Crane <p><i>[Baseline to be determined in PPG stage]</i></p> <p><i>Direct reduction in threats from infrastructure</i></p>	<ul style="list-style-type: none"> • Management and zoning plans implemented of the identified critical habitats of Spoon-billed Sandpiper, Water Lily and Eastern Sarus Crane in Buriram, Samutsakorn and Ranong Provinces [targeting 7 subdistricts covering 63,796 hectares] result in (i) listing of the three species as ES and the identification of permissible land uses in identified critical habitats; (ii) implementing precautionary principle through establishment of requirement to develop Conservation Plans if incidental “take” is foreseen; (iii) integration of biodiversity considerations into the operations of key economic sectors (agriculture, aquaculture, tourism, infrastructure) (iv) emplaced enforcement systems – strengthened compliance monitoring; penalties, surveillance and prosecution to deter malfeasance. • Sustainability of the project approach and interventions is ensured by (i) developing a long term financial sustainability strategy (mix of approaches such as re-alignment and increase in existing government budgetary resources, raising additional funds from innovative approaches such as public-private partnerships, attracting CSR spending of private companies operating in or near the ES critical habitats); (ii) supporting strong business development and capacity development for local community based enterprises so that livelihood improvement efforts are sustained post project. • Extension support system strengthened to guide land users to adopt biodiversity-friendly practices, enabling farmers to implement resource management practices on their land such as (i) incentives/disincentives in place to practice 	GEFTF	1,100,000	4,000,000

⁴ It is envisaged under the new legislation (to be confirmed during PPG) that when local authorities and private landowners wish to conduct an otherwise lawful activity in the defined ES critical habitats that might incidently, but not intentionally, “take” a listed species, an incidental take permit must first be obtained from ONEP. To receive a permit, the applicant must submit a Conservation Plan that meets the criteria included in the ESA and its implementing regulations.

	<i>development, and production activities (agriculture, aquaculture, extractive industry (dredging) such as proper placement of infrastructure and wider adoption of BD-friendly practices.</i> <i>Local communities in 7 subdistricts capacitated to adjust their economic activities (focusing on aquaculture, agriculture and tourism management) to meet the biodiversity standards</i>	sustainable agriculture and aquaculture; (ii) training modules for extension agents, resulting in more effective and participatory delivery of extension services and the incorporation into extension messages of biodiversity issues; (iii) Integrated training and extension modules for farmers, producers and local decision makers developed and delivered in local languages to promote community level planning, implementation and monitoring of ecosystem integrity in critical habitats; (iv) supporting community initiatives such as Environmentally Sustainable Tourism or Ecotourism.			
Subtotal				1,599,004	8,309,091
Project Management Cost (PMC)			GEFTF	159,900	830,909
Total Project Costs				1,758,904	9,140,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Ministry of Natural Resources and Environment – Office of Natural Resources and Environmental Policy and Planning	In-kind	2,500,000
National Government	Ministry of Natural Resources and Environment – Office of Natural Resources and Environmental Policy and Planning	Cash	2,500,000
National Government	Ministry of Natural Resources and Environment – Zoological Park Organization	In-kind	2,000,000
National Government	Ministry of Natural Resources and Environment – Zoological Park Organization	Cash	2,000,000
Multilateral Agency (ies)	UNDP	Cash	40,000
CSO	World Wide Fund for Nature	Cash	100,000
Total Cofinancing			9,140,000

D. INDICATIVE TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (\$) (a)	Agency Fee (\$) (b) ²	Total (\$) c=a+b
UNDP	GEFTF	Biodiversity	Thailand	1,758,904	167,096	1,926,000
Total Grant Resources				1,758,904	167,096	1,926,000

E. PROJECT PREPARATION GRANT (PPG)

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	<u>Amount Requested (\$)</u>	<u>Agency Fee for PPG (\$)</u>
• (upto)\$100k for projects up to & including \$3 million	67,580	6,420

PART II: PROJECT JUSTIFICATION

A PROJECT OVERVIEW

A.1. Project Description.

This project is designed to reduce the accelerating pressures facing endangered and threatened species on production lands. Many species rely on these areas for survival because they contain habitats not adequately represented in the PA system. However, they face accelerating pressures from land use conversion and from unsustainable use, amongst other things. The project will put in

place the policy, planning and institutional framework needed to avoid and reduce threats from production activities, in areas that are crucially important for species survival. It will furthermore take steps to conserve three critically endangered species, namely the Eastern Sarus Crane (*Grus antigone sharpii*), Spoon-billed Sandpiper (*Eurynorhynchus pygmeus*) and Water Lily (*Crinum thaianum*). The populations of all three species depend on production lands for survival; in the case of the Spoon-billed Sandpiper, the entire population wintering range in Thailand is located exclusively outside protected areas. This situation is characteristic of that for many endangered and threatened species; the mainstreaming measures that will be applied to conserve these three species will improve the conservation status of many other species, depending on the same habitats for survival. Moreover, the different approaches that will be employed are representative of measures needed to protect other endangered and threatened species. Capacities emplaced under the project to protect the target species will provide a foundation for the conservation of these other species.

The Water Lily (*Crinum thaianum*) is endemic to Thailand and has a very restricted range in southern Thailand. Originally found on the coastal plain of southern Thailand, it is now confined to isolated patches on a few rivers and streams in Phang Nga and Ranong Provinces. The population is severely fragmented by habitat loss (only 3.5% of the original habitat remains) and there have been rapid population declines in some areas as a result (70% decline in the Nakha river during the period 2003 – 2008), with local extinction reported in some streams within its range. The species is therefore listed as Endangered and it could well become Critically Endangered in the near future if these trends continue. Project mainstreaming interventions will focus on the Nakha Subdistrict (Tambon), covering an area of 28,493 ha. The Spoon-billed Sandpiper is listed as Critically Endangered as it has an extremely small population that is undergoing a rapid population reduction. The Inner Gulf of Thailand contains a diversity of ecosystems such as mudflats, sand beach, salt farms, mangroves and estuaries—where this species over winters (this area provides critical habitat for a large number of migratory shorebirds, and is located on the East Asia-Australia Flyway. The project will focus interventions on the Kokkham Subdistrict covering an area of 7000 ha (Muang District, Samut Sakorn Province) where a small but growing number of Spoon-billed Sandpipers overwinter. The area is on a coastal plain dominated by salt farms. The Eastern Sarus Crane was extirpated in Thailand except for a few individuals in zoos. The Korat Zoo has a very successful Eastern Sarus Crane breeding programme in place and in 2011 started a reintroduction programme in which 18 individuals were successfully introduced back into their natural environment at three wetland complexes in Buriram Province, namely Huay Chorakaemak Non-Hunting Area (681 ha), Huay Talat Non-Hunting Area (1,410 ha) and Sanambin Non-Hunting Area (570 ha). In order to provide a viable, future habitat for an expanding Eastern Sarus Crane population in, the following subdistricts of the Buriram Province will be targeted by mainstreaming efforts in order to provide adequate foraging sites: Ban Bua Subdistrict (4,268 ha), Samet Subdistrict (6,000 ha), Sakae Prong Subdistrict (7,850 ha), Sakae Sum Subdistrict (4,800 ha) and Prakhon Chai Subdistrict (5,200 ha).

Background: The Kingdom of Thailand is situated at the centre of the Indochinese Peninsula. Thailand's borders extend from the Indian Ocean on the western peninsular coast to Myanmar in the north, Laos to the northwest across the Mekong River, Cambodia to the southeast, and Malaysia to the south. Thailand has a total area of 513,120 km² (510,890 km² land and 2,230 km² water), and straddles two major biogeographical regions, the Indochinese region in the North and the Sundae region in the South. Thailand can further be divided into six biogeographical units with unique floral and faunal associations, namely: (1) the Northern Highland, (2) the Korat Plateau, (3) the Central Plain of the Chao Phraya River, (4) the Southeast Upland, (5) the Tenasserim Hills, and (6) the Southern Peninsula. The country forms part of the Indo-Burma Global Biodiversity “hotspot”, while the subtropical moist forests (in the north as well as in the Cardamom Mountains), dry forests and the Mekong River are listed as Global 200 eco-regions. Thailand has 7 endemic mammal species, 2 bird species, 47 reptile species, 7 amphibian species, 72 fish species and 757 species of plants. Thailand's 15,000 plant species constitute 8% of the global plant species inventory. Of these, at least 1,424 plant species are threatened and endangered (757 of which are endemic). The species inventory further includes 294 species of mammal, 942 bird species, 325 of reptile and 141 of amphibians. Thailand's freshwater ecosystems, encompassing rivers, reservoirs, swamps and ponds, contain about 7% of the world's freshwater species count⁵ including 143 endemic species, 606 freshwater fish species and an array of globally-threatened species such as the Irrawaddy Dolphin, the Siamese Crocodile, and the Giant Catfish. Coastal ecosystems extend over an area of more than 2,000 km and include coral reefs, sandy beaches, muddy beaches, and seagrass beds. Thailand's recorded 2,000 marine fish species account for 10% of the global marine fish species assemblage, and over 11,900 species of marine invertebrates have been recorded. Finally, agro-ecosystems, which cover about one fifth of the country, support a range of biodiversity, including agro-biodiversity (i.e. rice species and cultivars). However, many of these species are endangered or threatened. IUCN's Red List notes that Thailand has over 1700 globally threatened species, including several Critically Endangered species -including 13 mammal species, 43 bird species, 11 reptile species, 18 fish species, and 20 plant species.

