



United Nations Development Programme
Country: Thailand

Project Title: **Integrated community-based forest and catchment management through an ecosystem service approach (CBFCM)**

UNPAF Outcome: **Outcome 4:** Improved sustainable utilization and management of natural resources and national policy levels

UNDP Strategic Plan: Environment and Sustainable Development

Primary Outcome: Mainstreaming Environment and Energy

Secondary Outcome: Mobilizing Environmental Financing

Expected CP Outcome(s):

- 1) Efficient community-based natural resources and environmental management in selected ecosystems with effective engagement of people's organizations in policy- and decision-making processes affecting the environment and the use of local natural resources;
- 2) Increased capacity of national agencies to set policy priorities and remove barriers to pursuing sustainable management of biodiversity, renewable energy, and water resources in response to national priorities and in compliance with international treaties;
- 3) Promoting community-based knowledge management by supporting the formation of community networks and promoting evidenced-based policymaking at all levels.

Expected CPAP Output (s):

1. Demonstration of co-management mechanisms and practices between CBOs and government authorities with policy support and budget for local sustainable development initiatives;
2. Improved availability of data at national and sub-national levels to support evidence-based planning, policy and decision-making;
3. Dissemination of good practices on sustainable natural resource management and use;
4. A knowledge system that integrates scientific and indigenous knowledge and is accessible to community Networks and policy makers;
5. A knowledge management mechanism and facilities available for community learning, sharing experiences and networking.

Executing Entity/Implementing Partner: Ministry of Natural Resources and Environment (MONRE)

Implementing Entity/Responsible Partner: UNDP

Brief Description:

This project's objective is to create an enabling policy and institutional environment for scaling-up integrated Community Based Forestry and Catchment Management (CBFCM) practices through innovative financing mechanisms. The project will achieve this objective by strengthening systemic capacities in sustainable forest and catchment management at the local, regional and national levels (Outcome 1), and by supporting the expansion of CBFCM coverage throughout the country through pilot testing of defined Payment for Environmental Services (PES) and biocarbon financing mechanisms (Outcome 2).

The project will build capacities of MONRE to harmonise policies, plans and legal instruments to support CBFCM and PES and biocarbon schemes. It will also support the establishment of a multi-sectoral mechanism for CBFCM, with active participation of all Regional CBFCM Networks, REOs, ONEP and RFD. This will act as an effective policy feedback, knowledge sharing and capacity development mechanism. The project will also strengthen national capacities to promote PES (including and biocarbon) in order to strengthen community incentives for effective forest and catchment management.

The project will support scaling up of CBFCM best practices using PES and biocarbon financing mechanisms at four sites, led by four Regional Environment Offices (REOs). These sites include Mae Sa Catchment (North), Tha Chin Catchment (Central), Lam Sebai Catchment (Northeast), and Pa-Ngan Catchment (South). The project will strengthen capacities of local authorities, landholders and the private sector to ensure that innovative financing mechanisms (PES) is used for improving livelihoods, global biodiversity conservation benefits and GHG emission reduction from land use and land use changes. In order to do this, the project will support catchment level ecosystem services valuation (incl. biocarbon) and assessment of benefits, trade-offs and various opportunity costs of land-use options taking into full account the ecosystem services. Biodiversity friendly PES & biocarbon financing strategies will be implemented, with institutionalization of payment distribution structures that fully consider gender and other social equity aspects.

Programme Period: 2007-2011/2012-2017 Programme Component: Biodiversity PIMS#: 4033 Project Title: Integrated community-based forest and catchment management through an ecosystem service approach (CBFCM) Award ID: 00061756 Project ID: 00078499 Project Duration: 4 years (2012 – 2015) Management Arrangement: NIM PAC Meeting Date: 25 January 2012	Total Budget: USD 14,318,182 Allocated Resources: <ul style="list-style-type: none"> • GEF USD 1,758,182 • MONRE USD 12,210,000 • UNDP USD 350,000
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CONTENTS

ACRONYMS AND ABBREVIATIONS.....	5
SECTION 1: SITUATION ANALYSIS.....	6
1.1 General introduction to Thailand	6
1.2 Thailand’s Forests, Biodiversity and Green House Gases	7
1.3 Policy and Legislative Context for Forests and Catchment Management	11
1.4 Community Forest Management-related Policy and Legal Frameworks.....	12
1.5 Institutional Context.....	13
1.6 Threats to biodiversity in forests and catchment areas	18
1.7 Long-term solution and barriers to achieving the solution	21
1.8 Stakeholder Analysis.....	23
1.9 Baseline Analysis.....	25
SECTION 2: PROJECT STRATEGY.....	27
2.1 Project Rationale	27
2.2 Policy conformity.....	27
2.3 Country ownership and drivers	28
2.4 Design principles and strategic considerations	30
2.5 Project objective, outcomes, outputs and activities	32
2.6 Key Indicators, risks and assumptions	44
2.7 Expected global benefits	48
2.8 Financial modality	50
2.8 Cost effectiveness	50
2.10 Sustainability.....	51
2.11 Replicability	51
SECTION 3: PROJECT RESULTS FRAMEWORK.....	53
Part I: Project Results Framework	53
PART II: Total Budget and Workplan.....	59
Part III: Budget Notes	62
SECTION 4: PROJECT MANAGEMENT ARRANGEMENT	65
4.1 Project Management Structure.....	65
4.2 Audit arrangements.....	69
4.3 Logos.....	69

4.4 Intellectual property rights	69
SECTION 5: MONITORING FRAMEWORK & EVALUATION.....	70
5.1 Project Inception Phase	70
5.2 Monitoring responsibilities and events	70
5.3 Project Reporting	71
5.4 Independent project evaluations.....	73
5.5 Learning and knowledge sharing	74
5.6 Monitoring & Evaluation work plan and budget	74
SECTION 6: LEGAL CONTEXT	76
SECTION 7: ANNEXES	77

ACRONYMS AND ABBREVIATIONS

APR	Annual Progress Report
AWP	Annual Work Plan
CBFCM	Community-based Forest and Catchment Management
CO	Country Office (of UNDP)
CP	Country Programme
CPAP	Country Programme Action Plan
CSO	Civil Society Organization
DMCR	Department of Marine and Coastal Resources, MONRE
DNP	Department of National Parks, Wildlife and Plants Conservation
DWR	Department of Water Resources
ERC	Evaluation Resource Centre (of UNDP)
HDI	Human Development Index
MDG	Millennium Development Goals
M&E	Monitoring & Evaluation
MONRE	Ministry of Natural Resources and Environment
MTE	Mid-term Evaluation
NCB	National Coordinating Body
NEB	National Environment Board
NESDP	National Economic and Social Development Plan
NFP	National Forest Policy
NGO	Non-governmental organization
NTFP	Non-Timber Forest Product
ONEP	Office of Natural Resources and Environmental Policy and Planning, MONRE
PAO	Provincial Administrative Organization
PB	Project Board
PIMS	Project Information Management System (of UNDP-GEF)
PIR	Project Implementation Review
PONRE	Provincial Office for Natural Resources and Environment
PPG	Project Preparation Grant
PRF	Project Results Framework
PMU	Project Management Unit
QPR	Quarterly Progress Reports
REO	Regional Environment Office
RCU	Regional Coordination Unit (of UNDP-GEF)
RID	Royal Irrigation Department
RTA	Regional Technical Advisor (of UNDP-GEF)
RTG	Royal Thai Government
SGP-PTF	Small Grants Programme for Operations to Promote Tropical Forests
TAO	Tambon Administrative Organization
Thb	Thai Baht
TOR	Terms of Reference
TGO	Thailand Greenhouse Gas Management Organisation
UNDP	United Nations Development Programme
WCMO	Watershed Conservation Management Office

SECTION 1: SITUATION ANALYSIS

1.1 General introduction to Thailand

1. Thailand is located at the centre of the Indochina Peninsula. It shares borders in with the Lao People's Democratic Republic, Cambodia, Malaysia, and the Union of Myanmar (see Figure 1, below). Thailand's total land area is about 513,000 km², which houses a population of a little over 67 million inhabitants (as of 2010). Thailand's annual population growth rate is 0.65 percent.¹ The country has seen a rapid rate of urbanisation since the 1980s. In 1965, only 13 percent of the population lived in urban areas, to 21 percent in 2000.² Population density is approximately 132 persons/km².³ The economy is diverse and comprises agriculture, manufacturing and service industries.
2. Thailand has undergone significant progress in human development in the last twenty years, as its Human Development Index Rating (HDI) of 0.778 shows.⁴ It is on track to achieve most of the Millennium Development Goals (MDGs) by 2015.⁵ However, this progress has not benefited everyone equally. Benefits have mostly accrued to those more closely linked to the international economy, such as those employed in export-oriented manufacturing sector. Small scale rural farmers have generally received fewer benefits. Development challenges therefore remain for certain groups and geographical regions, and include unsustainable use of natural resources. Poverty is still a genuine concern and is widespread in the rural northeast, far north and far south of the country.⁶

Figure 1: Thailand in context of its neighbours



¹ US Central Intelligence Agency (CIA), World Facts, 2011: <https://www.cia.gov/library/publications/the-world-factbook/geos/th.html>

² World Bank. 2000. *Thailand environment monitor*. Available at: www.worldbank.or.th/environment.

³ RFD. 2004. *Forestry statistics of Thailand*. Bangkok, RFD Information Office. Available at: www.forest.go.th/stat/stat47/TAB1.htm.

⁴ United Nations Development Programme (UNDP). Human Development Report, 2010.

⁵ UNDP, HDI Report 2010.

⁶ United National Thailand. Socio-economic situation: <http://www.un.or.th/thailand/economy.html>

1.2 Thailand's Forests, Biodiversity and Green House Gases

3. Thailand is one of the richest countries for biodiversity in Southeast Asia. It is situated within two major bio-geographical regions: the Indochinese region in the North and the Sundaic region in the South.
4. A precise figure of Thailand's forest cover is difficult to obtain because of discrepancies in forest category definitions, assessment methods and types of maps used. FAO data shows that around 37.1% (18,972,000 ha) of Thailand is covered by forest.⁷ Of this total, 21% (equal to about 3,986,000 ha) is classified as primary forest, which is the most biologically diverse and carbon dense form of forest. Thailand also has some 3,986,000 of planted forest.⁸ According to recent figures, the total area reforested between 1906 and 2004 lies somewhere between 1.05 million ha (FAO data) and 1.09 million ha (RFD, 1998; 2004; Green World Foundation, 1999).⁹ Figure 2, below shows the distribution of forests (in green colour) in Thailand. Most of Thailand's forested areas are in the North-West region and along the border with the Union of Myanmar.

Figure 2: Thailand's forest distribution (in green colour)



5. Forest ecosystems in Thailand are very important for global biodiversity values. Parts of at least 4 forest global ecoregions identified in WWF Eco-regions 200 are found in the country – which include the Northern Indochina Subtropical Moist Forest, Kayah-Karen/Tenasserin Moist Forests,

⁷ FAO, 2009.

⁸ FAO, 2010.

⁹ Lakanavichian, 2006.

Peninsular Malaysian Lowland and Montane forests and Cardamom Mountains Moist Forests. Thailand's Fourth National Report to the CBD (2010) notes that the country has an estimated 12,000 species of vascular plants, including 658 are fern species and 10,000 flowering plant species (including 1,140 orchid species). Non-vascular plants consist of over 2,154 species, including algae and bryophytes (such as moss, hornwort, and liverwort). At least 982 bird species have been recorded in the country as well as 350 reptile species, 137 semi-aquatic animal species, and over 720 freshwater species and 2,100 marine fish species. Over 83,000 species of invertebrates (mostly insects) have also been recorded.

6. IUCN's Red List has recorded 355 species globally threatened species in Thailand (including critically endangered, endangered, and vulnerable species). Of these, 89 species are considered to be primarily dependent on forest ecosystems. Some of the key ones include the following:
 - **Critically Endangered:** *Bos sauveli* (Grey Ox), *Cryptophaea saukra*, *Cycas chamaoensis*, *Cycas tansachana*, and *Sarcogyps calvus* (Red-headed Vulture).
 - **Endangered:** *Bos javanicus* (Banteng), *Bubalus arnee* (Indian Water Buffalo), *Cairina scutulata* (White-winged Duck), *Caliphaea angka*, *Ciconia stormi* (Storm's Stork), *Cuon alpinus* (Dhole), *Hipposideros halophyllus* (Thailand Leaf-nosed Bat), *Hylobates agilis* (Agile Gibbon), *Hylobates lar* (Lar Gibbon), *Hylobates pileatus* (Pileated Gibbon), *Leptoptilos dubius* (Greater Adjutant), *Lutra sumatrana* (Hairy-nosed Otter), *Manis javanica* (Sunda Pangolin), *Mergus squamatus* (Scaly-sided Merganser), *Panthera tigris* (Tiger), *Pavo muticus* (Green Peafowl), *Pitta gurneyi* (Gurney's Pitta), *Prionailurus planiceps* (Flat-headed Cat), *Prionailurus viverrinus* (Fishing Cat), *Pteromyscus pulverulentus* (Smoky Flying Squirrel), *Rucervus eldii* (Eld's Deer), *Symphalangus syndactylus* (Siamang), *Tapirus indicus* (Malayan Tapir), *Trachypithecus germaini* (Indochinese Lutung), *Trachypithecus phayrei* (Phayre's Leaf-monkey), *Tringa guttifer* (Spotted Greenshank), *Cycas elephantipes*, *Cynogale bennettii* (Sunda Otter Civet), *Elephas maximus* (Asian Elephant), *Hapalomys longicaudatus* (Greater Marmoset Rat) and *Heliopais personatus* (Masked Finfoot).
 - **Endemism:** Thailand's forests are also home to several endemic species such as Kitt's Hog-nosed Bat (*Craseonycteris thonglongyai*), Neill's Long-tailed Giant Rat (*Leopoldamys neilli*), Surat Serotine Bat (*Eptesicus demissus*) and 158 endemic orchid species.
7. Thailand's forests are also globally important repositories of carbon. According to Thailand's Second National Communication to the UNFCCC (2011)¹⁰, the country's main options to reduce GHG emission also include land use change and forestry sectors. Thailand has also consistently expanded forest areas and protected existing natural conserved forests to enhance the GHG sink. Since 2000, substantial efforts to expand forest areas have been carried out in the form of conserved forests; reforestation and rehabilitation of deforest areas, and expansion of community forest and commercial forest. Reforested areas in Thailand have increased by more than 400,000 rai (64,000 hectares). As a result, the forestry sector became a net sink of CO₂ in 2000.
8. Government estimates of carbon stock in living biomass in Thailand in 2010 was 881 million metric tons (including above ground and below ground), down from 908 million in 1990.¹¹ A 2000 analysis of greenhouse gas inventory for Thailand showed that forests in Thailand are a net sink for GHG (see Table 1, below). Carbon sequestration through sustainable forest management has the potential to play a significant role in ameliorating global environmental problems such as atmospheric accumulation of GHGs and climate change.)

¹⁰ Office of Natural Resources and Environmental Policy and Planning , Thailand's Second National Communication to UNFCCC (2011).

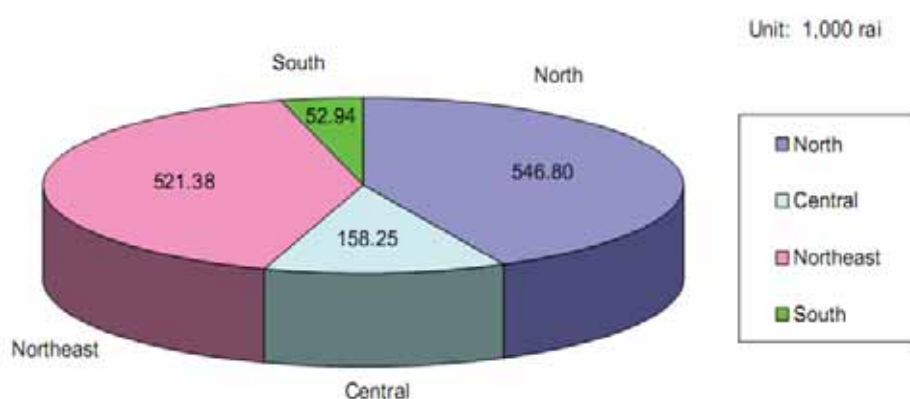
¹¹ <http://www.fao.org/docrep/013/al641E/al641E.pdf>

Table 1: Findings of a 2000 GHG inventory for Thailand (land use change and forestry)

Greenhouse gas source and sink categories	CO2 Emissions	CO2 Removal	CH4	N2O	NOx	CO	NMVOCs	SOx
All in thousand tons or gigagrams								
Changes in forest and other woody biomass stocks	0.0	-13,351.5	0.0	0.0	0.0	0.0	0.0	0.0
Forest and grassland conversion	44234.1	0.0	10.4	0.1	2.6	91.0	0.0	0.0
Others		39.022.5	0.0	0.0	0.0	0.0	0.0	0.0
Land-use change and forestry total	44234.1	-52374.0	10.4	0.1	2.6	91.0	0.0	0.0

Source: Thailand's First National Communication Report to the UNFCCC (2000)

9. Community management of natural resources has existed throughout the history of village settlements in Thailand. The "modern" Community Forest (CF) concept was introduced to Thailand in the mid-1970s. A national inventory conducted by the RFD in 1992 documented 12,000 rural groups protecting forest patches, ranging in size from 1 to 4,000 hectares. Traditional management systems are practiced in at least 328,000 hectares in the Northern uplands.¹²
10. Nationwide, at least four major types of CF can be identified:
 - Newly organized community protected forests, which have emerged as a response to illegal logging;
 - Monastery (*wat*) forests, which are restricted areas where plants and animals are protected;
 - Wetland forests, protected to ensure that there is a breeding ground for fish, frogs and crabs, and a source of bamboo, timber and fuelwood; and
 - Cultural forests, which have economic, historical or religious significance.¹³
11. Figures 3 and 4, below show the area and number of CF projects in Thailand.