The establishment of Protected Areas (PAs) has long constituted the primary vehicle for biodiversity conservation in Thailand. Thailand started to establish protected areas (PA) in the 1960s with the enactment of the *Wildlife Protection and Reservation Act (1960, revised in 1992)* and the *National Parks Act (1961)*. Over 400 PAs are currently gazetted, consisting of national parks⁶,

⁵ Science Society of Thailand and Scientific Research Society of Thailand, 1991

⁶ The National Parks Act of 1961 provides for the establishment of both terrestrial and marine national parks. The Act permits visitors inside national parks, but forbids residence, hunting, clearing and gathering of vegetation, mining and the introduction of livestock within park boundaries.

wildlife sanctuaries⁷, forest parks, non-hunting areas⁸, botanical gardens, and arboreta⁹. PAs are largely managed by the Department of National Park, Wildlife and Plant Conservation (DNP) under the Ministry of Natural Resources and Environment (MONRE). Although 18% of the total land area is under PA coverage, much of the globally significant biodiversity in Thailand is found in “production landscapes” - in agricultural areas and production forests and wetlands, where they face increasing threats.

Threats:

Over exploitation of biological resources:

National: Unsustainable harvesting practices have resulted in the reduction or loss of populations of many plant and animal species. Further, the hunting of endangered and threatened animals continues today. Hunting in the past has in many cases contributed to the endangered and threatened status of species, and in cases to the extirpation of species from the wild in Thailand.

Target Species: The illegal trafficking of Eastern Sarus Crane from Cambodia through Thailand continues and can very quickly affect the reintroduced Eastern Sarus Crane population in Thailand. Further, killing of Spoon-billed Sandpipers, and possibly Eastern Sarus Crane, as by-catch can occur when hunters target other species for supply to local markets for food, especially if netting is the hunting method used. The collection of Water Lily bulbs from the wild for international trade for home aquaria and fishponds is a threat to the survival of the species. A report from plant quarantine officials at the Department of Agriculture in Suwannabumi Airport estimated that 669,563 Water Lilies were exported during the period 2006 – 2009.

Habitat loss and degradation:

National: The principle threat to Thailand’s biodiversity is the rapid loss of habitat. Habitat degradation and depletion has occurred and is happening primarily as a result of rapid economic development (e.g. road and dam construction). Logging and forest fires cause destruction, although widespread conversion of forest to agricultural land use and expanding community settlements constitute even more serious problems. This is because once converted these areas cannot be easily rehabilitated, and agricultural activities cause water, soil and pollution problems in the surrounding areas. Industrial production has grown steadily over the past two decades to become Thailand’s main source of GDP. Industry is dependent on water, but has contributed substantially to the reduction in both water quality and quantity. Wetlands in industrial areas have been polluted with toxic wastes. The country has become one of the world’s most important exporters of agricultural products, and is consistently among the top two or three rice exporters. Investment in irrigation infrastructure has enabled production of two or three crops per year on the nation’s best agricultural lands. At the same time, vast areas of wetlands have been converted to paddy production—threatening wetland biota. Thailand’s magnificent coastal and marine areas, tropical and subtropical mountain ranges, and unique and diverse cultures have long provided a draw for the lucrative tourism sector. Tourism has become a major employer and revenue provider; more than 10 percent of the workforce is currently employed directly or indirectly in the tourism sector. In 2012, tourism contributed 6.5% of Thailand’s GDP. Tourism has also been a contributor to the clearance of coastal mangrove forests, pollution of near-shore marine environments, and destruction of coral reefs. These environments are vital to sustaining tourism and to the nation’s important fisheries. Thailand has become one of the world’s most important shrimp exporters, which has involved extensive conversion of mangroves.

*Target Species*¹⁰: There is a long history of human use of coastal habitats in the Inner Gulf. Salt pan usage in parts of Thailand dates back 800 years and salt pans continue to occupy 106 km² of land in this area today. Salt pans are also used by shorebirds. While shallow aquaculture or prawn-capture ponds continue to provide feeding and roosting areas for shorebirds, intensively managed, modern, deep and steep-sided aquaculture ponds are typically unsuitable for many species¹¹. This latter production system is fast replacing the former, and the adverse impacts on biodiversity are being compounded by the extraction of pond sediments for landfill. This change from previous biodiversity-friendly salt production to modern aquaculture practices is a major threat to the Spoon-billed Sandpiper which uses the salt pans for roosting and foraging. A major threat to aquatic freshwater

⁷ The Wildlife Protection and Preservation Act of 1960 (revised in 1992) provides for the establishment of wildlife sanctuaries as wildlife conservation areas under DNP authority. Wildlife sanctuaries are not generally open to the public but researchers are allowed. The Act also stipulates rules governing hunting and trade of wild animals and lists protected species.

⁸ The National Forest Reserve Act of 1964 provides the underlying legislative framework for all Government regulation of forest areas in Thailand, including forest parks and non-hunting areas. This includes the authority of the Government to declare a given area under protection from resource use. *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.

⁹ While these PA categories represent how DNP currently defines its system, it is important to note that botanical gardens and arboreta have no specific legislation regulating their management *per se*, nor do they meet standard IUCN Protected Area Categories.

¹⁰ The target species will be addressed through the management of the critical habitats of these target species. These sites include Klong Nakha, Kok Kham and Burirum Wetlands. These sites have been selected for their global biodiversity importance as well as for the potential for these sites to serve as entry points for replication of conservation actions in their wider linked landscape: the Klong Nakha site will be the starting point to conserve the estuarine landscape of the Ranong Province; Kok Kham – as part of the wider landscape of coastal area in the Inner Gulf of Thailand; and Burirum Wetlands Complex as part of the wider landscape on the flight path of the Eastern Sarus Crane which spreads into Cambodia. The use of different legal regimes also allows for comparisons of the complexity or ease with which legal mechanisms can be implemented for biodiversity conservation, as well as the interface and interrelationship between PA and Non-PA areas in a landscape level.

¹¹ Shorebirds occur in significantly higher concentrations in landscapes with salt-pans versus landscapes dominated by aquaculture (Sripanomyom, S.; Round, P.D.; Savini, T.; Trisurat, Y. and Gale, G.A. 2011. *Traditional salt-pans hold major concentrations of overwintering shorebirds in Southeast Asia*. *Biological Conservation* 144 (2011) 526 – 537.)

biodiversity is the dredging of rivers and streams for removal of sediment and rock for construction and land reclamation purposes. This not only increases sediment in water but also removes the muddy substrate that water plants like the Water Lily need for anchoring, replacing it with pebbles and gravel. The dredging also increases the speed of water flow in habitats of the Water Lily, adversely changing habitat conditions. Extensive changes in the ecology of the streams and rivers are also occurring due to land use changes in the adjoining areas (e.g. clearing of forests for agriculture) and resultant land-based erosion and river bank erosion. Monoculture farming, such as of rubber and palm oil trees, is contributing further to the alteration of the Water Lily's natural habitats, increasing sedimentation and pollution of wetlands with herbicides. Infrastructure development and expanding agriculture are having a detrimental impact on the habitat of the Eastern Sarus Crane. Road construction, dredging and landfill are common in the wetland areas of Burirum Province. Such developments increase the demand for water, resulting in losses of suitable habitat.

Institutions and policies: The Ministry of Natural Resources and Environment (MONRE) was established in 2002, and is assigned institutional jurisdiction over (i) the assessment of biodiversity and natural resource status; (ii) resource protection and management; (iii) regulating access to biodiversity natural resources; and (iv) determining sustainable utilization measures through research and development. MONRE has established 16 Regional Environment Offices (REOs) across its four regional administrative divisions. MONRE hosts the National Environment Board (NEB) and the Office of Natural Resources and Environmental Policy and Planning (ONEP). The NEB was formed as a policy-making and coordinating body for natural resources management. Chaired by the Prime Minister, it comprises the heads of all sectoral ministries whose activities affect the environment, heads of departments and government boards, and representatives of the private sector. To do this, it develops and enforces laws, and monitors the compliance with legislation of government agencies and state enterprises. It makes policy recommendations to the National Economic and Social Development Board (NESDB), which incorporates these recommendations into Thailand's 5-year National Economic and Social Development Plans (NESDP). Environmental policy frameworks stipulated in the NESDPs and MONRE's 4-year Action Plans are translated into action plans by the various Government ministries. ONEP acts as the Secretariat for the NEB, and serves as the focal point for CBD. The Monitoring and Evaluation Office (OME) is situated within the Office of MONRE's Permanent Secretary. Its key roles and responsibilities are to support and facilitate the work of the 16 Regional Environmental Offices and the Provincial Natural Resources and Environmental Offices in all 76 provinces.

Provincial Natural Resource and Environmental Offices (PONREs) have been vested with the responsibility for implementing three aspects of MONRE's mandate - natural resources management (forest and coastal resources); water resources management; and environmental quality management - within provincial boundaries. The Royal Forest Department (RFD) is mandated to oversee the management of government forestlands excluding protected areas. The RFD has five technical bureaus and seven administrative divisions and regional offices. Forest resources are administered locally by 76 provincial offices and 524 district forestry offices. Bureaus with direct responsibility for forest conservation are the Natural Resources Conservation Bureau (*in situ* conservation), Technical Forestry Bureau (*ex situ* conservation) and Plantation Promotion Bureau (*ex situ* conservation), as well as regional and local administrative offices.¹² The Department of National Parks, Wildlife and Plant Conservation (DNP) is responsible for flora and fauna conservation and management, particularly in protected forestlands (national parks, wildlife sanctuaries, watersheds and special designated areas). The Department of Marine and Coastal Resources (DMCR) is responsible for the sustainable management of the country's marine and coastal resources. DMCR is mandated with the formulation of coastal and marine policies and strategies, conducting research and development, and overseeing marine resource use. There are 6 Marine and Coastal Resources Conservation Stations and 14 Mangroves Research and Development Stations across the country. These stations are responsible for developing mangrove management plans, with participation from other line agencies and CSOs. Community involvement in NRM is enshrined in the 1997 Thai Constitution, which stipulates "the need for the participation of communities and local organizations in NRM as well as the right of indigenous people in management of NRs" (Article 46).

Land use planning: Notwithstanding the robust institutional architecture established for natural resources management, no single agency is responsible for land use planning; instead some 14 Government agencies deal with land use allocation. The National Economic and Social Development Plan provides the overarching development blueprint. Spatial development policies, including region-specific programmes, have historically been included in this document, but in recent years the spatial development sections of the NESDP have grown weaker. At the same time the Department of Public Works and Town & Country Planning of the Ministry of Interior has become more involved in development and planning at the national, district and provincial levels. The Department is responsible for urban development and planning as well as enforcing building standards and controls. The Land Development Department (LDD) has substantial experience with macro land use planning, but also promotes local land use planning. At the national, regional and provincial levels, master plans are created to provide a broad development framework for city/town and community levels. Local/community development plans address specific implementation issues and comply with the master plans.

¹² Sutthisrisin, C. & Noochdumrong, A. (1998) *Country Report on Thailand: Forest Policy and Planning*. FAO Regional Office for Asia and the Pacific, Bangkok.

Table 1: List of the main institutions involved in land use planning and allocation in Thailand

Institution	Responsibility for land use planning in the country
National Economic and Social Development Board	Responsible for national planning through the finalization of the National Economic and Social Development Plan.
Department of Public Works and Town & Country Planning / Ministry of Interior	Responsible for the ongoing process of regional and urban plan development.
Department of Land Development / Ministry of Agriculture and Cooperatives	Responsible for soil and land use surveys, classification, mapping and planning nationwide. Responsible for macro and local land use planning (outside forest reserves and protected areas) and in zones with less than 35° slope.
Department of National Park, Wildlife and Plant Conservation / Ministry of Natural Resources and Environment	Responsible for Land Use Planning in protected areas and in zones with more than 35° slope or upland areas.
Royal Forestry Department / Ministry of Natural Resources and Environment	Responsible for land use planning in gazetted forest reserves (lowland areas). The Department also deals with land allocation for settlers in the national forest reserve area.
Department of Lands / Ministry of Interior	Registers land holdings, issues land titles and land use certificates, conducts cadastral surveys.
Department of Public Welfare / Ministry of Interior	Allocates public land to farmers and poor families under self-help land settlement projects (as part of the social welfare programme)
Local Administration Organizations	Local administration is the most vital part in ensuring land management and conservation is implemented in accordance with both national policies and the needs of local people. The administrations have the closest association to people, natural resources and the environment and their actions would thus have the most impact on land and population.

Baseline scenario and associated baseline projects

Several baseline programmes are addressing the threats described above, and hence serve as a foundation for this UNDP-GEF project.

National: The Ministry of Natural Resources and Environment annually spends about US\$ 44 million (US\$ 176 million over the project period) on nature conservation activities. These investments will be targeted mostly towards protected area management but also for the establishment of lists of reserved¹³ and protected¹⁴ animals, managing hunting and controlling the trade in wild animal products as set out in the 1992 Wildlife Reservation and Protection Act. The local sustainable development programmes implemented by local government units (*Tambon Administrative Offices*, TAOs) finance community volunteer groups for wildfire prevention, the establishment of set asides for fish conservation, as well as the establishment of community forests.

Species Specific: Water Lily: It is expected that US\$ 3.5 million will be invested in Water Lily Conservation and related activities over the next four years. The Ranong Natural Resources and Environment Provincial Office has established a Water Lily nursery and will invest an estimated US\$ 200,000 in its operation. Also, the Thailand Research Fund supports Klong Nakha conservation activities and also started a Water Lily propagation programme with US\$ 200,000 anticipated to be invested during the project period. The Ranong Provincial Agriculture Office will support the operations of the Sufficient Agricultural Learning Center and the Klong Nakha Traditional Herbs Group with an estimated budget of US\$ 1.5 million. These initiatives are relevant to the project as they provide vehicles for advocating more biodiversity-friendly practices in the agricultural field in order to reduce erosion. The Tourism Authority of Thailand also promotes nature-based tourism and runs tourism campaigns. Most nature-based tourism enterprises are community-based with a focus on environmentally-friendly activities. The Community-based tourism enterprises in the Klong Nakha area have collaborated to form a tourism network called “North Andaman Community Tourism Network”, which includes 11 groups. Various organisations e.g. MFF and IUCN assist this network with enterprise development.

Spoon-billed Sandpiper: The Khok Kham Tambon Administration Organization (TAO) is planning to host a “Khok Kham Bird Festival” in the near future to place the subdistrict on the birding map and to encourage tourists to visit the area. US\$ 100,000 is budgeted for the event. The Khok Kham Conservation Club (KKCC) will invest a further US\$ 50,000 in the area during the project period through awareness-raising activities and patrolling to protect the birds from illegal hunting. The Kasetsart University has an educational programme targeting the Spoon-billed Sandpiper with students engaging with the local community and undertaking baseline research. It is estimated that their investment in Spoon-billed Sandpiper conservation actions over the next four years will be US\$ 40,000. The Royal Thai Forestry Department (RTFD) as well as the Bird Conservation Society of Thailand (BCST) maintain shorebird databases and conduct regular surveys at key bird areas. An estimated amount of US\$ 40,000 will be allocated for these surveys over the project period targeting the Khok Kham sub-district specifically.

Eastern Sarus Crane: The authorities responsible for the management of the three non-hunting areas (Huay Chorakaemak Reservoir, Huay Talat Reservoir and Sanambin Reservoir) in Burirum Province will invest US\$ 400,000 over the project period.

¹³ Reserved wild animals – extremely threatened and in danger of extinction

¹⁴ May not be in immediate danger of extinction, but are protected from their becoming so.