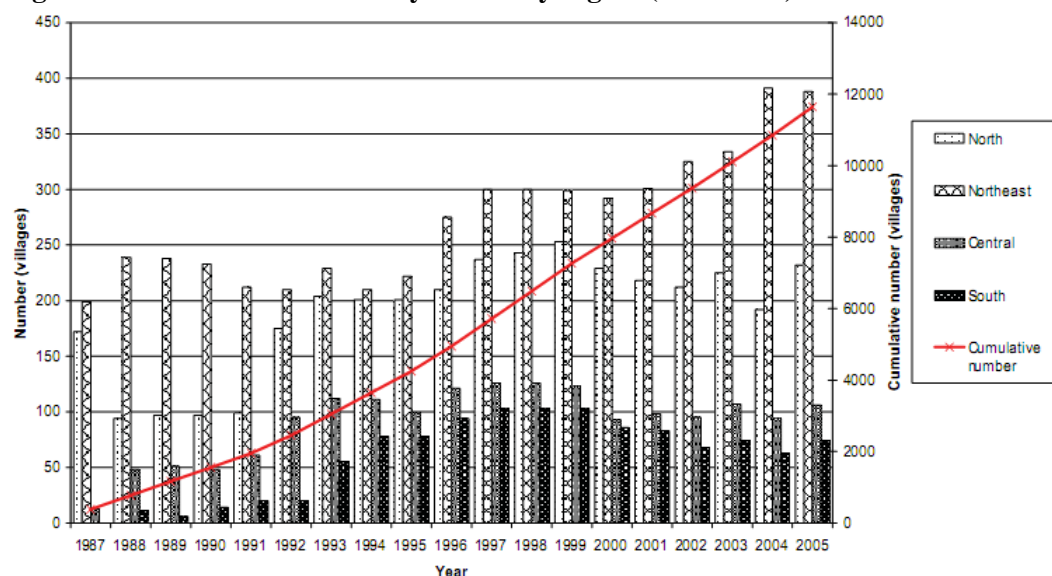
Figure 3: Areas of CF approved by RFD by region (2000-2005)

1 rai = .64 ha

¹² Asia Forest Network, Community Forests in Thailand: <http://www.asiaforestnetwork.org/tha.htm>

¹³ Poffenberger, M., Soriaga, R. & Walpole, P. 2005. *Forest stewardship in Southeast Asia: community forest management trends in Southeast Asia*. Bohol, Philippines, Asia Forest Network and California, USA, Community Forestry International. 139 pp.

Source: Lakanavichian, 2006

Figure 4: Numbers of community forests by region (1987-2005)

Source: Lakanavichian, 2006

12. In terms of catchment management, Thailand has 4 hydrological regions, which include 24 macro-scale catchment basins. These sustain a substantial diversity of flora and fauna, and provide vital local, national and global ecosystem functions, including provisioning services (e.g. fresh water production, storage and delivery, food, fuel and fibre production); regulating services (e.g. climate regulation, flood regulation, disease regulation and water purification); supporting services (e.g. nutrient cycling and soil formation); and cultural services (e.g. aesthetic, spiritual, educational and recreational). In recognition of the importance of protecting watershed areas, the government has developed a classification scheme for watershed management based on ecosystem service provision (i.e. water), topography and land-use. Thailand's watershed areas are categorized into the following five classes:

- **WSC1: Protected or conservation forest and headwater sources.** This class is divided into two subclasses: **WSC1A: Watershed protection forest:** protected forest areas, including the headwaters of rivers, usually at high elevations and on very steep slopes. Should remain as permanent forest cover and **WSC1B: Disturbed WSC1:** areas with similar physical and environmental features to class 1A, but with portions cleared for agriculture and consequently requiring special soil conservation measures. Where possible, these areas should be replanted as forest or maintained as permanent agroforestry.
- **WSC2: Commercial forest:** for protection and/or commercial forest, with mining and logging allowed within certain boundaries, usually at high elevations with steep to very steep slopes. May be used for grazing or crop production, with soil conservation measures.
- **WSC3: Fruit tree plantations:** uplands with steep slopes and less erosive land forms. May be used for commercial forests, grazing, fruit trees or certain agricultural crops, with soil conservation measures.
- **WSC4: Upland farming:** area with gentle slopping land suitable for row crops, fruit trees and grazing, with moderate need of soil conservation measures.
- **WSC5: Lowland forming:** gentle slopes or flat areas needed for paddy fields or other agricultural uses, with few restrictions.¹⁴

¹⁴ Lakanavichian, 2006.

1.3 Policy and Legislative Context for Forests and Catchment Management

13. A number of broad policies govern forest and catchment management in Thailand. The key ones include the National Policy, Strategies and Action Plan on the Conservation and Sustainable Use of Biodiversity (2003-2007) and the long-term Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016). Specific forest related policies include the National Forest Policy (NFP 1985)¹⁵ and the National Forestry Development Plan of 1997. A Cabinet resolution on 17 January 1989 banning all commercial logging in natural forests in the country also remains a key policy decision for forest management in Thailand. The Cabinet Resolution on Watershed Classification established different categories of watersheds as discussed earlier in this document. Such watersheds may contain protected areas within them as well.

14. Key laws on forest management include the following:

- The **Forestry Act 1941** regulates forestry activities and protects forest lands.
- **National Forest Reserve Act 1964** provides the underlying legislative framework for all Government regulation of forest areas in Thailand. In 1992, all Forest Reserve areas were divided into 3 zones (Conservation Forest, Economic Forest and Agricultural Use Forest). Conservation Forests cover Protected Areas and some other relatively undisturbed forests, like Class I watersheds. Economic Forests cover mainly commercial forest plantations. Agricultural Use Forests can be allocated to landless farmers land under the Agricultural Land Reform Programme.
- **The National Parks Act (1961)** provides for the establishment of both terrestrial and marine national parks for biodiversity conservation. The Act allows entry into national parks on a visitor basis, but forbids residence, hunting, clearing, gathering of vegetation, mining and the introduction of livestock within park boundaries.
- **The Wildlife Protection and Preservation Act (1960, revised in 1992)** provides for the establishment of wildlife sanctuaries as primarily wildlife conservation areas under DNP authority. As in the National Park Act, no forms of residence or extractive use are allowed within the area and entry is subject to notification of authorities and restricted to educational and research purposes. The Act also stipulates rules governing hunting and trade of wild animals and lists protected species.

15. There are also several policies that are directly relevant to mangrove forests. These include:

- **Cabinet Resolution 1978** bans land concessions in mangrove areas
- **Cabinet Resolution 1990** designates 3 zones in mangrove areas:
 - Protected Zone: strictly for conservation
 - Economic zone A: Conservation zone, but some utilization allowed
 - Economic Zone B: Development zone (buffer zone)
- **Cabinet Resolution 1997** set target to establish 160,000 ha (1 M *rai*) of mangroves by the end of the 8th National Economic and Social Development Plan (2001)

¹⁵ NFP stipulates the target to conserve 40% of the country land area under two types of forested area: conservation areas (25%) and economic forest areas (15%). Department of National Parks, Wildlife and Plant Conservation holds that the current forest areas as of 2008 is 107.62 *rai* or 33% of the total area of Thailand. www.dnp.go.th.

- **Cabinet Resolution 2006** stipulates that there should be 4 plans for the management of mangrove areas: Protection plan; Conservation of natural resource and environment plan; Promoting and Rehabilitation of Mangrove plan; and Increase Effectiveness in management and promote technology transfer plan.

1.4 Community Forest Management-related Policy and Legal Frameworks

16. Community involvement in natural resources management is enshrined in the 1997 Thai Constitution, which stipulates “the need for the participation of communities and local organisations in natural resource management as well as the right of indigenous people in management of natural resources” (Article 46).¹⁶ The 2007 Constitution of the Kingdom of Thailand (Part 12 on Community Right: Articles 66 and 67) provides the basis for community entitlement to co-manage the natural resources and environment in their areas.
17. In 2000, the Thai parliament passed the first reading of the draft Community Forest Management Bill. In 2002, the House of Representatives passed a version of the bill that recognises the legal status of communities living in and around Thailand’s National Forests Reserves, and proposed the establishment of community forests by rural communities to manage forest areas in cooperation with the RFD. However the Senate rejected key provisions and proposed amendments that would prevent local people in having a greater role in Thailand’s forests.¹⁷ Though a specific Community Forest Management Act is still pending in Thailand, the Tambon Administration Organization (TAO) Act (1994) does call for the role of village governments in forest use, planning and decision making.
18. The policy focus of watershed rehabilitation has been an evolving process. In the late 1970s the national focus was on watershed rehabilitation through reforestation of abandoned swidden areas, and through relocations of hill tribe villages from forestry catchments. In 1980s, the policy shifted toward integrated watershed management, which promoted land use planning, soil and water conservation measures, forest fire control and promotion of agricultural extension. In 1990s, the policy shifted towards participatory watershed management, with an emphasis on local people’s participation, village committees and watershed networks. From 2000 onwards, policy focused on “watersheds for the people”, which calls for greater community participation and benefit sharing.
19. In the last 20 years, the government strategy on watershed management has concentrated on maintaining and building a protective forest cover for the protection of soil and water quality / quantity. Over this period, “top-down” planning and implementation of costly large-scale reforestation have been substituted by more diversified approaches such as low density planting to minimize costs and maximize restoration impacts (particularly useful in degraded lands), alternative land-use and agricultural practices (introduced to discourage shifting cultivation) and landscape-level approaches.

Forest Sector and the National Policy on GHG Emission Reduction

20. According to Thailand’s Second National Communication to the UNFCCC (2011)¹⁸, Thailand’s main options to reduce GHG emission also includes land use change and forestry sectors. Thailand has consistently expanded forest areas as well as protected existing natural conserved forests to enhance the GHG sink potentials of natural ecosystems. Since 2000, substantial efforts to expand forest areas have been carried out in the form of conserved forests; reforestation and rehabilitation of deforest areas, and expansion of community forest and commercial forest. Reforested areas in Thailand have increased by more than 64,000 hectares. As a result, the

¹⁶ Salam, Noguchi and Pothitan, 2006.

¹⁷ Salam, Noguchi and Pothitan, 2006.

¹⁸ Office of Natural Resources and Environmental Policy and Planning , Thailand’s Second National Communication to UNFCCC (2011).

forestry sector became a net sink of CO₂ in 2000. In addition, there are strategies under MONRE for the management and administration of natural resources which are consistent with sustainable development and are related to GHG mitigation. These include:

- Protection of 17 million hectares of conserved forest;
- Rehabilitation of 240,000 hectares of forest land; Conservation and rehabilitation of 2,150 hectares of watershed areas and degraded forest areas
- Maintenance of 3,000 hectares of forest gardens in conserved areas with a survival rate of 80% or more;
- Maintenance of 256,000 hectares of marine and coastal resources.¹⁹

1.5 Institutional Context

21. The responsibility of managing natural resources in Thailand is shared among various ministries and departments. The Ministry of Natural Resources and Environment (MONRE) is the primary institution responsible for forest management and climate change mitigation policies. The Ministry of Interior, Community Development Department and Department of Local Administration have been active in efforts to help local communities develop integrated sustainable resource management plans. They are described below.

Ministry of Natural Resources and Environment (MONRE)

22. MONRE was established in October 2002, and its policy framework on natural resources management can be summarized as the following:

- Assessment of potential and situation of existing natural resources as well as its diversification.
- Natural resources protection, conservation and management for economic growth and fulfilling needs of the society.
- Regulating access to natural resources based on equal benefit sharing.
- Determining sustainable utilization measures via R&D.

23. MONRE hosts the secretariat for 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 on natural resources. Chaired by the Prime Minister, it comprises of the heads of all sectoral ministries whose activities affect the environment, heads of departments and government boards, and representatives of the private sector. NEB seeks to coordinate the environmental protection efforts of governmental agencies at the central and provincial levels. To do this, it recommends environmental policies and plans to the Cabinet for approval. It also has the power to prescribe environmental standards, approve Environmental Quality Management Plans and provincial action plans, recommend amendments, improvements and enforcement of laws, and monitor environmental compliance of government agencies and state enterprises. It is responsible for delivering policy recommendations to the National Economic and Social Development Board (NESDB), which incorporates these recommendations into its five-year National Economic and Social Development Plans (NESDP). Environmental policy frameworks stipulated in the 5-year NESDPs and MONRE's 4-year Action Plans are translated into action plans by the various ministries and their constituent departments, as well as by MONRE itself.

24. Key MONRE agencies related to forest and catchment management include the following:

¹⁹ Office of Natural Resources and Environmental Policy and Planning, Thailand's Second National Communication to UNFCCC (2011).

- ***The Office of Natural Resources and Environmental Policy and Planning (ONEP)*** deals with Thailand's environmental policy and serves as the coordination centre for natural resources management. The Office acts as the secretariat to the National Environmental Board, chaired by the Prime Minister. ONEP is divided into three sectors: Environmental Policy and Planning, Environmental Quality Management and Regional Environmental Management. The Environmental Policy and Planning Sector formulate national environmental policies, including policies related to conserving forest resources, natural and cultural environments, and environmental education and promotion. The Environmental Quality Management Sector monitors, controls, supervises and promotes incentives for prevention and remedy of environmental problems. It emphasizes environmental impact assessment in development projects and coordination in natural resources management. Its tasks also include coordinating international cooperation and global environmental obligations, and administering and managing Thailand's Environmental Fund. The Regional Environmental Management Sector manages biological resources through the Divisions of Natural Resources and Environmental Management and Coordination. Within the framework of the Convention on Biological Diversity (CBD), ONEP has compiled a State of Biological Diversity report for Thailand. It has also formulated the National Policy, Measures and Plans on the Conservation and Sustainable Utilization of Biological Diversity (1998-2002), which were approved by the Cabinet in 1997. These have become the principal framework for biodiversity conservation and management in Thailand. The National Committee on Conservation of Biological Diversity (NCCBD) under NEB was created to formulate plans to implement national policies regarding commitments to the CBD.
- For climate change issues, ***Office of Climate Change Coordination*** under ONEP is the UNFCCC focal point and the secretariat to the National Climate Change Committee (established in 2007). The committee is chaired by the Prime Minister and includes 13 line agencies as committee members.²⁰ It is responsible for the National Climate Change Strategy (2008-2012) and the implementation of the National Climate Change Master Plan²¹.
- ***Office of the Monitoring and Evaluation (OME)***: The Office is under the Office of MONRE Permanent Secretary. Its key roles and responsibilities include (1) support and facilitate the work of the 16 Regional Environmental Offices and the Provincial Natural Resources and Environmental Office in all 76 provinces; (2) coordinate the work between the central and regional agencies; (3) provide analysis and recommendations for regional and local environmental policy and planning; (4) provide technical inputs, administrative support, and information dissemination to MONRE agencies in the sub-national levels; (5) support and coordinate capacity building and training processes for MONRE staff at the sub-national levels.
- ***Regional Environment Offices (REOs)***: MONRE has established 16 REOs across its four regional administrative divisions (which largely reflect Thailand's hydrological regions). REOs support the decentralization process with regard to environmental management. Under the framework of the Five-Year Regional Environmental Management Plan of MONRE, each REO is mandated to play a coordinating role among provincial governments and other relevant government agencies, including the Royal Department of Forestry and the Department of National Parks, Wildlife and Plant Conservation for effective environmental management.

²⁰ As of the Cabinet Resolution 4 February 2011 on the revision of the composition of the National Climate Change Committee.

²¹ The Plan is currently in the revision process and will be under implementation by the end of 2011.

- **Provincial Natural Resource and Environmental Offices (PONREs):** PONREs have the responsibility of implementing three aspects of MONRE’s mandate - natural resources management (forest and coastal resources); water resources management; and environmental quality management - within provincial boundaries. In each province, PONRE is tasked with the mission to conserve, rehabilitate, and promote sustainable use of natural resources and environment through integrated provincial plans.
- **The Royal Forest Department (RFD):** The Royal Forest Department is mandated to oversee government forestlands excluding protected areas. The Royal Forest Department 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.²² A CF Division was created in 1986 under the Office of Reforestation within the RFD, with the aim of developing new participatory forest conservation programmes. RFD has a Community Forest Management Office, which is responsible for (1) implementing community forestry programmes, (2) conducting R&D in community forestry and agro-forestry, and (3) developing linkages with other parties involved in CFM. More detail on RFD’s structure is provided in Table 2, below.

Table 2: Royal Forest Department’s institutional arrangement

National and Sub-national institutions	“Forest management” arrangement and status	Level of community engagement
<p>National Forest Reserve Committee</p> <ul style="list-style-type: none"> • Oversees all National Forest Reserve Area. • Comprises (1) Representative from RFD; (2) Representative from Department of Provincial Administration; (3) Representative from Land Department; and 4) other two members as designated by the Minister. • Has the authority to protect national forest reserve and settle disputes. <p>Regional Forest Management Offices</p> <ul style="list-style-type: none"> • Established by RFD’s Order on 13 November 2008, designating 13 regional bureaux • Develop forest management plan in the responsible area in accordance with policy direction of RFD and provincial strategies • Enforce the legislative framework on forest management activities. These include preventing encroachment of natural forest reserve areas, and promoting community forests, R&D and reforestation. • Monitor and evaluate other line agencies • Collaborate with other line agencies 	<p>Forest Reserve Management Plan</p> <p>Community engagement through Community Forest Management Office (established in 2004, when the RFD was transferred from Ministry of Agriculture to Ministry of Natural Resources and Environment)</p>	<p>8,000 communities nationwide registered under RFD in the areas designated as forest reserves under Forest Reserves Act (1964) and other areas under the Forestry Act (1941)</p>

²² Sutthisrisin, C. & Noochdumrong, A. (1998) *Country Report on Thailand: Forest Policy and Planning*. FAO Regional Office for Asia and the Pacific, Bangkok.

- **Department of National Parks, Wildlife and Plant Conservation (DNP):** The DNP is responsible for flora and fauna conservation and management, particularly in protected forestlands (national parks, wildlife sanctuaries, watersheds and special designated areas). The Watershed Conservation Management Office (WCMO) has over 30 years of experience in watershed rehabilitation through reforestation, development of land use patterns that reduce shifting cultivation, and conflict management. Participatory approaches to integrated watershed management including developing the economic welfare of people in watersheds are now being used as one of the key strategies by this office. As of 2000, the WCMO has worked jointly with over 600 villages in northern Thailand and facilitated inter-village meetings, community study tours, CF networks and case study documentation. More details on DNP's structure are provided in Table 3, below.

Table 3: Department of National Parks, Wildlife and Plant Conservation - Institutional Arrangements

National and Sub-national institutions	“Forest management” arrangement and status	Level of community engagement
<p>Regional Protected Areas Management Bureaux</p> <ul style="list-style-type: none"> • Responsible for managing individual PAs • 16 Regional Bureaux nationwide. • Main divisions are Administration, Protection, and divisions for management of national parks, wildlife sanctuaries and watersheds. Most of DNP central divisions/offices are thus represented at the regional level. • At the <i>individual park</i> level PAs are typically organized into a head quarter (HQ) and a number of sub-stations, depending on the budget and the size of the PA. The officer in charge is the PA Superintendent, seconded by one or more assistant superintendents, who in turn oversee the work of park rangers and various administrative staff. • Each Watershed Class 1 Area has a Head Watershed Unit 	<ul style="list-style-type: none"> • Regional Action Plan for each PA cluster under Regional Protected Areas Management Bureau • Individual PA Management Plan • Upper Watershed Management Plan 	<p>Protected Area Committees (PAC): PACs are composed of representatives from PA staff, Tambon Administration Organisation (TAO), local communities, CBO and local NGOs. Their role is to advise and assist in conflict resolution, PA planning, analysis and monitoring, benefit and responsibility sharing and approval and evaluation of pilot projects proposed by local communities. In February 2005, the DNP's DG issued a policy statement on establishment of Protected Area Committees in all PAs.</p>

- **The Department of Marine and Coastal Resources (DMCR):** 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 to formulate coastal and marine policies and strategies, conduct research and development, and oversee resource use. There are 6 Marine and Coastal Resources Conservation and 14 Mangroves Research and Development Stations across the country. These stations are responsible for developing mangrove management plans, with participation of other line agencies, CSOs, and Local Government Organizations.
- **Department of Water Resources (DWR):** The department is responsible for developing policies, plans, and regulations with on water resources management, including the conservation, rehabilitation of water ecosystem services and river basins. It has adopted

the integrated water resource management (IWRM) approach and has developed Master Plans for all 25 river basins across the country. DWR works with other line agencies in each river basin to establish river basin committee to develop provincial river basin plan, and to support the networks of water users in each river basin. DWR is the secretariat to the National Committee on Water Resources, chaired by the Prime Minister. The Regional Offices of DWR serve as the secretariat of each river basin committee.

- ***Department of Groundwater Resources (DGR):*** The department's main mission is to oversee the development and management of Thailand's groundwater resources so as to ensure national security and sustainable use of water resources. The Bureau of Groundwater conservation and restoration has key mandates in developing Master/Strategic/Operational plans for groundwater quality and quality monitoring network, in order to respond the need of groundwater management in both in long-term and in crisis. R&D is conducted in order to develop the appropriate methodology and technology to cope with groundwater conservation and restoration issues. The department has 6 regional offices across the country.

25. Two other recently-established public organizations under MONRE which have relevant mandates to Payment for Ecosystem Services (PES) and bio-carbon are:

- ***Thailand Greenhouse Gas Management Organisation (TGO):*** Established in 2007 as an implementing agency on greenhouse gas emission reduction in Thailand, TGO carries the mandates on promoting: low carbon activities; promoting investment and marketing on GHG emission reductions; establishing the GHG information centre; reviewing CDM projects for approval; providing capacity development and outreach for CDM stakeholders; promoting low carbon activities. TGO is the Designated National Authority for CDM (DNA-CDM) office in Thailand.
- ***Biodiversity-based Economy Development Office (BEDO):*** BEDO was established in 2007 to implement solutions to major issues facing biodiversity conservation. It was given the mandate of promoting conservation of biodiversity, improving local community knowledge of best practice for biodiversity friendly and enhancing biodiversity based economy development. In its five-year strategic plan (2007-2011),²³ BEDO has considered the adoption of Payment for Ecosystem Services (PES) concept to enable its work on developing sustainable production of biodiversity-based products. The PES application will be included as one of the main strategic priorities of BEDO's next five-year strategic plan (2012-2017).²⁴

Ministry of Agriculture and Agricultural Cooperatives (MOAC):

26. The Ministry is responsible for agricultural policy. The Land Development Department is also the focal point for the United Nations Convention on Combating Desertification (UNCCD). Department of Agriculture, Rice Department and Office of Agricultural Economics are tasked with the responsibilities to reduce reducing GHG emissions from the agricultural sector.

Ministry of Interior (MOI)

27. The Ministry's has responsibilities related to natural resources management include overall responsibility on land management and public works. The Ministry is also responsible for appointing 76 Governors of the Provinces of Thailand. At the provincial level, the new provincial

²³ BEDO Five-Year Strategic Plan (2007-2011)

²⁴ Draft BEDO Five-Year Strategic Plan (2012-2017) and interview with BEDO's executive director – March 2011.

planning decree places stronger emphasis on integration of environment and sustainable development criteria into development planning and budgetary processes at the local level. This is further backed by the Decentralization Act, requiring local governments from the provincial to sub-district levels to take greater responsibility over natural resources and environmental management.

Local Government Organisations (LGOs):

28. At the sub-district level, the Tambon Council and Tambon Administration Organization were created in 1994. Their mandates are broad, including infrastructures, education, public health, social services, natural resources and environment. Their authorities are limited in the extent of Tambon (sub-district), which is comprised of 15-20 villages on average.

Thai Working Group on Community Forest Management:

29. The TWG-CFM was formed in March 2000, initially consisting of representatives from the Watershed Management Division of the Royal Forest Department, Department of Local Administration and World Wildlife Fund for Nature. TWG's role in supporting community forest management lies in strengthening collaboration between the RFD, the Tambon Administration Organization and local people. The TWG-CFM intends to develop and refine methods for community-local government dialogue regarding forest management in the Upper Ping watershed, potentially expanding into neighbouring areas in the future.

1.6 Threats to biodiversity in forests and catchment areas

30. Like in most developing countries, which are trying to balance socio-economic development with environmental conservation, Thailand's forests are still under threat from human activities. Thailand's forest area diminished from 53.33 percent of the total land area in 1961 to 25.13 percent in 1998 (Charupatt, 1998; Lakanavichian, 2001), increasing up to 32.66 percent in 2004 (RFD, 2004). Between 1990 and 2010, Thailand lost an average 28,850 ha (0.15%) of forest per year. In total, between 1990 and 2010, Thailand lost 3.0% of its forest cover or around 577,000 ha. This natural forest loss has been offset by the expansion of plantation forest by about 460,000 hectares.²⁵ Annual deforestation rates were in excess of 3 percent for much of the 1961 to 2004 period (FAO 1998), the most rapid deforestation occurring during the mid- to late 1970s and early 1980s. Jantakad and Gilmour (1999) reported an annual deforestation rate of 3.85 percent between 1976 and 1982, which was among the highest in tropical countries. Throughout Thailand, there are an estimated 7 million ha of degraded State forest land, much of which is inhabited.

31. Key threats to forests in Thailand, including in recent past, are described below:

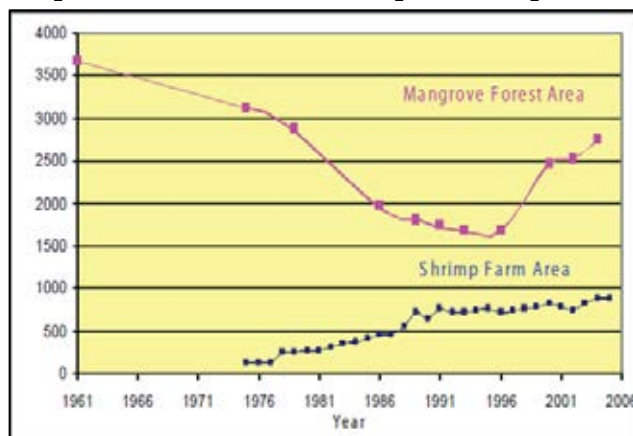
- Past large-scale, planned conversion of forest to other uses: For over 50 years, explicit or implicit policy decisions and government incentives resulted in large-scale conversion of forests into private land. For example, forest land conversions in the North were largely aided by public investment to expand road networks. Deforestation was also due to increased market opportunities for cash crops in Northern Thailand, resulting in a vast clearance of forest cover from 1960s onwards. Much of the highland forests were cleared for large-scale monoculture such as maize (since the early 1970s), cabbage (early 1970s to present), ginger (since the late 1980s), garlic and onions (1980s), and fruit orchards and ornamental flowers (from 1990s to present). The 1990s saw similar trends in the coastal forest loss in the central region, where mangrove forests were converted to shrimp farms for both domestic markets and for export. In the last twenty years, the coastal and island forests of the southern regions of Thailand have also been converted to tourism related infrastructure and into rubber tree plantations, as the price of natural rubber has steadily increased globally. Forest concessions

²⁵ Mongabay, Thailand Forest Information and Data: <http://rainforests.mongabay.com/deforestation/2000/Thailand.htm>

between 1968 and 1987 also led to forest degradation and eventual conversion of such land into new settlements in the north-eastern region.

- For the past three decades the biggest threat to mangrove forests within the Gulf of Thailand (including the Tha Chin River and estuary CBFCM project pilot site) has been from their conversion into shrimp farms. Currently, mangroves within the Gulf of Thailand are restricted to a narrow (10–100m) fringe along the coast.²⁶ Between 1975 and 1995, the area under shrimp farming grew by more than 620 square kilometres while nearly 1,500 square kilometres of mangrove forests were lost (see Figure 6, below).²⁷

Figure 6: Mangrove depletion in relation to Shrimp Farm Expansion in Thailand



- More than half of all mangrove losses have occurred in just three provinces: Samut Sakhon, Chanthaburi, and Phang-Nga. In response, the government began to regulate concessions and replant mangroves in the early 1990s. Specified in the DMCR Mangrove Management Plan 2004-2008, the government intends to plant, enrich, and conserve another 1,152 square kilometres by the end of 2010.²⁸ However, in the coastal area of Samut Sakorn (covered with the CBFCM project pilot site of the Tha Chin Catchment Basin), the extent of mangrove forest has seen a general increase over the past decade, mirroring the national picture, with 96 ha (around 4% of what is required by law) still intact and another 285 ha recently replanted, though government legislation has stipulated that there should be the equivalent of 2,593 ha protected.²⁹ For Thailand as a whole, about 20% of original mangrove areas are now used for shrimp farming. Figure 7, below, shows the percentage of land conversation, by land type, for intensive and extensive shrimp farming.³⁰

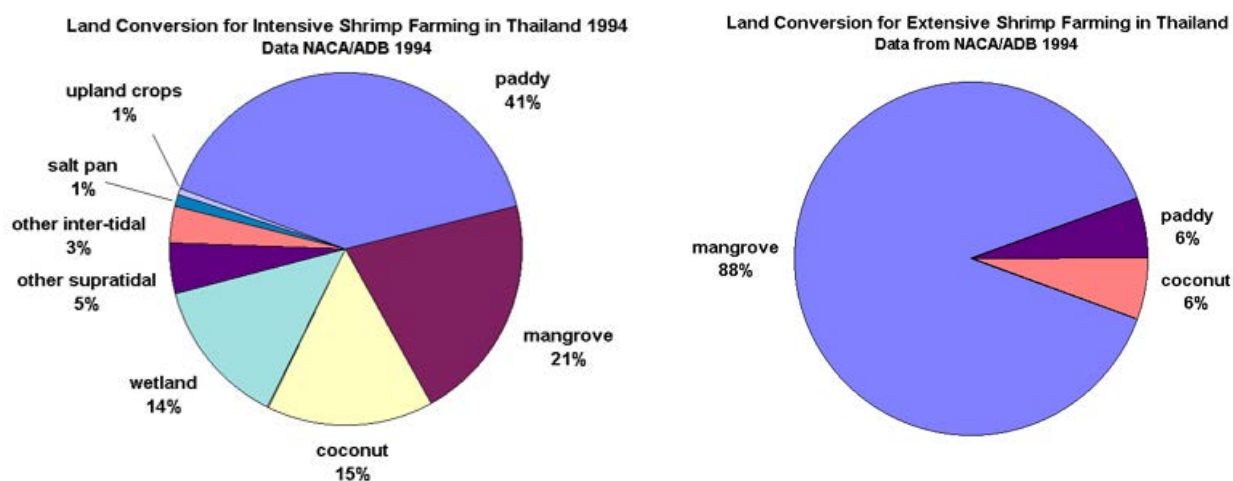
²⁶ Giesen et al, 2006.

²⁷ World Bank, Thailand Environment Monitor, 2006.

²⁸ World Bank, Thailand Environment Monitor, 2006.

²⁹ http://61.19.55.253/omcra/ebookdetail.php?book_id=00257

³⁰ <http://aquafind.com/articles/shmcul.php>

Figure 7: Land Conversion for intensive and extensive shrimp farming in Thailand.³¹

- “Illegal” forest conversion through small scale agricultural expansion, (via permanent and shifting cultivation) has had a negative impact on Thailand’s forests. Traditional shifting cultivation rotations have become shorter due to rapidly increasing hill tribe populations, whose average annual growth rate of 3.8% is greater than the national average, increased competition for land from the lowland Thai communities and the inward migration from neighbouring countries. The combined effect of declining land productivity and increasing population is resulting in further forest encroachment, even on lands not suitable for cropping activities. The problem has been aggravated by the financial crisis faced by Thailand since July 1997, which caused large scale urban unemployment, and many of these unemployed workers have returned to their home villages. This has caused increased need to expand the land area under cultivation, and increased forest fires have resulted from the increased land clearing.
- Unsustainable harvesting of timber, wildlife and non-timber forest products: This problem affects virtually all forests in Thailand. In the Central Region of the country, forests have been degraded by long-term forest concessions for timber, and oil and resin concessions. Intensive hunting of wildlife and unsustainable harvesting of non-timber forest products are also prevalent. Since the logging ban came into effect in January 1989, all legal domestic supplies for the wood processing industry in the country have essentially stopped. Consequently, the incidences of illegal logging have increased, primarily as a result of the high prices obtained for wood and logs.³²
- **Forest fires:** Forest fires occur annually during the dry season (December-May), with peak in February-March. Such fires are caused by “escape” of fire from swidden agriculture or other agricultural lands, accidental fires set off by poachers and recreational visitors to forests, and by storms and lightning. In 1985, the first countrywide aerial survey was conducted and revealed that 3.5 million hectares of forest (including grass and bush lands) were burnt, equivalent to 21% of the total forested areas. The problem was concentrated in the northern region where the largest forested area existed.³³ However aerial surveys conducted since 1986

³¹ Note: Extensive farming uses large ponds with a low stocking density. Little management and investment are required, but the potential production is low. The other extreme is intensive culture, using small ponds with a high stocking density. A high level of management and investment are required, but the potential production is quite large.