The Burirum Provincial Natural Resource and Environment Office (PONRE) will invest an estimated US\$ 5 million during the project for training of local natural resources and environment management volunteers. The TAOs will be carrying out awareness raising in the communities, with an estimated investment of US\$ 50,000 over the project period. The Ministry of Tourism and Sport will invest US\$ 10 million in the Buriram Province to develop wildlife-based tourism infrastructure. The Korat Zoo will continue its research on the reintroduction of the Eastern Sarus Crane, with an estimated investment of US\$ 50,000 over the next four years. The Burirum Provincial Irrigation Office will invest approximately US\$ 6 million in management of reservoir areas, largely targeting the improvement of the landscape around the reservoir to increase water capture, including through reforestation.

Long Term Solution and Barriers that need to be addressed

Despite this substantial baseline, the conservation of ES remains weak with species loss continuing over time. The **long term solution** lies in reforming the manner in which agricultural, forestry, aquaculture and other production activities are planned and regulated across different land units and tenure categories at the landscape scale in order to avoid, reduce and mitigate the pressures leading to ES biodiversity loss. There are two types of barriers to achieving this long-term solution: (i) inadequate planning and enforcement framework and (ii) inadequate demonstrated experiences in land use planning and ES-compatible land management practices.

Barrier 1: Absence of planning and enforcement framework to mainstream ES conservation in the wider landscape

Conservation of biodiversity in Thailand has focused on establishment and management of PAs. This is especially true for endangered species where the focus has been on hotspot identification and inclusion into the PA system. For those areas outside PAs in the production landscapes, conservation of ES through mainstreaming has been *ad hoc* and unsystematic. Although there is recognition that additional avenues may be available to conserve biodiversity in production landscapes through use of legal designations or land use planning, these have not been adequately used by the conservation community. Local governments and communities are also unaware of the different legal options available to them; mechanisms for operationalising such options have also not been fully developed. Further, the 1992 Wildlife Reservation and Protection Act only makes provision for the establishment of lists of reserved and protected animals but is silent on the regulation of endangered and threatened plants. A major threat to ES is the loss of habitat, which the Act does not address. The country lacks a framework that a) defines the roles and responsibilities of key government institutions in land use planning and management in ES critical habitats; and b) lays out prescriptions/ circumscriptions for land use within the ES critical habitat – such as no-go areas for development in highly sensitive areas, and biodiversity conservation-friendly development in the adjacent areas to protect corridors and sensitive habitats where development cannot be avoided. Additionally, the various roles and responsibilities of the different government agencies for the management of critical habitats of ES (such as planning, monitoring and enforcement) remain to be clarified. Currently the various responsible government departments have overlapping mandates and often mutually exclusive objectives that amplify conflicts between development goals versus biodiversity concerns. This speaks to the need for an effective inter-sectoral coordination mechanism and means to integrate biodiversity conservation principles into development plans and production sector practices to reduce pressures on biodiversity. Planning, monitoring and enforcement efforts are in any case undermined owing to the absence of an effective decision-making support system fed by biodiversity status assessments and environmental impact assessments (to assess and direct development away from critical habitat and also to identify effective protection measures for ES). There is also a lack of expertise within ONEP to develop recovery plans for ES with a mainstreaming component. There is therefore a need to: establish a central database on ES, capacitate ONEP in the development of recovery plans for ES, emplace a monitoring system within ONEP to evaluate acceptable levels of change in defined critical habitats, and to take adaptive measures to reduce impacts. EIAs are only mandatory for newly designed, large scale production-type projects¹⁵, but not mandatory for land-based activities already underway.

Barrier 2: Inadequate demonstrated experiences in land use planning and ES-compatible land management practices:

With the background of high relative poverty levels, local population and most (sub-) district public authorities are guided by the quick-gain philosophy with respect to agriculture and aquaculture practices. The same applies to infrastructural development. While theoretical options for long-term sustainable use of the land and water are available, ensuring the conservation of biodiversity and important ecosystem services, their conservation, efficacy and benefits have not been tested. Sites that are considered to be globally and nationally important for biodiversity may be considered important by local communities and local government for different (economic) reasons. The tradeoff between conservation and local use may not be considered fair by local communities if conservation leads to sub-optimal livelihood options for them. However, currently there are limited capacities locally to assess such tradeoffs and develop a negotiated solution to maximize local to global benefits. There is also a clear lack of knowledge among the tourism sector, the private sector and land owners regarding the benefits of biodiversity-friendly tourism and other conservation-friendly development strategies, as well as the application of legal tools and incentives to adopt sustainable sector practices while maintaining or increasing household income amongst local communities. The most important barrier to operationalising the management of critical habitats of ES at the site level is the lack of know-how and limited examples within the country of applying land use planning and regulatory frameworks to manage development across different sectors to secure positive biodiversity outcomes. Numerous land use maps have been produced by the mapping centers of the Land Development Department (LDD), but the actual implementation of these plans has been disappointing. Although some maps of

¹⁵ EIAs are only required in Thailand for the following type of projects and activities (depending on size): dam and reservoir construction, irrigation, commercial airport, hotel and resort development, mass transit system and expressways, mining, industrial estates, commercial ports and harbors, thermal power plants, coastal reclamation, highway or road development, building in areas adjacent to rivers, lakes or beaches or in the vicinity of National Parks and specific industrial projects, namely petrochemical, oil, refinery, natural gas separation or processing, chloralkaline, iron and steel, pulp industry, pesticide industry or industry producing active ingredient by chemical process, chemical fertilizer industry using chemical process in production. Projects within Environmentally Protected Areas (EPA) require an EIA depending on the conditions and notifications defined for each EPA. Certain defined projects in Forest Conservation Areas require EIA report. ONEP, 2012. Environmental Impact Assessment in Thailand.

biodiversity priority areas exist, they are not reflected in the District and Provincial Development Plans. Further, Thailand does not have operational “on-the-ground” examples of technical interventions that sustainably promote long-term biodiversity conservation of specific ES in the production landscapes outside the protected areas. Without access to replicable demonstrations, government decision-makers and resource users do not have the tools and knowledge necessary to decrease biodiversity loss. Where maximizing global benefits requires a loss of or reduction in local benefits, then means of compensation or substitution schemes need to be developed.

Proposed alternative scenario, with a brief description of expected outcomes and components of the project, incremental cost reasoning and expected contributions from the baseline, the GEFTF, LDCF/SCCF and co-financing

The Government of Thailand is requesting GEF support through this project to remove, in an incremental manner, the existing barriers **to mainstream globally important biodiversity species conservation into production sectors through improved management of critical habitats**. Two components are planned:

Component 1: Enabling Framework and Capacity to manage endangered species (ES) in productive landscapes: A primary output under this component will be an updated Endangered Species and Habitat Act that (i) clearly stipulates the procedures for listing a species as an ES; (ii) clearly stipulates the procedures for designating the “critical habitat” of an ES which, if sustainably managed, will ensure the conservation of the targeted species; (iii) endorses the land use planning framework that will be developed under the project; and (v) clearly stipulates the procedures to establish “take” (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) prohibitions. The project will improve national and sub-national capacities for inter-sectoral governance of ES critical habitats to manage biodiversity effectively. In order to achieve this, it will first facilitate the emplacement of an appropriate ES Critical Habitat planning framework that strongly integrates biodiversity conservation concerns and enables the development and use of biodiversity indicators and status assessment to monitor the management effectiveness of ESs’ Critical Habitats. This land-use planning framework will be empowered, based on available information on an identified ES and its critical habitats, to make land use planning and allocation decisions defining no-go areas for development in highly sensitive areas, prescribe appropriate measures and practices that will reduce threats to ES in the production areas; and define clear roles, responsibilities and rights of national, provincial and local authorities, communities and private sector in the management of the ES and its critical habitats. This coordination framework will be led by the Office of Natural Resources and Environmental Policy and Planning and will involve the Department of Land Development, Department of Lands, Department of Public Works and Town & Country Planning, Department of National Parks, Wildlife and Plant Conservation, Royal Forestry Department and Department of Public Welfare. This coordination framework will also include a national monitoring and enforcement function in order to ensure agreed ES-based land use plans are implemented and effective. Further, an institutional strengthening exercise will be undertaken within the ONEP to ensure that capacity is developed in order to respond to ES conservation in a meaningful way: A GIS-based decision support system will be established where identified ES and critical habitats are mapped, changes over time, both in ES numbers and land use changes in critical habitats, are monitored, crucial information is provided for adaptive management (where possible, acceptable limits of change will be incorporated into the decision support system), and manuals and guidance are provided to ONEP and other stakeholders on the development of Recovery Plans for targeted ES and Conservation Plans. Recovery Plans will be developed in line with the Land Use Planning conducted and will target conservation issues such as reintroduction, hydrological control of wetlands, anti-poaching patrols etc. When local authorities and private landowners wish to conduct an otherwise lawful activity in the defined ES critical habitats that might incidentally, but not intentionally, “take” a listed species, an incidental take permit will firstly need to be obtained from ONEP. To receive a permit, the applicant must first submit a Conservation Plan that meets the criteria included in the ES Act and its implementing regulations, justifying the case for continuing with planned development and its non-impact on the targeted ES.