³² Tantiwitayapitak, W. 1992. “Illegal logs: No answer in Præ Province.” In *Before the Breathlessness of Tomorrow*. Compiled Report. Bangkok: Sarakadee Publisher. pp. 145-175. (in Thai).

³³ Clark, Barnaby et al., *Forest Fires in Northern Thailand: Ecology, Management, and Socio-Economic Aspects*, Tropical Forest Landscape Restoration in Southeast Asia”, FORRSA_RE2 (ME451), Work Group 3, Thailand 6-27th January 20008.

by the Forest Fire Control Division of the Royal Forest Department show that there has been an overall declining trend in the area burnt by forest fires.³⁴ Table 4, below, details the various causes of fire and relative shares. It can be seen that gathering non-timber forest products (NTFP) and (illegal) hunting in forests were the biggest causes of fires in recent years.

Table 4: Causes of Forest Fires in Thailand (DNP, 2008)

Causes	Average from 1985-1997 (%)	Average from 1998-2002 (%)
1. Gathering NTFP	26	35
2. Agricultural debris burning	18	17
2. Incendiary fire	17	9
4. Carelessness	16	2
5. Hunting	15	22
6. Illegal logging	-	3
7. Cattle raise	-	2
8. Unidentified causes	8	10
Total	100	100

1.7 Long-term solution and barriers to achieving the solution

32. In order to ensure long-term conservation of biodiversity and storage and sequestration of carbon, as well as for livelihoods of local communities, there is an obvious need to involve local communities and provide them with appropriate incentives – including monetization of the most critical services. The long-term solution for this is, therefore, to ensure that sufficient institutional and local capacities are available to harness innovative financing opportunities provided by bio carbon finance and PES to provide incentives to local land users to conserve and sustainably manage the catchments and. A number of barriers currently exist to achieve of this long-term solution. They are summarized into two main barriers:

33. **Barrier 1: Weak policy environment and systemic capacities to support community involvement in the conservation and management of forests and catchments :** Thailand has increasingly recognized and promoted community involvement in forest and watershed management over the past 20 years³⁵. Experience gained from early efforts led to the formulation of watershed management strategies that explicitly engage forest-dependent communities in 1992. Unfortunately, the government assistance through forestry programs and projects has had significant difficulty in reaching local rural people, resulting in inadequate forest restoration. Most projects were eventually terminated or slowed down, because local people did not want to participate³⁶.

34. There are also contradictions between various laws and policies, and in the functioning of different government departments and agencies. For instance, there are 16 agencies responsible for forest management, 6 agencies for mangrove forest, and more than 24 agencies for water

³⁴ Clark, Barnaby et al., 2008.

³⁵ For example, in 1977 the RFD's watershed management program in changed its focus from solely soil and water conservation trials on research stations to addressing local economic needs.

³⁶ For example, with the Four Sectors Program, farmers did not gain proper benefits. On the contrary, they ended up with debts to financial institutions.

provision and distribution.³⁷ This translates into an overlap of mandates and directives for the same region or conservation area. Environmental conservation and natural resource management are carried out in silos, fragmented by ministry and agency missions and mandates.

35. As a result, conservation and management actions carried out by individual agencies are ineffective in stemming the continued degradation of forest catchment ecosystems and the services that they provide, which in turn makes it almost impossible to build sustainable livelihoods in communities. Coordination within and between local and national government institutions responsible for forests, ecosystems and land management, including key line ministries (MONRE, MOAC, MoI, M-Industry) and respective departments and agencies (e.g. RFD, DNP, WUs, REOs, etc.) remains ad hoc and ineffective.
36. In addition, weak law enforcement and system-wide lack of capacity and incentives for CBFCM continue to put vital ecosystem functions at risk. According to the Thailand's Second National Communication report, two key barriers to the expansion and rehabilitation of forest areas to become major carbon sink include the lack of efficient mechanism to manage natural resources and the environment; and constraints in institutionalizing the process and mechanism co-management with communities in a sustainable manner. Natural resource management policies and plans of key agencies such as the RFD, DWR, and DWNP poorly integrate CBFCM and mechanisms that incentivise sustainable resource management by the local communities. This is particularly alarming since approximately half of the country's labour force is engaged in forestry and agriculture, and about 14% of the country's population of 60 million people, expected to increase by 15% by 2025, live below the poverty line. The majority of these poor are highly dependent on forest resources.
37. There is limited capacity of government staff working on natural resources management to effectively interact with land users on an equitable basis for forest and catchment management. Traditional 'top-down' approach and too much focus on 'scientific' methods to natural resource management still dominate management, resulting in ineffective community participation in catchment management.
38. Recent environmental, forest protection and conservation laws and policies (such as Environment Quality Enhancement Act of 1992) do emphasize the cooperation between the government and the private sector. However, there is limited inclusion of clauses supporting community participation through CBFCM, and no mention of economic incentives such as PES and biocarbon financing as instruments for sustainable forest and catchment management and GHG emission reduction and/or sequestration. Since agency management plans follow from policy, neither DWR nor the regional or provincial strategic management plans of the REOs or PEOs include actions in support of CBFCM or the use of PES and biocarbon financing.
39. **Barrier 2: Limited capacities and incentives for the sustainable management of forests and catchments:** Thailand has a longstanding tradition of community-based forest management that safeguards more than 320,000 hectares of forests. Roughly 2.1% of the country's forest is under local community stewardship. There are more than 1,000 communities involved in CBFM, linked through various community forest networks and associations. But, due to poor legal basis for community forestry (with the enactment of the Community Forestry Bill still pending), local communities do not have strong legal tenure over forests and thus have limited direct incentives to sustainably manage them. There is also a lack of tangible economic benefits from conservation of forest catchments, inhibit sustainable management. These problems are compounded by weak capacity in integrated land-use planning and monitoring at both the community level and within the responsible government agencies.

³⁷ Makarabhirom, Pearmsak. (1999)

40. On a macro level, ecosystem services provided by Thailand's forests are important for almost all economic activities including manufacturing and agriculture (such as through provision of electricity from hydro-electric dams). They are also important for maintaining services that support local livelihoods, such as the harvesting of NTFPs. Given the rapid integration of the Thai economy and its rural population with the global economic system, tangible economic benefits are becoming primary incentives for household and community investment in forest catchment management.
41. To date, ecosystem services in Thailand have not been monetized or cost accounted for. Therefore, they are essentially taken for granted and viewed as the responsibility of the government. Unfortunately, for reasons described above, the Government does not have the necessary means to ensure the sustainable provision of environmental services. Existing training, extension, communication and mapping do not provide adequate incentive to local land users to engage the conservation and sustainable management of natural forest ecosystems. Market-based instruments are not widely known or available to senior policy makers, government officers, NGOs or to local communities. Extremely limited experiences exist to promote available tools such as PES and biocarbon financing. Consequently, there is an obvious need to assign economic value to some of the most critical environmental services that Thailand's forests provide, and to compensate or reward those that are directly involved in their restoration or maintenance.

1.8 Stakeholder Analysis

42. Based on the institutional context and the policy entry points mentioned above, the adoption and implementation of PES and bio-carbon mechanism will require engagement of the following stakeholders:

Table 5: Key Stakeholders and their involvement

Stakeholders	Role in Biodiversity/Agro Biodiversity Conservation	Involvement in the Project
1. Households and communities (service providers*)	<ul style="list-style-type: none"> Providing local level knowledge of the changes in quantity and quality of the natural resources base, the threats, the current practices to protect, conserve and revive natural resources. Engaging in activities specified in the contract between service providers and buyers of ecosystem services that have measurable linkage to improvement of ecosystems services 	Enter into contractual agreement which specifies the activities (services) they are required to perform in return for compensation or reward
2. Intermediaries: Agencies contributing to promoting, establishing or strengthening the link between Services Providers and Buyers		
(i) Technical Back stoppers	Academic from both natural and social sciences whose role is to provide technical information to support the design of PES projects	Assessing (i) threats to ecosystems, (ii) measures that can be undertaken, (iii) linkage between measures and output in terms of quantifiable improvement of ecosystems services (iv) economic valuation of the ecosystems services, (v) conducting costs and benefits and trade-offs from the different land use options.
(i) Public sector agencies		
	Public agencies that have management authority over the ecosystems of the PES sites:	<ul style="list-style-type: none"> Support site level and catchment wide planning and actions

	<ol style="list-style-type: none"> 1. Department of National Parks Wildlife and Plant Conservation (for both terrestrial and marine protected areas) 2. Royal Forestry Department 3. Department of Marine and Coastal Resources 4. Agricultural Land Reform Office 	<ul style="list-style-type: none"> • Work with technical experts in designing PES projects; • Ensure transparency of implementing the PES project • Arbitrating in incidences where disputes arise
	<p>Public agencies that have functional responsibilities related to natural resources such as:</p> <ol style="list-style-type: none"> 1. Biodiversity-Economy Based Development Organization (BEDO) 2. Thailand Green House Gas Organization (TGO) 3. Organizations within the MOAC with responsibilities related to reducing GHG emissions from the agricultural sector, namely Department of Land Development, Department of Agriculture, Rice Department, Office of Agricultural Economics 4. National level appointed committees with mandates related to climate change 	<p>Exploring channels and opportunities to link with international markets for biodiversity off-sets and carbon credits;</p> <p>Linking with decision making at the policy level and ensuring relevance between actions taken at the site level and the international framework on GHG emissions and biodiversity conservation</p> <p>Providing and updating information on policy and legal framework that might be relevant to PES activities at the site level.</p>
	Public sector financial institutions (Bank of Agriculture and Agricultural Cooperatives; the Krung Thai Bank).	Exploring and identifying financing mechanisms to support PES activities
(iii) International agencies.	Related by mandate to natural resources and biodiversity resources, e.g. the World Bank, the FAO, WWF, UNDP, USAID, ADB, and UNDP.	<ul style="list-style-type: none"> • Providing technical backstopping in the design, M&E, etc. • Providing linkage between on-the-ground practice with policy makers
(iv) NGOs	Related by mandate to natural resources and biodiversity resources, e.g. IUCN, Wildlife Conservation Society	<ul style="list-style-type: none"> • Providing technical backstopping in the design, M&E, etc. • Providing linkage between on-the-ground practice with policy makers
3. Buyers of ecosystem services		
(i) Private Sector businesses who benefit directly from ecosystems services	Users and direct beneficiaries of ecosystems services	They are potential buyers who would be asked to pay for environmental services, either directly to the service providers or through the designated 'intermediary'
(ii) Private Sector businesses interested in being involved as part of the CSR activities	No direct link to the eco-system services	They are potential buyers who might be interested in financial contributions which will be used as compensation or rewards for service providers, either directly to the or through the designated 'intermediary'
(iii) General public (both international and domestic) who sees the importance of ecosystems service and willing to make private contributions	No direct benefit from ecosystems services either currently or in the future but recognize the importance of the ecosystems	They are potential buyers who might be interested in financial contributions which will be used as compensation or rewards for service providers either directly to the or through the designated 'intermediary'

43. The stakeholders' analysis at the pilot sites will be elaborated in Part 2 of this document as well as in implementation arrangement of this project described in section 4.

1.9 Baseline Analysis

44. Overall, business-as-usual scenario is weak for promoting forestry and catchment management and to institute tangible economic benefits to local communities for effective resource management through innovative financing schemes. This is discussed below.
45. **Slow and Inadequate Policy and institutional reform:** At the highest policy level, the draft 11th NESDP includes provisions for income generation from conservation of natural resources and biodiversity using financial mechanisms such as REDD and PES [Strategy 5: Move towards a green economy and society]. For effective forest and catchment management an integrated approach is required. However, the strengthening of sectoral policies and programmes towards integrated catchment management is taking place very slowly. Given that most policies and law are sectoral in nature, under the baseline, any changes in these would most likely not integrate issues of wider catchment management. Biodiversity conservation, GHG emission reduction and GHG sequestration from forest and catchment land uses would, therefore, would not be promoted holistically and would not build on global best practices.
46. Currently, no single government institution is positioned to provide the leadership role for integrated catchment management nationally. REOs have been identified as agencies most capable of delivering coordinated approach to forestry and catchment management. However, these agencies do not have adequate capacities and experience to undertake such work, and this will continue under the baseline. Consequently, the current situation of fragmented responsibilities and limited coordination and collaboration between different agencies and stakeholders is expected to continue. Existing legal mechanisms will not be effectively enforced due to low resources, and refinement of policies and laws to reflect ground realities will be undertaken only very slowly. The current situation of conservation work being funded primarily through limited government allocations will continue, with low mobilization of funds from the private sector.
47. **Poor Harnessing local knowledge:** Several initiatives have been undertaken to promote community based forest management in Thailand. For example, the Small Grants Programme for Operations to Promote Tropical Forests (SGP-PTF) funded by the European Commission and executed by UNDP served as a monetary mechanism to provide support for community forest and catchment management in Thailand between 2003 and 2007. As a direct result, the capacities of 49 communities have been enhanced, and regional community forest networks of local communities in alignment with the regional administrative divisions of the Regional Environmental Offices (REOs) under the Ministry of Natural Resources and Environment (MONRE) have been formed to further collaboration and knowledge exchange through cross-regional activities. This initiative confirmed that there is a rich resource of indigenous and local knowledge to capitalize on with regard to CBFCM, including watershed management, ecological rehabilitation, buffer-zone management, medicinal plants, mangrove forest management and sustainable use of biodiversity.³⁸ However, due to lack of systemic efforts, local knowledge has not yet been fully harnessed to benefit national and regional policy development and planning processes. Whilst numerous networks of communities have developed spontaneously, the lack of formal channel for them to be involved in the planning, implementation, monitoring and evaluation of programmes will continue.
48. **Inadequate CBFCM capacities:** As a result of the limited integration of CBFCM into national, regional and local policy and planning processes, successful scaling-up of best CBFCM practices in the wider landscape remains a challenge. This is despite the fact that CBFCM presents an

³⁸ <http://www.sgpptf.org/countries.asp?Country=Thailand>

opportunity for generating multiple benefits, including greater connectivity of high quality forest/woodland habitats, enhanced catchment functions and maintenance of ecosystem services (including carbon storage and sequestration, water regulation and soil retention). Historically, technical issues including silviculture, entomology and forest hydrology have been emphasized in national forestry research programmes, but training and extension are limited owing to the small scale of target areas in the field. Some training has been provided to local authorities, community land users and community forest and watershed networks on sustainable land use practices through various government and donor projects. This training has included participatory land-use planning and watershed networking applied to improve community awareness of sustainable watershed management. GTZ has developed a manual for each head of the watershed management units to guide participatory development. However, an extensive programme of training (and particularly “training of trainers”) is still required. Under the baseline, constrained capacities of local governments will continue. Although decentralization processes have resulted in transfer of mandates and responsibilities to local governments, they will continue to face resources constraints.

49. Lack of innovative financing for conservation and GHG emission reduction: Currently, there are two types of economic incentive instruments used for conservation and sustainable resource management in Thailand:

- Tax deduction for donations to two specific forest restoration programs and registered non-profitable organization (including NGOs)
- Supporting funds: Environmental Fund, Plant Varieties Fund, and Traditional Thai Medical Intelligence Fund.

50. Currently there are no PES and biocarbon financing strategies and schemes for CBFCM within Thailand, despite the fact that they can play provide incentives for scaling up of good practices. For instance, the country has a total estimated forest carbon stock of over 2,000 megatons in both vegetation and soils³⁹ of which about 8 million tons are held in community forests⁴⁰. The carbon stock value of the community forests alone would equate to somewhere between US\$ 16 million and US\$ 40 million with the current carbon-trading terms. This suggests a tremendous financing potential and opportunities for sustainable forest and catchment management by local communities under the potential voluntary carbon market and REDD regime. Many MONRE officials do not have sufficient understanding of PES and biocarbon financing, primarily because these tools are not covered in existing training and capacity building programmes.

51. In 2010, Thailand established a REDD+ working group under the National Climate Change committee. DNP is the focal point, and representatives of RFD and ONEP are also included. The working group is in the process of formulating the REDD+ mechanism and selecting pilot sites in the buffer zone of protected areas. It is responsible for cooperation between all stakeholders and capacity building. CBFCM will complement REDD+ preparation efforts by providing information on community rights and participation in sustainable forest management.⁴¹ Thailand is one of the 37 developing tropical countries selected by the Participants Committee of the Forest Carbon Partnership Framework (FCPF) to be assisted in their REDD efforts. The RTG is in the process of officially accepting the FCPF grant to prepare the readiness preparation proposal (R-PP).⁴² The DNP is the focal point of FCPF in Thailand.