Component 2: Critical Habitat Management demonstrated for 3 Endangered Species: This component shall implement the management and zoning prescriptions under the ES land use management planning in the Nakha Subdistrict (Water Lily), Kokkham Subdistrict (Spoon-billed Sandpiper) and Ban Bua, Samet, Sakae Prong, Sakae Sum and Prakhon Chai Subdistricts (Eastern Sarus Crane). The project will catalyze the application of strategic environment assessments (SEA) to all developments under the purview of regional and local development plans so that the likely negative impacts are identified and managed. Land use prescriptions will be developed and applied for different sectors in different areas to establish a mosaic of conservation-compatible land uses: this will include management of no-go areas for development, management of production activities in key ecological corridors, and rehabilitation of critically degraded areas. The project will also put in place appropriate systems for enforcement – monitoring, penalties, surveillance and prosecution - to deter malfeasance. In tandem, the economic production sectors (agriculture, salt production and tourism) will be supported to mainstream biodiversity considerations into their operations. This will be achieved through a two-pronged approach of making available the technical know-how and relevant skills upliftment, while also ensuring that both the incentives and disincentives applicable to these economic sectors are designed and implemented. Incentives can include a) promoting sustainable resource management and use through branding/certification for environmentally sustainable production operations (salt, rice) and other market mechanisms (e.g. premium sale of organic products); b) implementation support to select activities identified, especially those at the community level (e.g. ecotourism). In addition, local communities will be supported through a revised extension strategy that will encourage land users to adopt biodiversity-friendly practices. In order to address the current lack of management of ES critical habitats, those areas of high importance to the ES that need to be maintained in their natural state will be identified, mapped and zoned and, where an appropriate size, be declared as a

protected area under one of the existing legal categories. The integration or consideration of conservation of the ES into the operations of rice paddy and farming practices, rubber and palm oil operations and salt production will be promoted in order to reduce illicit felling of forest and regulate pesticide use in areas where these practices are taking place. In order to encourage ES-friendly management, local communities already engaged in such land use practices will be encouraged, through additional incentives like ecotourism grants, to continue in these practices rather than change to a land use that is detrimental to the ES. This component shall engender a change in the overall land use in the ESA as detailed below

ES Critical Habitat	Current Situation	Alternative Situation
Spoon-billed Sandpiper (Kokkham Subdistrict)	<p><u>Core Area:</u> Critical Habitat for Spoon-billed Sandpiper’s survival in Kokkham Subdistrict known but neither mapped nor zoned as per critical importance to the ES. No powers to stop any form of development or “take” of ES – face multiple threats.</p> <p><u>Salt Production and Aquaculture:</u> Increasing trend to change from traditional salt pans and shallow aquaculture or prawn-capture ponds towards intensive managed, modern, deep and steep-sided aquaculture ponds, typically unsuitable for shorebirds.</p>	<p><u>Core Area:</u> Critical Habitat for Spoon-billed Sandpiper’s survival in Kokkham Subdistrict are identified, mapped and zoned. All forms of development will be located outside of core areas.</p> <p><u>Salt Production and Aquaculture:</u> Extension package encourage mass adoption of sustainable practices in salt production and aquaculture. Increased community incomes and improved lives as a result of profits from certified, biodiversity friendly enterprises such as salt products and eco-tourism</p>
Water Lily (Nakha Subdistrict)	<p><u>Core Area:</u> Critical Habitat for Water Lily’s survival in Nakha Subdistrict known but neither mapped nor zoned as per critical importance to the ES. No powers to stop any form of development or “take” of ES – face multiple threats.</p> <p><u>Infrastructure Development:</u> Indiscriminate dredging of rivers and streams for removal of sediment and rock for construction and land reclamation purposes.</p> <p><u>Agriculture:</u> Clearing of land for agriculture and resultant land-based erosion and river bank erosion, mainly for monocultures (Rubber and Palm Oil). There is limited inventory/ mapping of forest fragments and no integration or consideration of conservation of biodiversity in its operations. There are also illicit felling of trees for firewood, excessive use of pesticides; low awareness of biodiversity conservation and management options among local communities. Unsustainable land use practices by local communities leading to increased pressures on land and aquatic resources resulting in resource degradation. Limited incomes as communities not capable of setting up viable biodiversity-friendly business ventures.</p>	<p><u>Core Area:</u> Critical Habitat for Water Lily’s survival in Nakha Subdistrict are identified, mapped and zoned. All forms of development will be located outside of core areas. Collection of Water Lilies will be prohibited in these areas.</p> <p><u>Infrastructure Development:</u> Certain areas will be zoned within the Critical Habitats where dredging will not have a negative effect on water lily populations in order not to adversely affect the economy. Specific methods to minimize impact will be prescribed in certain areas e.g. trapping of sediment.</p> <p><u>Agriculture:</u> These sectors will pay attention to forest fragments conservation, reducing illicit felling and regulated pesticide use in areas identified as having an effect on Water Lily population; staff and workforce/local communities fully aware of values of biodiversity; marketing strategy shifts to sustainable production. Extension package encourage mass adoption of sustainable practices in agriculture. Increased community incomes and improved lives as a result of profits from certified, biodiversity friendly enterprises such as NTFP products and eco-tourism.</p>
Eastern Sarus Crane (Ban Bua, Samet, Sakae Prong, Sakae Sum and Prakhon Chai Subdistricts)	<p><u>Core Area:</u> Critical Habitat for Eastern Sarus Crane in Ban Bua, Samet, Sakae Prong, Sakae Sum and Prakhon Chai Subdistricts known but neither mapped nor zoned as per critical importance to the ES. No powers to stop any form of development or “take” of ES – face multiple threats.</p> <p><u>Infrastructure Development and Agriculture:</u> Road construction, dredging and landfill are reducing wetland areas in Burirum Province. Expanding agriculture and excessive use of pesticides have a detrimental impact on the habitat of the Eastern Sarus Crane. These developments (growth in agriculture and infrastructure development – resulting in increased population and housing) will have an increased demand for water, resulting in loss of Sarus Crane habitat due to shallow water foraging habitat.</p>	<p><u>Core Area:</u> Critical Habitat for Eastern Sarus Crane in Ban Bua, Samet, Sakae Prong, Sakae Sum and Prakhon Chai Subdistricts are identified, mapped and zoned. All forms of development will be located outside of core areas.</p> <p><u>Infrastructure Development:</u> As above, areas critical for the survival of Sarus Crane to be identified and development located outside core areas, in marginal areas development will be minimalised and adopted to be ES-friendly. Extension package encourage mass adoption of sustainable practices in agriculture. Increased community incomes and improved lives as a result of profits from certified, biodiversity friendly enterprises such as rice products and eco-tourism. Reservoir water planning, abstraction and management incorporates ES aspects. Reservoir management benefit from increased ecotourism revenues as a result of increased tourism to view Sarus Crane and other birds.</p>

The project will utilize multiple means to mainstream biodiversity-friendly practices into different sectors. The scope and specific mainstreaming entry points will be further confirmed during the PPG exercise to ensure the main focus of the project is directed to achievable targets that will reduce the most significant threats to the ES in cost effective ways. Where plans and strategies at the local level for specific sectors exist, the project will support the review and revision of these plans / strategies to ensure that biodiversity conservation concerns and principles are adequately addressed. The project will support actions to strengthen capacities of key institutions at the national and local levels to assess and monitor impacts of development on ES Critical Habitats, including application of EIA procedures, strategic environmental assessment, and ensuring integration of biodiversity-compatible practices in sectoral plans and strategies. The project will also work with the private sector, in particular commercial plantations, salt producers and tourism operators, to provide best practices and tools on biodiversity-compatible practices based on international and regional experiences, as well as provide support in terms of identifying market linkages. At the community level, efforts will focus on strengthening existing and new village institutions to enable them to take over the role of managing natural resources effectively. Finally, the project will also develop a long term financial sustainability strategy. This strategy will explore a mix of approaches such as re-alignment (or increasing) existing government budgetary resources, raising additional funds from innovative approaches such as public-private partnerships, and attracting CSR spending by private companies operating in or ES habitats.