³⁹ FAO (2005) *Global Forest Resources Assessment 2005*, FAO, Rome, Italy, <http://fao.org/forestry/site1191/en/>.

⁴⁰ IPCC. (2000). *Land Use, Land-Use Change and Forestry*, Cambridge, UK: Cambridge University Press

⁴¹ Thailand Experience with REDD+. Presentation at the Asia-Pacific regional consultation and capacity-building workshop on reducing emissions from deforestation and forest degradation (REDD+) in developing countries. Royal Forest Department, Department of National Parks, Wildlife and Plants Conservation, and Office of Natural Resources and Environmental Policy and Planning, March 2011. Singapore City, Singapore, 15-18 March 2011.

⁴² Forest Carbon Partnership Facility FY 2010 Annual Report. October 2010

52. Thailand Greenhouse Gas Management Organisation is exploring the potential of establishing a voluntary carbon market (VCM), in parallel with a compliance carbon market (Thai Emissions Trading Scheme). If developed, the VCM would help project developers not eligible under the CDM to sell their carbon credits, and to prepare Thailand in case it must commit to GHG reductions. TGO is also working on the establishment of guidelines for forestry projects for voluntary GHG emission reduction credits in Thailand, including the pilot project on the mangrove areas in Chantaburi Province, in collaboration with the Department of Marine and Coastal Resources (DMCR). However, under the baseline situation, such efforts will continue to be ad-hoc and government mechanism to support wide-scale replication of such opportunities will not be in place.
53. Therefore, under the baseline scenario, high pressure for land and natural resources will continue, leading to deforestation, loss of biodiversity and accelerated emissions of GHGs from land use changes. These impacts will also lead to erosion of cultural diversity; (different impacts on various ethnic groups, i.e., Karen, Hmongs) and reduction in quantity and quality of ecosystem services.

SECTION 2: PROJECT STRATEGY

2.1 Project Rationale

54. This project focuses on promoting integrated CBFCM through an ecosystem service approach. It has been designed to support Thailand's CBFCM by demonstrating the use of economic incentives to local communities to conserve biodiversity and to reduce greenhouse gas emission from land uses. The project will help overcome the barriers identified in the previous section, and build on the past work and efforts. The project will strengthen systemic capacities in sustainable forest catchment management among national and local agencies. The focus will be on building capacities of MONRE, and especially the REOs to, act as the key coordinating and catalyzing agency to promote CBFCM. Community participation will be promoted via catalyzing economic incentives. GEF investment in this project will lead to strengthened policy, a coordinated and strategic investment in biodiversity conservation in forest catchment with long-term national capacity building and build the basis for further development of models and approaches for Thailand as a whole and internationally.
55. A key development issue in Thailand is the increasing rural-urban disparities. The project seeks to mitigate this problem by rewarding and compensating rural communities for the ecosystem services they provide. Direct links with potential buyers of ecosystem services will be promoted such as with water utility and irrigation companies, hydro power plants and carbon traders. The project is expected to deliver significant local benefits, including payments for CBFCM activities and improved ecosystem functioning (resulting in increased production and quality of water and non-timber forest products, and protection against floods and droughts). The project aims to increase the average local livelihood quality by 5% through demonstration activities at pilot sites. Global environmental benefits to be achieved by this project are described in a later section of this document.

2.2 Policy conformity

56. The project has been designed to be in full conformity with government priorities, GEF 4 Strategic Priorities under the biodiversity conservation and climate change focal areas and UNDP's Country Programme Action Plan for Thailand. It is also in conformity with national priorities and makes use of UNDP's comparative advantages.

GEF 4 and UNDP priorities

57. This project will contribute to Strategic Program 4 of GEF 4 Biodiversity focal area “Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity”. This will be done by integrating global biodiversity conservation concerns and incentives for conservation into CBFCM practices and related national policies, as well as mainstreaming the ecosystem service approach into production landscapes. Also, since it seeks to identify and develop innovative financing tools as a means to protect carbon stocks, it is also eligible for funding under the Strategic Program 6 of the Climate Change focal area: Management of LULUCF as a Means to Protect Carbon Stocks and Reduce GHG Emissions.
58. The goal, objective, and outcomes will support the goals of the United Nations Partnership Framework with the Kingdom of Thailand 2007-2011 (UNPAF) by promoting capacity building at local levels for environmental management, sustainable resource use and cleaner energy. Specifically, the project will contribute to the UNPAF outputs “Access to quality social services and protection,” “Decentralization and provincial/local governance,” and “Environment and natural resources management”. The project is in line with the UNDP’s Country Programme Action Plan (2007-2011) for Thailand under the Energy and Environment Outcomes, which include:
- Efficient community-based natural resources and environmental management in selected ecosystems with effective engagement of people’s organizations in policy- and decision-making processes affecting the environment and the use of local natural resources;
 - Increased capacity of national agencies to set policy priorities and remove barriers to pursuing sustainable management of biodiversity, renewable energy, and water resources in response to national priorities and in compliance with international treaties;
 - Promoting community-based knowledge management by supporting the formation of community networks and promoting evidenced-based policymaking at all levels.
59. The project is also in line with UNDP Country Programme’s new partnership cycle (2012 – 2017), which will focus on effective response to climate change challenges, focusing on providing enabling factors for putting policy into practice and capacity building for key agencies at the national and sub-national levels towards the low emission, climate resilient society, and environmental security.

2.3 Country ownership and drivers

60. Eligibility: Thailand ratified the UNFCCC in 1994, the Kyoto Protocol in 2002, and the CBD in 2003 (becoming a full member on January 29, 2004). It is, therefore, is eligible for GEF grants for both biodiversity and climate change mitigation focal areas.
61. Country Drivenness: This project is country driven as it is in line with national policies and priorities (described below). It was identified as a high priority project nationally by MONRE and has been endorsed by the GEF Operational Focal Point in his letter to UNDP/GEF in 2007. The formulation of the project through extensive involvement of multi-sectoral stakeholders and others has also ensured that it has strong national ownership. The co-funding committed by the Royal Thai Government is an added testament to the importance attached to this project.
62. The project is consistent with Thailand’s GEF strategy of providing support to the implementation of the 10th National Economic and Social Development Plan (NESDP2007-2011). The plan focuses on holistic development within the framework of sustainable development and uses the “Sufficiency Economy Philosophy” as a guideline for balanced development stressing stability, transparency, accountability, equal development distribution, sustainable natural resources and environmental management and enhancement of national competitiveness. The plan also puts

strong emphasis on development of environmental and social capital, and mainstreaming green accounting into the national budgeting process

63. The project is also in line with the direction of the upcoming NESDP 2012-2017, which aims to ‘create socio-economic security through strengthening production of goods and services based on knowledge, creativity and environmental friendliness, improving social protection for better coverage, and ensuring food and energy security.’ The Plan’s Development Strategy 6, in particular, gives emphasis to **managing natural resources and environment towards sustainability**. It is focused on conserving and restoring natural resources, harnessing the production and consumption patterns towards the environmentally friendly society, and gearing up for the climate change adaptation. The project will support three areas within the development guidelines of this strategy, namely:

- **Conserve, restore and secure natural resource and environment bases** by (1) safeguarding and restoring the natural resource bases and biodiversity, (2) developing databases and geographical information system (GIS) and knowledge management (3) reforming management system of land ownership and utilization to ensure efficiency, fairness, and security for poor farmers; (4) promoting the efficient water management through close collaboration between local administration organizations and communities; and (5) conserving, utilizing and sharing the benefit of biodiversity.

- **Enhance adaptive capacity to achieve climate-resilient society** by (1) advancing knowledge and developing databases of climate change impacts; (2) initiating new management tools to cope with climate change; (3) preparing for the response to natural disasters at all levels of the society; and (4) leveraging the country’s role in the global forums.

- **Enhance good governance in the natural resource management** by (1) empowering communities and advocating their rights to access natural resources; (2) facilitating and encouraging public participation, and establishing joint management mechanisms comprising all development partners; (3) amending relevant legislations and enforcing laws and regulations to reduce conflicts and access disparity among communities; and (4) ensuring that government investments are in line with principles of natural resource conservation and restoration.⁴³

64. The project is anchored on Target 9 of MDG 7, which aims to integrate sustainable development into country policies and programmes and to reverse the loss of environmental resources. The relationship between natural resource and environmental management and greenhouse gases can be synthesized from the National Strategy on Management of Climate Change and the four year operational plan of the Ministry of Natural Resources and Environment. The key targets that relate to forestry and catchment management include the following:⁴⁴

- Reducing emissions from agriculture and increasing sinks from forest areas;
- Creating new forest and reforested areas, covering 3.18 million hectares;
- Rehabilitating watershed forest areas, covering 160,000 hectares;
- Planting trees in commercial forest areas, covering 448,00 hectares;
- Supporting 120 research and development projects in GHG management at the national Level;
- Generating CDM projects with a value of at least 2,000 million Baht (US\$320 million)

⁴³ Executive Summary of the Draft 11th NESDP, Office of the National Economic and Social Development Board, January 2011.

⁴⁴ Office of Natural Resource and Environmental Policy and Planning, *National Strategy on Management of Climate Change, 2008-2012*, Ministry of Natural Resources and Environment, January, 2008; Ministry of Natural Resources and Environment, *4-year Operation plan, 2008-2011*

to reduce GHG emissions up to 2 million tons of CO2 equivalent

65. The project is in full conformity with Thailand's National Policy, Strategies and Action Plan on the Conservation and Sustainable Use of Biodiversity (NBSAP 2008-2012), especially with Strategy 2: Encouraging the Sustainable Use of Biodiversity, including the action plan on sustainable use of biodiversity, and on access and benefit sharing.⁴⁵
66. The project is also in line with the priorities identified under the Thailand's Second National Communication to the UNFCCC, which noted that "the forestry sector demonstrates the advantages of the win-win policy in Thailand. Since 2000, substantial efforts to expand forest areas have been carried out in the form of conserved forests, reforestation and rehabilitation of deforested areas, and expansion of community forest and commercial forest. Reforested areas in Thailand have increased by more than 400,000 rai (64,000 hectares). This is in addition to the expansion of conserved forest areas. As a result, the forestry sector became a net sink of CO2 in 2000. The next four-year implementation plan of the Ministry of Natural Resources and Environment will continue to effectively protect conserved forests. Also given priorities are forest rehabilitation and conservation and rehabilitation of upper watersheds and degraded forest land and maintenance of commercial forests. More than 3.1 million rai or about 500,000 hectares of mangrove forests along the coast of Thailand will be well protected."⁴⁶

2.4 Design principles and strategic considerations

67. In addition to conformity with national priorities, GEF strategy, UN's work globally and in Thailand and national ownership, a number of other strategic considerations have played a role in this project's formulation. These include balance between national policy and local actions, gender equity, coordination with relevant initiatives and UNDP's comparative advantage (discussed below). The additional considerations for cost effectiveness, sustainability and replicability are discussed later in the document.
68. Balance between national policy and capacities impacts and site level demonstration work
The project has been designed to include two explicit and related components. The first component will strengthen national enabling environment (i.e. policies, legal instruments and institutional and individual capacities) to promote effective CBFM through the incorporation of innovative financial mechanisms. REO will be the primary partner in this project, given their mandate to coordinate different sectors working on conservation, natural resources management and local development. 4 out of 16 REOs will be the primary partners for the project implementation at site levels. The on-the-ground work is designed both to implement existing policies but also to develop experiences and approaches to support strengthening of the policy environment and national capacities.
69. **Gender considerations:** In Asia, as in other developing regions, women are often the primary users and managers of land, forest, water and other natural resources. In Thailand, women have played a leading role in community-based environmental advocacy and natural resource management. Gender sensitivity and equity will therefore play an important role in the success of this project. Indigenous women, as is the case with the ethnic minorities of the northern part of Thailand, have a special relationship to natural resources. Their cultures and practices promote a balanced, respectful use and preservation of natural resources so that future generations can meet

⁴⁵ Thailand's National Policy, Strategies and Action Plan on the Conservation and Sustainable Use of Biodiversity (NBSAP 2008-2012). www.cbd.int.

⁴⁶ Thailand Second National Communication Report to the UNFCCC 2011. P.16. *Forthcoming*

their needs. Yet most development schemes today ignore the needs and practices of indigenous peoples.

70. With that said, unfortunately the effect and role of gender in natural resource management is different. Often the bargaining power of women is not as strong as men which put them in a more vulnerable situation when natural resources that the community is dependent on are no longer accessible. In addition, there is sometimes an apparent contradiction between policies designed to protect the environment and those intended to improve local living conditions, and these contradictions also affect men and women differently due to their different roles in the collection and use of natural resource.⁴⁷ Gender roles within indigenous communities are changing continually as a result of state policies. It is necessary that any project strategy, activity and policy formulation take gender into account. There is a need to acknowledge the specific needs, perspectives, and roles of women in natural resource management in Thailand, thus the CBFCM project will strive to promote the participation of women in the project as well as assist in supporting women in leadership and decision-making capacities. Their active participation in decision-making and the equitable sharing of benefits between men and women is crucial for ensuring the long term sustainability of natural resource management.⁴⁸

71. **Strong coordination and partnerships with relevant initiatives:** The project will benefit from the experience of previous related initiatives by national and international counterparts. It will also strive for strong coordination and cooperation with ongoing and future initiatives in the country. These include:

- GEF-UNDP global project: “Pre-investment Study on Conservation Forest Area Protection, Management and Development”;
- “Joint Management of Protected Areas” project by DANIDA, covering 24 protected areas across Thailand;
- “Greater Mekong Sub-region Biodiversity Conservation Corridor Initiative” by ADB to promote sub-regional biodiversity conservation corridors;
- GEF-UNDP Full-sized Project on Sustainable Management of Biodiversity in Thailand’s Production Landscape with the Biodiversity-based Economic Development Office of MONRE;
- GEF-UNDP Full-sized Project: “Catalyzing sustainability of the PA system” by the DNP;
- Large and small grant projects of the Mangrove for the Future (MFF) under the Department of Marine and Coastal Resources (preparatory phase);
- Thailand Country Programme of UNDP-UNEP Poverty and Environment Initiative (PEI); and
- World Bank Forest Carbon Partnership Facility (FCPF).

72. The project will also take full stock of the results of the GEF Carbon Benefits Project: Modelling, Measurement and Monitoring by the UNEP and World Bank, and the GEF Capacity Development for Climate Change Mitigation through SFM in non-Annex I Countries Project by the World Bank, so as to avoid any unnecessary duplication of work or inconsistency in approach. The coordination mechanism will be enhanced mainly through the project’s Output 1.2, which will strengthen the inter-agencies coordination in promoting PES and bio-carbon as part of the National Environment Board. In addition, the project board will include representatives of key line agencies.

⁴⁷ Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-makers and Other Stakeholders*. Hull: Canadian International Development Agency. p. 193.

⁴⁸ Longa, Elizabeth. “Gender and the Environment”. In *SPARK Strengthening Communities For Natural Resources Utilisation and Management: Proceedings Of A Regional Workshop*. SPARK.

73. **Building on UNDP's comparative advantages:** UNDP has been assisting the Kingdom of Thailand in implementing a number of global environmental conventions including the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD). This project will assist the Thai Government in meeting its obligations under these conventions and developing synergies between different conventions. UNDP Thailand's Environment Portfolio supports the Royal Thai Government in using PES and other environmental financing approaches as incentives for biodiversity conservation and GHG emission reduction.
74. UNDP has also been a key player in introducing the PES concept in Thailand via three projects under GEF-4 portfolio:
- Sustainable Financing of Protected Area: 'Catalyzing sustainability of Thailand's PA system' (under implementation, starting in January 2011);
 - Sustainable Production and Marketing: 'Sustainable Management of Biodiversity in Thailand's Production Landscape' (preparation phase, implementation expected by October 2011);
 - And this project on Sustainable Forest and Catchment Management through PES mechanism: 'Community-based Forest and Catchment Management' (CBFCM).
75. In addition, UNDP is working with the Ministry of Interior under the Joint UNDP-UNEP 'Poverty Environment Initiative (PEI),' supporting the process of environmental valuation as a tool for mainstreaming of environmental conservation and sustainable resource use into development planning at all levels. Furthermore, UNDP is experienced in administering Small Grants Programmes under GEF, EU- Tropical Forest Small Grants, and Mangroves for the Future (MFF), which are focusing on strengthening community networks in natural resources and environmental management in key ecosystems. These networks provide strong basis for this project to build on as well as lessons to learn from. Experiences have indicated that unless there are income generation potentials and linkages to the policies (be it at the national or the local level) the community efforts will remain piecemeal.

2.5 Project objective, outcomes, outputs and activities

76. This project's objective is to create an enabling policy and institutional environment for scaling-up integrated CBFCM practices through innovative financing mechanisms. The project will achieve this objective through strengthening systemic capacities in sustainable forest and catchment management at the local, regional and national levels (Outcome 1), and the expansion of CBFCM coverage throughout the country through pilot testing of defined PES and biocarbon financing mechanisms and up-scaling of best practices (Outcome 2). These are described further below.
77. **Outcome 1:** Strengthened policy environment and systemic capacities to promote sustainable community-based forest and catchment management through PES and biocarbon financing mechanisms
78. **Output 1.1** Harmonized policies, plans and legal instruments to support CBFCM and PES and biocarbon schemes
- The REO's work is largely guided by the *Enhancement and Conservation of National Environmental Quality Act* (1992), otherwise known as the *Environmental Quality Act*. The Environmental Quality Act sets the broad standards for the maintenance of environmental quality and seeks to improve environmental quality. The Environment Quality Act is thus the law with the most potential to incorporate new amendments which support CBFCM using PES and biocarbon financing mechanisms. This law also provides the basis for ministerial and department policy along with guiding the development of 5-year strategic management plans by the DWR, REOs and PEOs. Furthermore, environmental related policy and laws (such as for forests

management) are not only the responsibility of MONRE, but other key ministries have some link to the management and conservation of forest resources, including the Ministry of Interior, the Ministry of Industry, the Ministry of Commerce, the Ministry of Agriculture and Cooperatives. The challenges in policy implementation and management are significant and multitudinous. As a primary aim, this project will facilitate a process to harmonized policies, plans and legal instruments (including a PES Code of Conduct) to support CBFCM and PES and biocarbon schemes through carrying out the following activities:

- a. Developing legal and policy improvements in support of economic instruments for carbon emission reduction and biodiversity conservation, including within the Environmental Quality Act (1992), the DWR's 5-year Integrated River Basin Management Plan (2012 – 2016), 25 Annual Integrated River Basin Management Plans, the Five Year Environmental Quality Plan (ONEP – NEB) and the Regional Environmental Management Plans. Analysis to identify gaps and issues in these documents, and consequent recommendations will be conducted by a team of legal, policy and economics experts with close involvement of key concerned agencies.
- b. Using the above mentioned information, a multi-sectoral / multi-agency consultative process will be facilitated to develop guidelines for the integration and harmonization of PES and biocarbon financing schemes and mechanisms for CBFCM into existing policy as well as providing a framework and guidelines for new policy development that advocates CBFCM through PES and biocarbon financing. The ultimate aim of this process is to emplace new or amended national policy support and strengthen CBFCM through PES and biocarbon financing mechanisms as well as see the inclusion of CBFCM and PES/biocarbon financing within the 5-year plans of the DWR, pilot area REOs and PEOs.

79. Output 1.2 Functional multi-sectoral mechanism for CBFCM (with participation of all Regional CBFCM Networks, REOs, ONEP and RFD) that facilitates effective policy feedback, knowledge sharing, self-capacity development and access to PES and biocarbon

- To ensure that all key stakeholders are appropriately engaged in a conducive and open dialogue, the project will build a mechanism to effectively facilitate policy feedback, knowledge sharing, self-capacity development and access to PES and biocarbon information and best practice. For this, initially, site level and national level fora will be organized, involving key stakeholders. From these, a committee and interagency working group will be created and supported by the PMU to cooperatively work together to develop an appropriate platform structure and mechanisms for stakeholder participation. The aim is to facilitate at least 2 consultations each year during the project period. Sustainability of this mechanism will be ensured through its inclusion under National Environmental Board as an ad-hoc Working Group, with a focus on the use of economic instruments to act as forest and catchment management incentives.

80. Output 1.3 National capacities enhanced to promote incentive based CBFCM

81. Three key issues of national capacities will be directly addressed by this project.

- The project will support the establishment of a national CBFCM coordinating agency/department within MONRE, which will be responsible for the management of a CBFCM database and collection and dissemination of information, best practice, etc. on the use of PES and biocarbon financing for sustainable forest and catchment management. The database will provide a central collection point for PES/biocarbon information, case studies and research studies. The regional offices will also be encouraged to develop similar databases for their regions.
- The project will undertake capacity building of REOs, (particularly the 4 REOs to be directly involved in this project implementation) as lead "training" agencies. A capacity self assessment by the REOs is presented in Annex A. Whilst all four REOs have strong capacity in policy formulation and analysis, IT and statistical analysis and "brown issue" monitoring and evaluation (i.e. water, air and soil environmental quality monitoring and analysis), they

have less experience on dealing with primarily on forestry and catchment management areas. Skills in stakeholder analysis, engagement, communication and management, conflict resolution, mediation and contract negotiation are also considered to be weak. None of the four REOs have experience in using any specific project management tools or frameworks except for the log-frame approach.

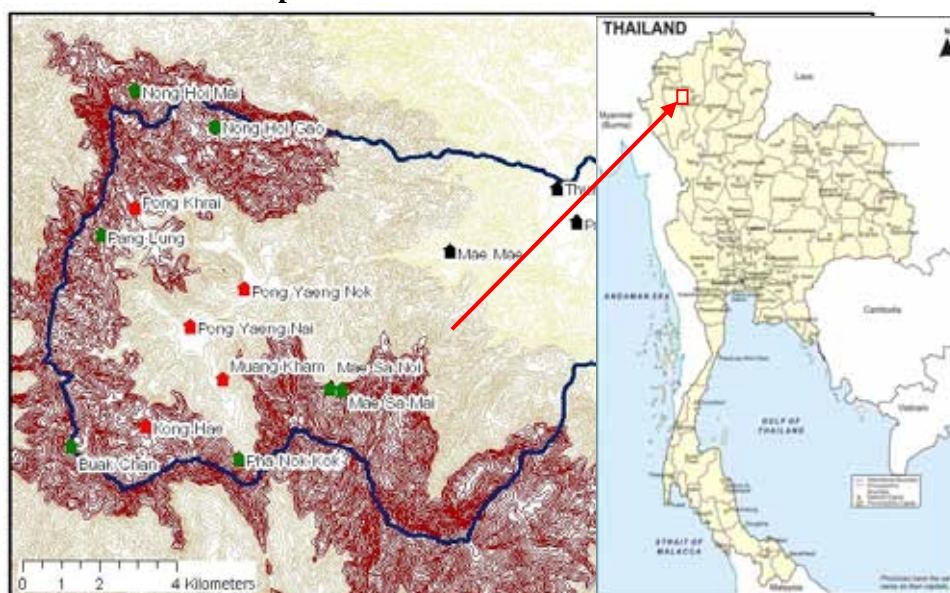
- Government agencies lack capacity in monitoring of GHG emission, emission reduction and capture through land use and land use change. The project will help to build capacities to address this gap. One potential approach that can be used includes the Reducing Emission from All Land Uses (REALU) methodology developed by ICRAF. This methodology uses a framework for GHG emission reduction from agriculture, forestry and land use. Appropriate partnerships will be developed to introduce the most cost-effective methodology from global best practices.

82. **Outcome 2: Expanded CBFM coverage through pilot testing and up-scaling of best practice using PES and biocarbon financing schemes and mechanisms**

83. The project will support work at four pilot catchment sites. These are described below.

84. **Pilot Site 1: Mae Sa Watershed: Northern Thailand / Chiang Mai Province:** The Mae Sa watershed area is approximately 140 km² in size, and its elevation ranges from 400 to 1200 m above sea level. It lies 40 km northwest of Chiang Mai, which is the main urban centre in northern Thailand. The lower part of the watershed has 12 villages, is largely flat, and is inhabited by people of northern Thai ethnic origin. Though once prominent, agriculture is no longer the main economic activity, having been replaced by tourism, trading and small and medium business enterprises. The central part of the watershed is a valley that has an elevation between 700 and 1,000 meters and mostly inhabited by people of northern Thai ethnic origin. Cultivation of flowers and vegetables in greenhouses is the main economic activity here. The upper part of the watershed is inhabited by people mostly of Hmong ethnic origin and has an elevation above 1,000 meters. Agriculture, mainly of fruit orchards and vegetable fields, is the main source of income here.

1. **Figure 7: Mae Sa Watershed Locater Map**



85. Mae Sa catchment's upper forests, adjacent to local communities, are under increasing threats of conversion, primarily for intensive agriculture (high value vegetable crops) and tourism development. With expansion of vegetable cultivation, there is a parallel increase in demand for irrigation water and more intensive use of chemicals. Loss of forests in the catchment has

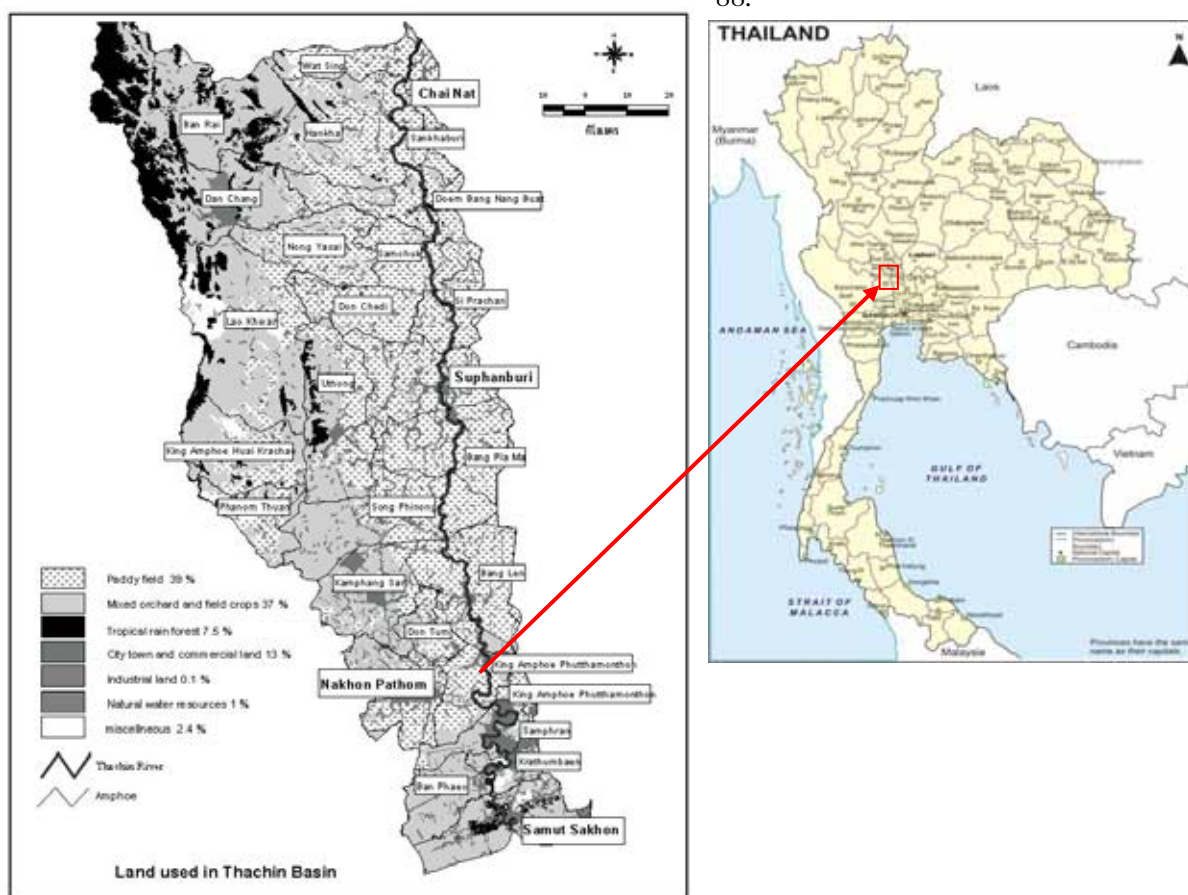
implications on biodiversity conservation and GHG sequestration. There are also direct impacts on communities living downstream, e.g. increased siltation in river and increased risks of forest fires in remaining degraded forests (which can escape to settlements and agriculture land and affect tourism).

86. Pilot Site 2: Tha Chin Watershed – Central Thailand - Nakorn Pathom and Samut Sakorn

87. The Tha Chin River is a tributary of the Chao Phraya River. The River is 325 km in length and flows through four provinces (Chainat, Suphanburi, Nakorn Prathom and Samut Sakorn). The two upstream provinces of Chainat and Suphanburi have some of the most fertile agricultural lands in the country, while the lower two provinces have some highly industrialized zones. Seventy-six percent of the Tha Chin River Basin is used for agriculture. The primary uses of the river include water supply, aquaculture, transportation, recreation, and as a sink for wastewater discharges.

Figure 8: Tha Chin Catchment Basin Locator Map

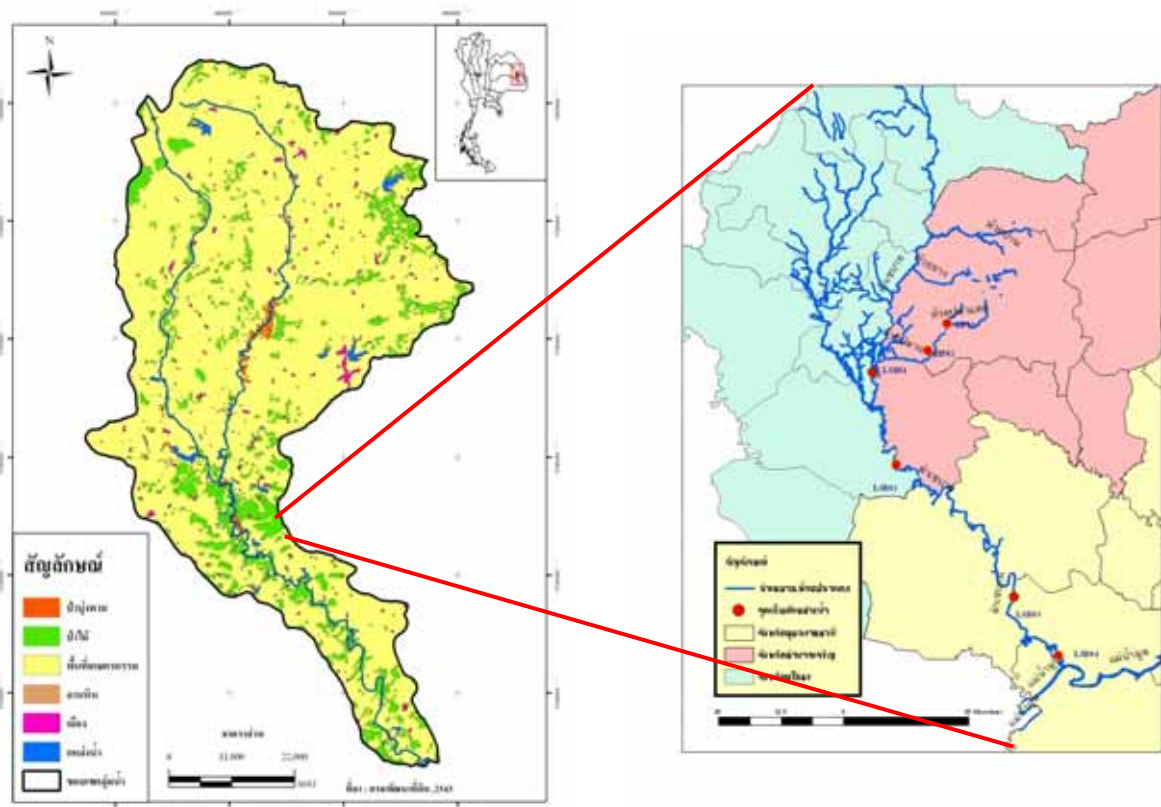
88.



87. The pilot site will focus on the lower Tha Chin catchment basin, which is wetland area of national significance. The entire river basin is a major food production area for the country. Though there are land use zoning and planning laws to protect agricultural zones and green areas, there is a tremendous pressure within the basin to convert the remaining green space (including natural areas of wetland, mangrove forests, open space, agricultural land, etc.) into agriculture (such as water spinach farming), construction of industrial estates, housing estates, condominiums, and tourism facilities – including ‘floating markets’ for the tourist market. There has been a steady deterioration of river water quality resulting from uncontrolled waste water discharge from the industrial, agriculture and commercial sectors.

88. **Pilot Site 3: Lam Sebai Watershed – North-eastern Thailand – Ubol Ratchathani;** Lam Sebai is a sub-watershed of Moon Watershed, and is located 75 km northwest of the provincial capital of Ubol Ratchathani. It comprises an area of 3,921 km², covering 3 provinces and 14 districts. The Lam Sebai watershed area has three different sections. The upper basin is part of the Phu Phan Range with an average altitude of around 150 meter above mean sea level (MSL). The middle basin runs from Pa Tew District, Yasotorn Province to Muang Sam Sib District, Ubol Ratchatani Province, with a mean altitude of 120-130 MSL. This section of the Lam Sebai River has swamps and marshes and is a seasonally-flooded forest ecosystem. The lower Lam Sebai catchment basin starts at Kuang Nai District and runs to Pak Se where it merges with the Moon River. The basin also has agricultural land, primarily rice paddy, grassland, and dry deciduous forest.
89. The 12 forest village communities, or *mubans*, of Dong Yai are each comprised of 100-120 households. The sub district headquarters is located at Srang To Noi and encompasses a total of 1,300 households, or 7,500 people. Dong Yai's 12 villages are substantially poorer than the average in Thailand, earning about 17,800 baht (\$740) per household annually. The major local occupation is lowland paddy farming, supplemented with vegetable cultivation and livestock rearing. Due to unfavourable agro-climatic factors, including scant and unpredictable rainfall, poor, sandy loam soils, and high erosion rates (in part due to deforestation over the past two decades), the Dong Yai area, like the Northeast region as a whole, has suffered from droughts and relatively low crop productivity. While 96 percent of the farmers in Dong Yai are landowners with holdings of an average 20 rai (3 hectares), rain fed paddy yields are low, producing only one-third to one-half of the national average.