Global environmental benefits

The immediate global biodiversity benefit is the stabilization of critical habitats outside protected areas in 7 subdistricts (covering approximately 63,800 hectares), ensuring stability of globally threatened species of Water Lily (*Crinum thaianum*), Spoon-billed Sandpiper (*Eurynorhynchus pygmaes*) and Eastern Sarus Crane (*Grus antigone sharpii*). The critical habitats that will be conserved will also benefit other globally significant species, namely Black-winged Stilt (*Himantopus himantopus*), Pacific Golden Plover (*Phuvialis fulva*), Lesser Sand Plover (*Charadrius mongolus*), Asian Dowitcher (*Limnodromus semipalmatus*), Black-tailed Godwit (*Limosa limosa*), Whimbrel (*Numerius phaeopus*), Common Redshank (*Tringa stagnatilis*), Marsh Sandpiper (*Tringa stagnatilis*), Common Greenshank (*Tringa nabularia*), Nordmann's Greenshank (*Tringa guttifer*), Red-necked Stint (*Calidris ruficollis*), Curlew Sandpiper (*Calidris ferruginea*), Comb Duck (*Sarkidiornis melanotos*), Lesser Whistling Duck (*Dendrocygna javanica*), Northern Pintail (*Anas acula*), Garganey (*Anas quequedula*), Cotton Pygmy Goose (*Nettapus coromandelianus*), Common Moorhen (*Gallinula chloropus*), Purple Swamphen (*Porphyrio porphyrio*), Bronze-winged Jacana (*Metopidius indicus*), Black Bittern (*Ixobrychus flavicollis*), Yellow Bittern (*Ixobrychus sinensis*) and Purple Heron (*Ardea purpurea*).

Innovativeness, sustainability and potential for scaling up

Innovativeness: The project demonstrates many ‘first time’ approaches in Thailand. This includes integration of biodiversity (specifically ES) data into land use planning and strategic environmental assessments of sector development plans on individual ES. Similarly, a new approach will be used in an effort to make ES-friendly practices economically viable in order to be taken up by the larger component of production sectors by using the biodiversity and SEA information obtained, together with the valuation of biodiversity values, to promote and award ES-friendly practices. Further, many mainstreaming approaches have been tried and are being tried in Thailand; however, this project is innovative in the way that it targets a specific species within a landscape, resulting in benefits to many other species living in the same environment.

Sustainability: This project builds on a strong baseline. First, existing conservation actions are being undertaken to conserve ES, both inside and outside protected areas. There is a strong commitment from Government to address the low numbers and status of ES. Planned interventions will ensure that environmentally-damaging production sector practices are avoided in the most biodiversity-sensitive areas, and that impacts are reduced, mitigated and offset as necessary elsewhere, thus reducing pressures on biodiversity. The project will also be making the case for all stakeholders to start seeing ES protection as making economic as well as ecological sense. Recognition of the economic value of biodiversity, together with the ownership that will be achieved in the conservation approaches fostered augurs well for their sustainability. The project has financial sustainability written into it, through the review and realignment (or increase) of existing government budgetary resources and the raising of additional funds from innovative approaches such as public-private partnerships, attracting CSR spending of private companies operating in ES habitats.

Potential for scaling up: The selection of three ESs with different characteristics (one a stationary species mainly present outside PAs, one species with a foraging range that cannot be effectively conserved in a localised protected area system, and one international migrant species) has been made so as to cover as much diversity as possible, and generate a diverse set of practical experiences on mainstreaming ES conservation into economic activities outside protected areas. The project will develop and use a knowledge management system to ensure the effective collation and dissemination of experiences and information gained in the course of the project's implementation. The project will also develop a set of national policies and legislations including the Endangered Species and Habitat Act, that will not only apply to the subdistricts the project will be covering, but will have national coverage establishing the enabling environment for the project initiatives to replicated in all other subdistricts of Thailand.

A.2. Stakeholders.

Stakeholders	Project Implementation Role
MONRE- ONEP	ONEP will be a key Implementing Partner of this project through its Biodiversity Coordination Office. It will link the project to other divisions and offices within the MoNRE and other line ministries. It will lead the cross-sectoral coordination mechanism that will result in better planning, coordination, monitoring and enforcement capacities in regards to biodiversity mainstreaming into the productive sectors. It will also be responsible for updated and ensuring

	enactment of the Endangered Species and Habitat Act and the hosting of the GIS-based decision support system for ES and critical habitat data and will lead in the monitoring of acceptable limits of change in defined critical habitats. It will also be responsible for developing Recovery Plans for the three targeted ES and coordinate the applications of permits and issuing the permits on the receipt of Conservation Plans..
Provincial Natural Resource and Environmental Offices (PONREs)	In each of the three provinces the project will work in, PONRE will oversee the pilot-based activities and will be closely involved in the development of management and zoning plans for the critical habitats of Spoon-billed Sandpipers, Water Lily and Eastern Sarus Crane in these three provinces. It will play an important role in reaching out to local communities in coordination with the Irrigation Department and forest administrations.
The Royal Forest Department (RFD)	The Royal Forest Department will be involved in the development of the land use plans that will determine the allocation and management of the land – allocating land and determining land use practices in the broader landscape to ensure the long-term conservation of ES in Thailand.
Department of National Parks, Wildlife and Plant Conservation (DNP)	The DNP manages the non-hunting areas in Buriram Province and will be involved in the implementation of the land use plans and conservation plans for the ES in this Province.
The Department of Marine and Coastal Resources (DMCR)	The Department of Marine and Coastal Resources' (DMCR) potential role, besides being a member on the Project Board to guide the project operations, is to collaborate in the project implementation at the site level, specifically at Kokham Subdistrict. It could also provide technical advice and logistical supports for project implementation, as well as policy integration.
MONRE – Zoological Park Organisation of Thailand	The ZPO has been a lead agency for reintroduction of several globally threatened species in the wild – such as the Sarus Crane. They are also leaders for conservation communication and capacity building. Hence they have an important role in the project. For the Eastern Sarus Crane (Buriram Province), the Korat Zoo will also be a key partner as it has been conducting long term breeding, reintroduction and monitoring of Eastern Sarus Cranes at different sites.
Ministry of Interior	Ministry of Interior's Department of Local Administration Office is for ensuring the implementation of local initiatives and therefore is an important partner for all the components of the project. It also has responsibility and authority to oversee the work of TAOs nationwide.
Local government organizations (TAOs) and local communities which they represent	TAOs in the demonstration areas will be focal points for conservation activities at various interventions including planning, capacity building, local collaboration and partnership. The local government units (TAOs) are responsible for local sustainable development. They also coordinate actions of different agencies and facilitate the resolution of land-use conflicts; they will need to be involved in the process of land use planning; and oversee and allocate budgets that communities may access for funding livelihood projects and other development work.
Provincial Irrigation Offices	For the conservation of the Eastern Sarus Crane, the Irrigation Office is a key stakeholder and will be actively involved in the project in Buriram Province
Private Sector	The project will partner with local businesses, such as tourism entrepreneurs and salt producers to ensure biodiversity friendly actions at the sites.
CBOs/local and international NGOs	The project will actively involve local NGOs such as the Plern Pri Klong Nakha Club; Bird Conservation Society of Thailand (BCST) and Khok Kham Conservation Club in local conservation planning and implementation.

A.3 Risk.

Risk	Rating	Management Strategy
Coordination and cooperation between different government agencies will be difficult at the sites	Moderate	A number of government agencies working on water resources, agriculture, and local development will need to be involved in achieving coordinated management planning at the sites, which can be time-consuming. However, there is a recent move in Thailand to ensure strong local ownership over local development planning and the local Tambon officials and locally elected leaders are empowered to take on leadership roles to ensure strong coordination between line agencies.
The development and enactment of ES legislation may be delayed	Moderate	The project will employ a highly consultative approach for development of the regulatory framework drawing on reviews and inputs from various stakeholders (government, private sector, communities, local bodies and academicians) to ensure feasibility and acceptability of the proposed legal document. The proposed cross-sectoral institutional mechanism will become the vehicle for optimizing dialogue among stakeholders and support towards the enactment of the legislation. Further, the project is led by the government agency responsible for setting up environmental policies and legislation in Thailand; the local ownership of the project is high. The Government of Thailand has initiated the reform of numerous environmental policies. Inevitably, the integration of ES into production sectors will be difficult unless there is clear political understanding of the need for these changes, and a full commitment to making this happen. To some extent this understanding and commitment have already been built at Government-level. This will be further strengthened in making the economic case for biodiversity conservation and showcasing its value in the three targeted areas. In order to further mitigate this risk, UNDP will maintain a watching brief over commitment and work with national and local authorities to expedite legal reforms.
Weak coordination within and between local and national government and other stakeholder institutions responsible for land management; limited capacity (especially at lower levels) to interact with land users on land/water management	Moderate	The project will support and facilitate activities to ensure improved institutional coordination, capacity building and awareness-raising at the national, provincial and district levels. The project's output "Office of Natural Resources and Environmental Policy and Planning led effective coordination mechanism in place" will address this risk through emplacing a multi-stakeholder coordination framework.
ES-friendly land management	Moderate	Only practices identified by local communities themselves as socio-economically sustainable will

Risk	Rating	Management Strategy
does not lead to sufficient economic gains for households at the project sites		be disseminated for adoption on a broader scale. The project will further reduce this risk by encouraging ES-friendly land management practices and by rapidly building the capacity of communities to increase income through business development skills and marketing. The project design phase has already identified a number of options for increased income for communities through ecotourism and marketing of ES-friendly products, as outlined under Component 2 of the project.