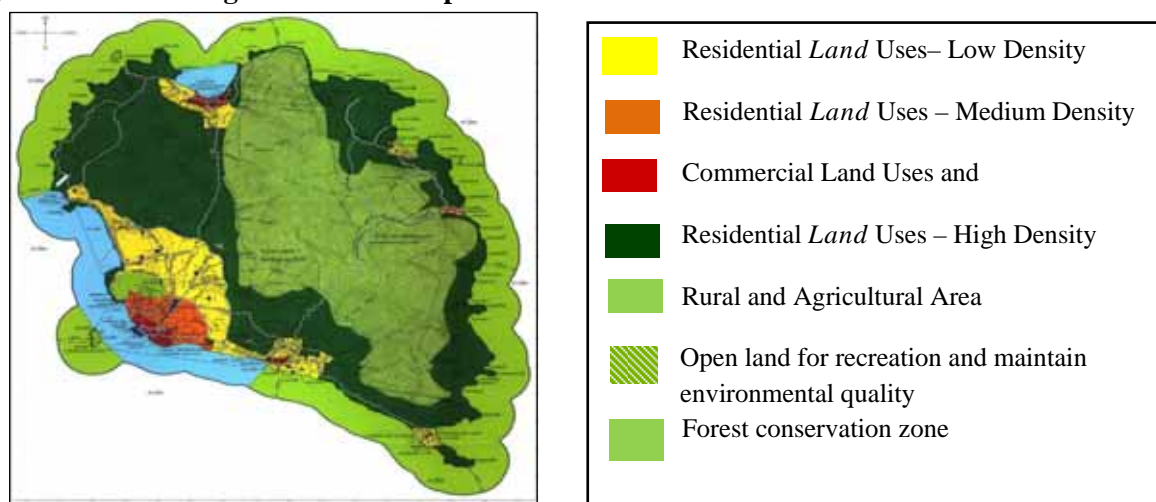
Figure 9: Lam Sebai Catchment Basin Locator Map, Ubol Ratchathani



90. The imminent threats to ecosystems in the area are forest encroachment for cash cropping, including rubber (primarily), cassava and palm oil. Thus, the primary challenge here is to convince people not to encroach into the remaining forests, much of which is, *de facto*, traditionally own/managed as a communal resource. There is also the continuing problem of high pesticide use which has a big impact on overall water quality. A possible solution has been to try and demarcate conservation and resource utilization zones and to gain cooperation and collaboration with a majority of community members.
91. Unlike other project pilot sites, some local communities within the Lam Sebai sub-district (primarily the village of Ban Bang Or) have been engaged in activities that already contribute to the provisioning of ecosystems services through their own initiative. For the past ten years, members of the local communities have allocated and managed communal land as community forests. In the past, this land was highly degraded from use of trees for charcoal production and was rehabilitated through community management. Recently, however, there has been an increasing pressures on these community forests and rice paddy land due to the steadily rising prices of natural rubber. Some community members also have indicated that intention to take back the land which forefathers have donated for communal use so that they can use the land for rubber production. The issue here is to ensure that the *collective* benefit from TFPs, NTFPs and sustainable water supply that is derived from the protection of the community forests is sufficient to off-set the potential to reap private gains from rubber production. While there can be no dispute that collective efforts of the Ban Bang Or community has been the main reason why the 1,870 rai community forest has remained intact, the argument that such efforts contribute to sustainable flow of goods and services for the local communities can be strengthened if the benefits can be quantified and monetized.
92. **Pilot Site 4: Koh Phangan – Southern Thailand – Suratthani Province** : Koh Phangan is an island district belonging to Suratthani Province, situated within the Gulf of Thailand and covering an area of 168 km². The island’s physical topography consists of forested mountainous terrain in the middle of the island, which is the source of water for the entire island. Most of the area is designated as National Forest Reserve area. Another two thirds of the area around the island is flat lowland with thirteen percent of the total area on this island privately owned. The economy is primarily based on tourism, followed by fishing and agriculture (primarily coconut growing). Thirteen of the island’s villages are based on fishing, and there is one agriculture cooperative. Every village has a savings bank, with funds coming from village fund projects derived from the Community Development Department.

Figure 10: Koh Phangan locator map



Figure 11: Koh Phangan Land-use Map

93. Koh Phangan has a diversity of ecosystems from forest to estuaries and coral reefs. All of the island's ecosystems are facing mounting pressures from rapidly growing tourism and related land development activities, including the growing volume of solid waste and uncontrolled discharges of wastewater into the sea. Increasing tourism activities on and under the sea, coupled with the rising density of development and people along the beaches are directly linked to declining seawater quality that is affecting marine ecosystems.
94. This project will deliver the following outputs:
95. **Output 2.1 Capacities of local authorities, landholders and the private sector enhanced to ensure market-based payments and harness innovative financing for improved livelihoods**
96. At the four pilot sites, key stakeholders include REOs, the local government, forest and protected areas authorities as well government agencies on agriculture, industries and coastal and marine resources management. The project will ensure that they are actively involved in effective catchment management and PES operationalization. A training curriculum on PES/biocarbon financing will be developed for the needs of local authorities and landholders. Attention will be paid to building capacity in designing payment schemes and agreements between ES 'buyers' and 'sellers', in monitoring and evaluation of payments, and establishing links with household and community livelihoods. Monitoring and evaluation needs to be very simple, using tools and indicators the community is familiar with. REOs are expected to play an important role in delivering this output, so specific capabilities will be built so that they can take on the role of capacity builders and coordinators.
97. **Output 2.2 Catchment level ecosystem services valuation (incl. biocarbon) and assessment of benefits, trade-offs and opportunity costs of land-use options**
98. Preliminary assessments during the project design phase have identified a number of potential PES options for the four sites. These are outlined in the Table below. The project will build on this assessment during the implementation phase to further quantify the services. Analyses of the trade-offs between benefits and costs of CBFCM will be conducted at all the four project sites.

Table 6: Potential PES options at pilot Site

<ul style="list-style-type: none"> ▪ Pilot Site 1: Mae Sa Watershed: Northern Thailand / Chiang Mai Province
<p>Forest Fires prevention – using Cost of illness (COI) and Cost of Treatment. Incidences of forest fire which can have direct impacts on both property and health of residents in the affected area. Health impacts may incur direct costs in terms of medical expenses as well as financial and resource investments of vulnerable groups to prevent and thus avoid any perceived risks. To demonstrate the benefits of avoiding forest fires, valuation should be done either using Cost of Illness or Cost of Treatment method. This will require joint work by economists with experts from the fields of science and medicine. Apart from possible health impacts, forest fires in the Mae Sa watershed areas may also affect Chiang Mai’s tourism sector. The project will, therefore, undertake some ex-post studies to analyse revenue loss in the tourism sector that can be related to the occurrences of forest fires. This can also lead to quantification of the economic benefits from forest fire prevention, using tools such as Travel Cost Method that can also be expanded to include some ‘contingent behaviour’ questions to analyse how behaviour, and visitation rates, might change as a result of deterioration of environmental quality caused by forest fire incidences.</p> <p>Soil erosion/ sedimentation using Change in Productivity, Replacement Cost and Cost of Treatment. Soil erosion and problems of sedimentation were reported to be a major problem within the Mae Sa river basin. Soil erosion incurs both on-site and off-site costs. Convincing land users to change land use practices on grounds of on-site benefit could be problematic even if land-users are convinced of the benefits in terms of less cash inputs to maintain land productivity. The deterrents to behaviour change are a combination of the lag time before any tangible results can be observed, capital and labour constraints. However, given the off-site benefits in terms of reduced costs of dredging, improved water quality, both with a reduction of sediment loads and chemical run-offs, there is strong rationale for those who are affected by the off-site impacts and the downstream water users to compensate the land-users upstream for any difference in income and for any costs involved from changing land use practices.</p> <p>During the pilot project phase, <i>Change in Productivity</i> could be used to estimate the economic value of on-site soil erosion as well as changes in productivity of any production activities that utilizes water as production input. Where deterioration of water quality necessitates either costs to treat water or the costs to obtain water from other sources, estimates of these costs should be undertaken by using either <i>Replacement Cost</i> or <i>Cost of Treatment</i>, or both types of valuation instruments.</p> <ul style="list-style-type: none"> ▪ Watershed services. Existing baseline information of the stock and flow of the river, humidity and precipitation patterns will be compiled to assess gaps in data required to develop baseline / impact indicators for monitoring purposes. In regards to the social and economic dimensions, studies will be undertaken to identify the users (who they are, the quantity and quality they demand over time, the cost of procurement and user charges), the alternative sources of water supply and the costs of procuring water from those sources compared to current costs. ▪ Carbon sequestration functions and potential to generate revenues from carbon credit. The project will assess comprehensive options for reducing emissions from landuse changes – such as forest losses as well as changes in agricultural practices and rehabilitation of degraded lands. On the economic side, determining the compensation/reward for the service providers will require systematic analysis of the opportunity costs of labour. The costs for afforestation and reforestation will also have to be calculated including the main items such as costs of saplings, planting and maintenance. The latter is of critical importance, since unlike other forest replanting projects, payment of compensation or reward is not based on the number of trees planted, but based on performance (numbers of trees surviving and increase in carbon stock). There are also transaction costs to estimate as well as property rights issues and clarity over sharing of revenue from carbon credits where trees are planted on public land or land where land users claim occupancy rights. These will be critically examined.
<p>Pilot Site 2: Tha Chin Watershed – Central Thailand - Nakorn Pathom and Samut Sakorn</p>
<p>Reduction of GHG emission and increase carbon sequestration through improved landuse practices; here are potentials to reduce GHG emission through prevention of land use conversion from natural ecosystems to other landuses. There are also potentials to (i) Change current agricultural production practices- such as to use no-tillage technologies, no after harvest burning, reduced uses of chemicals and (ii) changes from crop production to planting trees for carbon credits or at least increase in trees within the landscape ii) potential</p>

restoration of degraded sites to forested sites. These GHG sequestration and avoided emissions can be marketed, potentially, in Voluntary Carbon Credit Markets – especially linked to the industries within the catchment. A central part of the economic analysis will be estimations of differences in net revenue from current and proposed land-use practices to use as the basis for determining the value of compensation to land users willing to adopt the changes in land use practices. A thorough analysis will be done by making varying assumptions on changes both of agricultural commodity and carbon credit prices.

Improving the deterioration of water quality: The Tha Chin river’s pollution is from both point-source and non-point sources. In order to accurately analyse the economic benefits of water quality improvement, it is necessary to estimate the external costs of water pollution and especially to target areas where there are known point sources of water pollution can leading to high water pollution. A thorough analysis of discharge volume, types of pollutants, and options for water treatment and the marginal abatement costs for each pollutant will be assessed. Once the area scope as well as the nature and magnitude of the impact is established, stakeholders will be identified essentially the polluters and the parties affected. The economic analysis may include Cost-Effectiveness Analysis to determine the optimal water treatment technology. Valuation tools will depend on the type of negative impacts identified. For example, Cost of Illness, Avertive Cost or Cost of Treatment could be considered where deterioration in water quality affects health. If changes in water quality has negative impact on fish population and on revenue of those making a living either from capture fishery or fish culture, then it might be possible to use market prices to compute the value of loss, or Change in Productivity to estimate the revenue loss due to declining catch or reduced yield. It could also be that water quality deterioration results in reduced attraction for tourists, or the area could be of historical or cultural importance. In this case, it may be appropriate to use Revealed Preferences or Stated Preference techniques to estimate the economic value of the site.

Rehabilitation of mangrove forests to complement on-going efforts to prevent the problem of receding coastline. Through the years, several efforts have been implemented to protect the coastline in the area, including engineering work to reduce the strength of the waves as well as the proposals to protect and expand the remaining patch of mangroves. However, the scale and the momentum of such activities have not matched the requirements. The protection of the coastline will require both engineering solutions to build suitable physical infrastructure to protect the coastline as well as the soft measure to strengthen the existing coastline by rehabilitating the remaining mangrove forest. The Environmental Services for this Pilot Project site will focus only on the latter. The project will undertake a review of the efforts to date to rehabilitate the mangrove forest, analyzing the resources invested, outputs and outcomes, the strengths and the drawbacks. Based on these findings, the scope of the work to rehabilitate and expand the mangrove forests will be defined. Economic analysis will be undertaken to analyse the cost-effectiveness of the different technical options. Valuation work will also be conducted to estimate the economic benefits of the mangroves in terms of direct use, indirect use as well as non-use values. Such information, together with data and analysis of income profiles and opportunity cost of labour of local residents will be used as the basis for setting the level of reward and compensation for the service providers.

Pilot Site 3: Lam Sebai Watershed – North-eastern Thailand – Ubol Ratchathani

Balancing collective benefits versus personal benefits

The issue here is to ensure that the collective benefit from TFPs, NTFPs and sustainable water supply that is derived from the protection of the community forests is sufficient to off-set the potential to reap private gains from rubber production. While there can be no dispute that collective efforts of the Ban Bang Or community has been the main reason why the 1,870 rai community forest has remained in intact, the argument that such efforts contribute to sustainable flow of goods and services for the local communities can be strengthened if the benefits can be quantified and monetized.

The project will undertake an analysis to identify the type, quantity and estimated economic value of timber forest products (TFPs) and non-timber forest products (NTFPs) collected by community members as well as revenues from tourism activities (e.g. it is estimated that around 20,000 plus tourists visit this community forest area in the past few years). The benefits could be demonstrated in monetary terms using market prices, where these exist, and prices of substitute goods where products collected from the forests are non-traded. In addition to demonstrating the economic benefits from conservation efforts up to the present, it will also important to project the benefits into the future by comparing what would happen ‘with’ and ‘without’ the conservation efforts. Given that perceived opportunity of earning high revenue from rubber production is the main driver for converting current rice acreage over to rubber, studies will also be undertaken to compare the costs and benefits between the two crops both from the financial (looking at private costs and benefits) and economic (which looks at costs and returns from societal point of view by taking into account both positive externalities).

Efforts will also be undertaken at this site to enhance **carbon sequestration through better landuse practices** as in the previous sites (1 and 2).

Pilot Site 4: Koh Phangan – Southern Thailand – Suratthani Province

For ‘use-value’ linked to revenue from tourism, a baseline study will be commissioned on the number of establishments by business type (e.g., hotel, restaurants, diving schools, island tours, boat crossing operators). To estimate the ‘use value’ from tourism it is also possible to use Travel Cost Method (TCM) which is the common valuation method within the Revealed Preference Technique to estimate use-value of recreational sites. For other tangible ES provisioning benefits such as water supply, technical ground work will be considered to assess the quantity of water supply for comparison and forecasting of possible changes in stocks and flow of water based on varying scientifically acceptable assumptions. The supply side information will be used to compare with quantity demanded, the cost of water procurement and the cost of procuring water from alternative sources. The rationale for undertaking this exercise is to set the appropriate user charges that accurately reflect the scarcity of water supply.

The project will also attempt to estimate the overall non-use values of the ecosystems services in general, using appropriate valuation method is ‘contingent valuation’ or Choice Experiment Method, one of the widely used Stated Preference Technique, to estimate the economic value of specific sub-ecosystems.

Efforts will also be undertaken at this site to enhance carbon sequestration through better landuse practices as in the previous sites (1 and 2).

99. The project will support a Cost-Benefit analysis (CBA) of land-use options for each of the four pilot sites as the first step. By the mid-term of the project, economic valuation studies will have been conducted for landscape-wide ecosystem services of the 4 pilot sites. Estimated values will then be incorporated into the CBA studies for finalization of the analyses of trade-offs for the various land-use options. Innovations regarding management regimes and sustainable forestry practices will be built on indigenous knowledge and available skills. Thus, capacity development training curriculum will be developed with special attention paid to the knowledge and abilities that communities already possess. Capacity building programs will be implemented to ensure that the service providers have the technical skill to execute the activities and that they understand the linkage between those activities and improved ecosystems services.