A.4. Coordination.

The project adds value to a number of related initiatives as set out below:

The UNDP/GEF project “*Integrated Community-based Forest and Catchment Management through an Ecosystem Service Approach (CBFCM)*” is creating an enabling policy and institutional environment for scaling-up integrated CBFCM practices in Thailand. This is being done through: (i) strengthening systemic capacities in sustainable forest and catchment management at the local, regional and national levels, and (ii) the expansion of CBFCM coverage throughout the country through pilot testing of defined PES and bio carbon financing mechanisms and up-scaling of best practices. This project is closely linked to Component 2 of the proposed project in regards to encourage local management and benefits from the natural resource management. The UNDP/GEF project “*Catalyzing Sustainability of Thailand’s protected Area System*” aims to overcome barriers to sustainability of Thailand’s PA system through: (i) improving the governance in order to support an enabling environment for long-term PA system sustainability; (ii) enhancing institutional and individual capacities; (iii) assessing and testing revenue generation mechanisms and management approaches at 5 demonstration sites leading to increased funding levels of the PA system; and (iv) emplacing new models of PA management that support effective management of the System. The project focuses on Protected Area Management where the proposed project will focus on mainstreaming biodiversity in productive and development sectors outside PAs, thereby complementing each other in the overall conservation of biodiversity in Thailand. The UNDP/GEF “*Sustainable Management of Biodiversity in Thailand’s Production Landscapes*” project’s objective is designed to strengthen national and local capacity for mainstreaming biodiversity into the management of ecologically important production landscapes by transforming the supply and market chain of biodiversity-based products. The project will be building national capacity for support of Biodiversity Business through: (i) Improved institutional capacity and staff competences of BEDO (Biodiversity-based Economy development Office) as Thailand’s Biodiversity Business Facility for facilitation and support of community-based social enterprises; and (ii) Improved national cooperation and coordination, among partners with competencies related to biodiversity business. The proposed project will focus on land-use planning and the implementation of restrictions (communities compensated in the event that subsistence livelihoods are negatively influenced) adding an important component to the range of mainstreaming tools available in Thailand. A Technical Working Group will be established that brings together technical experts on biodiversity conservation: all the above related projects will be represented on this group. Regular meetings will be held between the said projects to leverage synergies.

B DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 National strategies and plans or reports and assessments under relevant conventions.

The project is fully aligned with Thailand’s “National Policies, Measures and Plans on the Conservation and Sustainable Utilization of Biodiversity (2008 – 2012)” which is the country’s NBSAP. The project is in full compliance with key strategies laid out in this document – especially “Build capacity of the people and local administrative organizations on the conservation and sustainable use of biodiversity over at least 40% of the country’s total area”; “build capacity and expertise of institutions and their staff on the biodiversity conservation”; “Strengthen capacity in conservation, restoration and protection of natural habitats, within and outside the protected areas”; The NBSAP has also further noted the need to “Provide specific protection for endangered, rare and endemic species”. This project will directly support these strategies. Most of the ES sites noted in this project are wetlands. This project will also support the implementation of Thailand’s Action Plan (2009 – 2014) to achieve the strategy on wetland conservation which has five goals – including conservation of wetlands with significant international importance; international cooperation; and institutional performance and efficiency. The project is also in line with a Cabinet Resolution from a meeting on November 3, 2009, which approved several measures for wetland conservation. These include issues such as the declaration of public wetland areas prohibiting any further utilization and conserving areas as water sources and water retention; the monitoring and maintenance of the wetland areas including containing the accessibility and land encroachment that will affect the public wetland areas; the increase of public wetland areas; the increase of public awareness and the participation in the planning and management process of nationally- and internationally-significant wetlands; boundary demarcation to prevent land encroachment; the declaration of nationally- and internationally-significant wetlands as sanctuary and environment protected areas; and the restoration and rehabilitation of degraded wetland areas to allow ecological and hydrological systems to function naturally.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

The project is designed to engineer a paradigm shift from unsustainable to sustainable, biodiversity-friendly land management in the critical habitats of Endangered Species. This will be accomplished by assisting Thailand in developing regulations for mainstreaming ES conservation into productive landscapes. Specifically, the national legislation will be amended and a policy introduced on identification of species and habitats that must be accounted for in land use planning and economic activities, and methodologies for adapting land-user practices to ensure habitat integrity. Land use plans will be developed, compliance monitored

and enforced based on increased knowledge and capacities of the regulatory, planning and enforcing authorities as well as land users/owners (production sectors). Further, technologies and incentives will be tested that help maintain the integrity of endangered species and their habitats, promoting inclusion of sound scientific approach to drafting land-use principles and practices. The project is in line with GEF Biodiversity Focal Area, Strategic Objective 2: (i.e. *Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sector*). It will specifically contribute to Outcome 2.1: *Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation*, as well as Outcome 2.2: *Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks*. The project advances the strategic targets of the UNCBD Strategic Plan for Biodiversity 2011 – 2020, in particular, 1) By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity; and 2) By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those in decline, has been improved and sustained.

B.3 The GEF Agency’s comparative advantage for implementing this project:

The United Nations Development Programme has two signature programmes on biodiversity – one of which deals with mainstreaming biodiversity into development sectors. This project builds on UNDP’s global work on this issue as well as on the strong partnership it has with the Royal Government of Thailand and the Thai civil society in their efforts to promote conservation and sustainable use of biodiversity in the country. The present project will benefit from, as well as contribute to, UNDP’s past and current work in Thailand. UNDP has been supporting projects to build national and local capacities to ensure that supply chains for various commodities are environmentally and socially responsible and that such products have secure market shares. The project also builds on UNDP’s work with the private sector including policy advice and capacity building support to governments. It also helps poor producers access markets that offer realistic prospects for sustainable, employment-intensive growth and mobility to higher paying jobs, through investments in human capital and fostering the entrepreneurial skills of the poor. Moreover, UNDP has a large global portfolio and extensive experience in supporting effective environmental governance by developing the national enabling environment, including policy, laws, capacity building and partnership development. In Thailand, UNDP has considerable experience working with local communities – particularly on land management and livelihoods – through its work on the UNDP/GEF Small Grants Funds. The interventions proposed under this project are in line with the current United Nations Partnership Frameworks of Thailand (2012 – 2016) developed jointly by resident and non-resident UN Agencies, Government of Thailand and civil society and which aims to enhance national development processes towards environmental sustainability. In terms of staffing, UNDP Thailand has sufficient staff to provide effective supervision of the project. In addition, technical backstopping will be provided from the UNDP-Asia Regional Centre (Bangkok) during the design and implementation phases.


PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

(Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template.

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Chote Trachu	Permanent Secretary	c	19 February 2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP-GEF Officer-in- Charge and Deputy Executive Coordinator		08/02/2013	Johan Robinson, Regional Technical Advisor for Biodiversity, UNDP	+662- 3049100 Ext.5100	johan.robinson@undp.org

Annex 1: General Information on Targeted Species

Spoon-billed Sandpiper <i>Eurynorhynchus pygmeus</i>	
Listing and justification	This charismatic species is listed as Critically Endangered because it has an extremely small population that is undergoing an extremely rapid population reduction. This is because of a number of factors, including habitat loss of its breeding, passage and wintering grounds that are compounded by disturbance, hunting and the effects of climate change. Fledging success and juvenile recruitment are very low, leading to fears that the population is ageing rapidly; action is now urgently required to prevent the extinction of this species.
Distribution and population	This species has a naturally limited breeding range on the Chukotsk peninsula and southwards to the isthmus of the Kamchatka peninsula, in north-eastern Russia. It migrates down the western Pacific coast through Russia, Japan, North Korea, mainland China, Hong Kong (China), Taiwan (China) and Vietnam, to its main wintering in Bangladesh and Myanmar. Wintering birds have been recorded from India, Sri Lanka, Thailand, Vietnam, the Philippines, in the Fujian province of China, Peninsula Malaysia and Singapore. It occurs regularly at only a few sites within the wintering range, with important countries including Bangladesh, Thailand and Myanmar. Due to its specialized breeding habitat requirements it was probably always a scarce species, but numbers have dropped in recent years and surveys on the breeding grounds have revealed a dramatic decline from 2,000 – 2,800 pairs in the 1970s to fewer than 1,000 pairs in 2000, 402 – 572 pairs in 2003, 350 – 380 pairs in 2005 and not more than 150 – 320 pairs in 2008. The breeding population in 2009 – 2010 was optimistically estimated at 120 – 200 pairs (in an estimated total population of 500 – 800 individuals, perhaps indicating an 88% decline since 2002, equating to an annual rate of decline of 26%). These declines have taken place across all known breeding sites, and it is unlikely that significant colonies remain undiscovered. Declines are also being observed at wintering grounds.
Ecology	It has a very specialized breeding habitat, using only lagoon spits with crowberry-lichen vegetation or dwarf birch and willow sedges, together with adjacent estuary or mudflats habitats that are used as feeding sites by adults during nesting. The species has never been recorded breeding further than 5 km from the seashore. Breeding birds are very site-faithful. It breeds either in single pairs or loose aggregations. During winter, it prefers mixed sandy tidal mudflats with uneven surface and very shallow water, mainly in the outermost parts of the river deltas and outer islands, often with a higher sand content and thin mud layer on top. In the areas with total coastal conversion, it favours certain stages in the management of saltpans. The species feeds by plover-style pecking and occasionally probing, also appearing to use its bill as a shovel.
Threats	Throughout its migratory and wintering ranges, tidal flats are being reclaimed for industry, infrastructure and aquaculture and are becoming increasingly polluted. Although not specifically targeted, it is regularly caught in nets set to catch other waders for food in the key wintering areas. Hunting in the species' non-breeding range could be a crucial factor in the poor rate of recruitment into the breeding population, as immature birds do not return to the breeding areas until they are two years old and thus are more exposed to capture. There are no immediate threats to the breeding grounds, but nests in the vicinity of villages are sometimes destroyed by dogs. Poor breeding productivity in recent years has been attributed to heavy nest predation and bad weather. Significant habitat degradation has been observed in 5 of 30 visited breeding locations. Human disturbances, both by residents and researchers, may cause increased levels of nest desertion and predation by foxes and skuas. Shorebirds, including this species, are also occasionally killed by children with slingshots. Small but insignificant numbers of birds and their eggs have been collected for scientific purposes in the last 20 years. Climate change and associated habitat shifts are expected to impact negatively on this species and others dependent on tundra habitat for breeding. Modeling indicates that 57% of the breeding habitat for this species could be lost by 2070.
Conservation actions underway	Protected areas in its breeding, staging and wintering areas include Moroshechnaya and several local wildlife refuges on the Chukotsk Peninsula (Russia), Yancheng and Chongming Dongland (China), Mai Po (Hong Kong), Lanyang Estuary (Taiwan (China)), Point Calimore and Chilka Lake (India), and Xuan Thuy Nature Reserve (Vietnam). The Bird Conservation Society of Thailand has lobbied the Government of Thailand to request that Khok Kham be designated a Ramsar site. A Species Action Plan was produced in 2006, updated in 2008 and 2010. At the fifth meeting of the East Asia-Australasian Flyway Partnership in Cambodia in December 2010, the partners agreed to establish a Task Force for this species, charged with implementing the action plan.

Sarus Crane <i>Grus antigone</i>	
Listing and justification	This crane is listed as Vulnerable because it is suspected to have had a rapid population decline, which is projected to continue, as a result of widespread reductions in the extent and quality of its wetland habitats, exploitation and the effects of pollutants.
Distribution and population	<i>Grus antigone</i> has three disjunct populations in the Indian subcontinent, South-East Asia and northern Australia. Subspecies <i>sharpii</i> occurs in South-East Asia where its range has declined dramatically, now being confined to Cambodia, extreme southern Laos, south Vietnam (c. 800 – 1,000 birds between these three countries), and Myanmar (c. 500 – 800 birds).
Ecology	In South-East Asia the species show a preference for dry savanna woodlands with ephemeral pools during the breeding season, frequenting open and man-made wetlands during the non-breeding season. It prefers a mixture of flooded, partially flooded and dry ground for foraging, roosting and nesting. It is omnivorous, feeding on a variety of roots and tubers as well as invertebrates and amphibians. It breeds during the wet season, migrating to key non-breeding sites during the dry season where the birds form sizeable aggregations. Successful breeding pairs generally raise one or two chicks, with three chicks being extremely rare.
Threats	The main threats are a combination of loss and degradation of wetlands, as a result of drainage and conversion to agriculture (for example wet rice paddy into dry sugarcane or soya bean), ingestion of pesticides, and the hunting of adults and collection of eggs and chicks for trade, food, medicinal purposes and, in some cases, to help prevent damage to crops. In Vietnam and Cambodia [and Thailand], large area of the Mekong delta, which supported key dry season habitat, have been reclaimed for agriculture in recent decades. The mechanization of farming practices may threaten birds breeding on agricultural land. High human usage of wetlands results in a high rate of disturbance to cranes and considerably limits breeding success.
Conservation actions underway	It occurs in a number of protected areas throughout its range, importantly Ang Trapaeng Thmor, Cambodia and Tram Chim National Park, Vietnam, which seasonally support the majority of the Indochinese population.

Water Lily <i>Crinum thaianum</i>	
Listing and justification	Red List category: Endangered
Distribution and population	The Water Lily has a very restricted range in southern Thailand, with an extent of occurrence of about 64 km ² and an area of occupancy of 48 km ² . Originally found on the coastal plain of southern Thailand, but it is now confined to isolated patches on a few rivers and streams in Phang Nga and Ranong Province. The population is severely fragmented by habitat loss (only 3.5% of the original habitat remains) and there has been rapid population declines in some areas as a result (70% decline in the Nakha river during the period 2003 – 2008), and there has been local extinction in some streams within its range. The threats are all ongoing; hence there is continuing decline in a number of parameters. The species is therefore listed as Endangered and it could well become Critically Endangered in the near future if these trends continue. The species is endemic to Thailand.
Ecology	The Water Lily is a very important aquatic plant that functions as a keystone species in its aquatic habitats. It provides important habitat for native freshwater fish species such as Soro Brook Carp (<i>Tor soro</i>), which use it as a habitat to lay eggs. Other aquatic species such as water snails and frogs also use it as breeding habitat. Other native fish eat the young leaves of Water Lily.
Threats	A major threat to the habitat of this species is the dredging of rivers and streams for removal of sediment and rock for construction and land reclamation purposes (this has also increased the speed of water flow in habitats of the Water onion, where entire populations have been dislodged). There is also extensive changes in the ecology of the streams and rivers due to land use changes in the adjoining areas (e.g. clearing of forest for agriculture) and resultant land-based erosion and river bank erosion (the substrate of the Nakha and Kuraburi rivers has changed drastically over the past 10 years, due to erosion. The muddy substrate that facilitates the growth of the Water Lily has been replaced by pebbles, rock and gravel, in large areas of these rivers. Collection of bulbs from the wild for sale to the international trade for home fish ponds and aquaria is also a threat which needs closer monitoring.
Conservation actions	The Office of National Environmental Policy and Planning in Thailand (ONEPP) has declared this species as nationally endangered. Local

underway	conservation groups in the Ranong province have also initiated the conservation of this species in its wild habitats (Youth Group and Pleun Prai Sri Na (a Conservation Group established by Klong Na Ca Wildlife Sanctuary). The youth group is involved in awareness campaigns, <i>ex situ</i> propagation of the Water Onion in nurseries, rescue of dislodged Water Onion deposited on river banks and subsequent re-planting in the wild. The Pleun Prai Sri Na Kha Conservation Group, together with the local authority organizes tourist visits (in dinghy paddle boats) along Na Nka River to observe <i>Crinum thaianum</i> during its flowering period (October – December) every year. About 600 Thai tourists visited area in 2007. A fee of 450 Thai Baht (ca. 15 US\$) is charged to each visitor.
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