100. **Output 2.3 Land-use based and biodiversity friendly PES & biocarbon financing strategies for CBFCM with result-based, equitable, transparent and unified payment distribution structure in place in 4 REO regions**

101. The potential buyers and sellers of ecosystem services have been indentified during the project preparation. The project will build on this information to ensure that stakeholders are identified, involved and their capacities build to negotiate and benefit from improved catchment management and PES schemes. The table below presents some of the potential sellers and buyers of ecosystem services at the four demonstration sites.

Table 7: Potential Sellers of ES and Potential Buyers of ES at different sites

Pilot Site 1: Mae Sa Watershed: Northern Thailand / Chiang Mai Province	
Sellers:	Buyers:
<p>For this pilot, where the main purpose is to generate the experience of adopting the PES concept as well as management considerations, only three villages has been identified as the key sites within the catchment basin : Ban Pa Nok Kok, Ban Mae Sa Noi and Pong Yang Nok.</p> <p>To reduce the pressure on forests, service providers (local communities) may be required to reduce the volume and types of trees and NTFPs collected from the natural forests. They may also be required to conform to prescribed land use practices to ensure sustainably or soil quality on-farm and to reduce off-site negative externality. They may be subject to new conditions regarding the types and volume of TFPs and NTFP collections, the timing of and collection of forest products. For both types of changes, determining the appropriate reward/compensation requires an understanding of the revenue from current uses of these resources. Among the information needed will include baseline information on how local villager benefit from forestry resources (types, quantity, market values, or where goods are non-traded, the market value of the closest substitutable goods).</p>	<p>There are a number of stakeholders who currently benefit from ecosystems services provided by the Mae Sa catchment forests. These can be divided into institutional stakeholder who would benefit from the improvement of the Mae Sa Watershed landscape such as Doi Suthep Pui National Park, Queen Sirikit Botanical Garden along with tourism related companies such as the Mae Sa Valley Elephant Camp. The second group are those who benefit from flow of resources which is assured by the sustainability of the forest ecosystem, including Aura Mineral Water Company, a private company producing bottled mineral water in Mae Sa District, as well as downstream communities / residents who rely on water for agriculture and for domestic water supply.</p>
Pilot Site 2: Tha Chin Watershed – Central Thailand - Nakorn Pathom and Samut Sakorn	
<p>Sellers: For the Tha Chin catchment there are two major groups of potential service providers: one are the land users who will agree to changing land use practices or crops planted. The second include both service providers and those who will also be required to cover the costs of water treatment as they are also the polluters and the cause of negative externalities. This is one aspect that distinguishes the Tha Chin catchment basin as a pilot site since there is also an effort to link the responsibilities of the ‘polluters’ who are required by the ‘Polluter-pay-principle’ to be responsible for the costs of addressing the negative externalities with the mechanisms of PES by offering them the option of paying for environmental services (to cover the costs of water clean-up) which may be implemented by themselves or by a third party. This concept of linking the principles of PPP and the mechanisms of PES draws from the experiences of the Chesapeake Bay Fund which will be used as one potential model, whilst working out the details during project implementation. Specific to the replanting of mangroves, the service providers would be the local residents who live long the fragile coastline of Bang Khun Tien. Given that the local residents are already incurring their own adaptation costs to minimize the damages of the receding coastline, cooperation will not be hard to foster. Similar to the Mae Sa Pilot Site, identification and selection of service providers should be based on arrangements that are acceptable to local residents.</p>	<p>Buyers: With GHG emission reduction as the target, the potential buyers are both buyers in the Voluntary Carbon Market as well as companies interested in investment in Corporate Social Responsibilities (CSR).</p> <p>For water quality improvement services, as discussed above, buyers (or those contributing to the costs of providing water clean-up services) will be, in principle, the polluters themselves. Other potential buyers will be those benefiting from the water supplies.</p> <p>Specific to the replanting of mangroves, potential buyers include local residents who are not participating as service providers and landowners who are no longer living in the area, as they stand to benefit from the services provided. The other group of potential buyers include the Bangkok residents as the Bang Khun Tien is a popular destination for seafood dining.</p>
Pilot Site 3: Lam Sebai Watershed – North-eastern Thailand – Ubol Ratchathani	
<p>Sellers: At present the service providers are villagers</p>	<p>Buyers: The potential ‘buyers’ (i.e. those benefiting</p>

<p>from Ban Bang Or. A system of workload and responsibility sharing in the management of community forests already exists in the community. There is, currently, no direct payment to the villagers who contribute time and resources. This can be attributed to the existence of a strong leadership (steering committee) and recognition by community members of the benefits of collective efforts to preserve the community forest. The project will facilitate consultation process with local community leaders to discuss key issues of the PES design to ensure that what is introduced complements and supports the collective community efforts already undertaken.</p>	<p>from ecosystem services provided by the Lam Sebai forests) can be divided into 4 groups: 1) local community members themselves who benefit from TFPs, NTFPs, water supply from Lam Sebai River and fishes and other aquatic species from the stream; 2) communities and beneficiary groups located further downstream who benefit from the continuous supply of water; 3) international carbon market investors 4) tourism stakeholders The project will undertake studies on the stock and flow of the water from Lam Sebai, the water users, the quantity and water quality demanded, current costs for water procurement, the quantity supplied by Lam Sebai to the total demand and the substituting sources of water. All these information will be the basis for assessing the level of dependency of water supply from Lam Sebai and related their willingness to become potential buyers to ensure the sustainable flow of water they need.</p>
<p>Pilot Site 4: Koh Phangan – Southern Thailand – Suratthani Province</p>	
<p>Sellers: The service providers for Koh Phangan Pilot PES project are diverse since the ecosystems services cover both land and sea activities. Based on information currently available during the project identification phase, Tambon Administration Organization could play an important role in coordinating the consultation processes to identify members of the local communities who would be interested to participate on land (forests and beach) conservation activities and enter into contractual agreement as service providers.</p> <p>The sea-based activities, which are primarily underwater activities, will be given special attention to increase technical skills, training and experiences, especially for participation of local communities..</p>	<p>Buyers: Based on the preliminary discussions, potential buyers include the large group of tourism related businesses such as hotel, diving schools, tour organizers, boat crossing operators and airlines (Bangkok Airways, Thai Airways). Potential buyers could also include companies who wish to invest in CSR activities. Many private business operators may understand that the initiatives they have already undertaken to ‘Go Green’ or social CSR activities such as building schools, etc., are already acts of contribution to the provision of ‘public good’. Under the Koh Phangan PES pilot project, the intention is to channel investments into conservation activities which ultimately provide the assurance for the sustainability of their businesses. They will be identified in full during project implementation period. Given the uniqueness of the natural resources of Koh Phangan, the general public may attach high value to its preservation thus the non-use value may constitute a large share of the total economic value of the island’s ecosystem. A third group of potential buyers could therefore be the general public.</p>

102. The project will facilitate the development of terms and conditions between PES sellers and buyers for PES schemes to be operational. This project will give due consideration to the cultural sensitivity and context specificity which will be crucial for guaranteeing that PES mechanisms are used to complement and support, and should not end up undermining what is already workable and suitable to the local context. Special attention will be given for equitable participation by women and men in decision making as well as in benefit distribution. Buyers of carbon credits could include parties outside the pilot sites, including international buyers. The project will actively work with TGO to explore national level VCM.

103. For each of the 4 pilot projects, payment mechanisms will be designed taking into account the diversities of the social and cultural context, the activities in rehabilitating and improving the ecosystem. To avoid any possibility that introduction of PES does not end up creating social rifts where none existed before, or aggravate existing tensions within the communities, payment mechanism adopted in the pilot projects will be the outcome of the consultation processes. The

Pilot projects will only proceed if there is consensus as to how what types of payment (monetary, in kind, technology transfer, recognition of tenure security), whether the recipient should be to the individual, or to the 'collective'. Special attention will be given to needs of women and other disadvantaged groups within the communities. Payments for Environmental services may not necessarily be in monetary form but could be in kind or terms of technology dissemination as determined by the local cultural norms. Cultural sensitivity and aversion to monetary payment will be respected particularly given the risks of disrupting the existing equilibrium where local communities were already providing ecosystems because they recognize its importance to their well-being.

104. It is possible that unforeseen events might occur which result in (i) service providers not being able to perform the responsibilities, (ii) the activities undertaken not generating the expected results in improving or enhancing ecosystems services. In developing payment mechanisms, details will, therefore, include insurance provision for unforeseen events so that service providers are not made liable for the occurrences of events that did not result from their actions or were uncontrollable.

105. As in all transactions, the flow of payments from the buyers will be contingent upon the deliverables as specified in the contract. Going back to the initial stages of the detailed design of the CBFCM which aim at introducing PES and biocarbon financing, for the financing mechanisms to work, all the contractual parties must agree to the deliverables. The deliverables in turn must be realistic, hence the need for technical inputs from experts in the fields (be they scientists, foresters, agronomists, hydrologists). As part of the preparatory process and developing and finalizing the contract, these deliverables will be clearly communicated to the Services Providers so that (i) Services Providers understand the connection between what they are doing and how this contribute to the improvement of ecosystems services and (ii) so that the Service Providers themselves can understand the verification process and results. Verification of benefit (e.g. improved ecosystem services) and carbon emission reduction credits will be carried out, including detailed negotiation of trading and purchasing agreements with international carbon markets. A tailor made M&E framework will be designed with the participation of local and international experts to provide reliable verification of carbon reduction from the project activities.

106. Develop marketing strategies and PES agreements: The ultimate aim of all the efforts vested are contracts signed by the concerned parties which specify the types and scope of 'services' being provided, the resources needed to carry out the activities, the expected output and the lag time required before the results become observable and tangible. This contract will be output of all the work undertaken in valuing ecosystems services, identification of measures to improve and/or rehabilitate natural resources base, estimating the different options and associated costs, analysing the costs and benefits of the different land use options and in designing M&E systems.

107. Since the issues of accountability, penalties or sanctions for violations of contracts are important, these will be given special attention by the project. An 'Accountability System' will be developed for each pilot site, which will be specified within the contract and binding to the parties. Feedback from annual reviews will be used to modify the systems, ensuring that they are practical and contribute to the effective implementation of the projects. The project will also support the development of a conflict resolution mechanism.

2.6 Key Indicators, risks and assumptions

108. Project indicators are presented in the Strategic Results Framework (see section **Error! Reference source not found.**) and in the table below. The project will deliver impacts on areas of catchment forest coverage, biodiversity, climate change and community livelihoods, and its progress will therefore be measured in accordance with impact indicators related to each of these.

109. Indicators of project impact on the biophysical environment and socio-economic situation, over the 4 year project period, will be primarily be limited to the project's four pilot area landscapes and the communities it is directly working on (see Table), however the project will also keep track of replication impacts of the project. Significant impacts on the biophysical environment outside of the pilot landscape can only be expected towards and after the end of the project, once the expected replication effect of project actions in the four pilot landscapes become evident at national level. This is normal for projects which focus on policy adaptation and capacity building, the biophysical impacts of which typically do not become evident immediately.

110. Key impact indicators related to each of these focal areas are as follows:

- **Catchment Forest Cover:** total area of catchment forest under community management in the four pilot site landscapes; total area of catchment forests within the 4 pilot area landscapes that are benefiting from PES and/or biocarbon financing schemes; this will include measuring the total forest cover under community management at project inception (baseline) and tracking changes in coverage over the four year time frame of the project, and assessing the proportion of this total forest cover that is managed under PES and/or biocarbon financing agreements.
- **Biodiversity:** the degree of stability of populations of keystone and indicator species in the pilot landscape, i.e. no net loss of natural forests / overall increase in biodiversity (species richness and evenness) of native tree species in the pilot catchment landscape from the baseline situation; the status of keystone and indicator species will be assessed by transects carried out by community members with the support of officials from the four participating REOs, MONRE and other institutional partners following training provided by the project.
- **Climate change:** reductions in the rates of loss of forest carbon stocks as a result of reduced deforestation, and increases in forest carbon stocks as a result of the protection and restoration of community forests through PES and biocarbon financing and other landuse changes will be monitored. Reductions in the rates of loss of carbon stocks in natural and community managed mixed-use agro-forests will be deduced from the data on rates of deforestation/reforestation which will be measured as a biodiversity indicator, as described above. Increases in the rates of carbon stocks will be deduced from data managed by participating communities on the rates of reforestation, combined with field inspections of growth rates. This will be measured in ton of CO₂ sequestered and /or avoided emissions within the framework of implemented PES schemes accumulative of all 4 pilot project area catchment basin sites.
- **Community Household Livelihood:** given that the project is based on the use of economic instruments such as PES and biocarbon financing as incentives for communities and individual land-users (farmers, NTFP harvesters, landowners, others) to both maintain and restore natural forests through the adoption of sustainable land-use management practices, an improvement in household income and livelihood will measured against baseline data at project inception; the project will use an adapted version of the Sustainable Livelihood Approach (SLA) developed by DFID to assess changes in farmer/land user livelihoods due to changes in land-use system. SLA comprises five different types of capital or assets – 1) human, 2) natural, 3) financial, 4) social, and 5) physical.

111. The Box below shows how the project seeks to meet the project objective through indicators, which are linked to the outcomes. This highlights some basic variables that are designed to indicate the impacts of the project. It will be impossible to attribute all changes in these “indicators” to the GEF project but it will be feasible to demonstrate some causality.

Outcome 1: National policy and institutional frameworks for sustainable use, and <i>in-situ</i> conservation of biodiversity in agro-ecosystems	Key Impact Indicators	Sampling Frequency	Location
	National Policies, laws, plans and guidelines incorporate CBFCM utilisation of PES and biocarbon financing for forest, ecosystem and natural resource conservation., especially within the following: <ul style="list-style-type: none"> • Environmental Quality Enhancement Act (1992) includes amendments for carbon emissions reduction and biodiversity conservation • 5-Year Environmental Quality Policy & Plan (ONEP-NEB) • 5-Year Strategic Management Plan of DWR • Participating REOs & PEOs’ 5-year Strategic Management Plans 	Project start, mid-term and end	National Level MONRE (ONEP-NEB) DWR (25 sub-basins) REO-1 & Chiang Mai PEO (North) REO-5 & Nakorn Prathom and Samut Sakorn PEO (Central) REO-12 and Ubol Ratchathani PEO (Northeast) REO-14 & Surat Thani PEO (South)
	Enhanced effectiveness of multi-agency / multi-sector dialogue and coordination within and between the key MONRE government departments and agencies and with the private sector, civil society and community network groups on the utilisation of PES and biocarbon financing in community based forest and natural resource management.	Annually over the four years of the project	MONRE (Bangkok) and nationwide
	Strengthened institutional capacities at the national and regional level to effectively implement PES and biocarbon financing schemes in support of CBFCM	Annually	MONRE Office of Monitoring & Evaluation 4 participating REOs
	An active national CBFCM PES/biocarbon data base for collection, management and dissemination of PES/biocarbon information, research, and case studies exist.	Mid-term and Project end	MONRE (Bangkok)
Outcome 2: Capacities and incentives to mainstream biodiversity, especially agro-biodiversity, at the Provincial, District and community levels	Key Impact Indicators		
	Community land-users in four pilot sites possess the skills , knowledge and incentives necessary to sustainably manage their community forests so as to ensure the continuous provision of key ecosystem services.	Annually	Mae Sa Catchment Tha Chin Catchment Lam Sebai Catchment Koh Phangan Catchment
	PES and biocarbon financing schemes are being implemented successfully within the four project pilot catchment areas.	Mid-term and project end	Mae Sa Tha Chin Lam Sebai Koh Phangan
Increase in the total forest cover within the project pilot site catchment basins. (15,000 ha is the target)	Project inception, mid-term and project end	Mae Sa Tha Chin Lam Sebai Koh Phangan	

	No net loss of natural forest in the four catchment areas from baseline situation.	Project inception, mid-term and project end	Mae Sa Tha Chin Lam Sebai Koh Phangan
	Increase in overall coverage of native tree species within the four project catchment forests, ensuring improve connectivity between forest habitats.	Project inception, mid-term and project end	Mae Sa Tha Chin Lam Sebai Koh Phangan
	Direct Conservation & enhancement of carbon and avoided deforestation and forest degradation	Project start, mid-term and project end.	Mae Sa Tha Chin Lam Sebai Koh Phangan
	5% increase in livelihoods of target community households participating in the project supported by PES and biocarbon financing schemes (livelihoods as defined by SLA)	Project inception, mid-term and project end	Mae Sa Tha Chin Lam Sebai Koh Phangan

112. Key risks and mitigation measures for them are tabulated below.

Table 9: Risks, ratings and mitigation strategies

Risk	Rating	Risk Mitigation Strategy
Institutional Support	L-M-H	
Weak coordination within and between local and national government institutions responsible for forest and land management; limited capacity (especially at lower levels) to interact with land users on forest management	L-M	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 1.2 Output 1.2 Functional multi-sectoral mechanism for CBFCM in place with participation of all Regional CBFCM Networks, REOs, ONEP and Royal Forest Department that facilitates effective policy feedback, knowledge sharing, and self-capacity development.
Policy		
Inconsistent national planning, budgeting, and policies concerning forestry, environmental protection and rural development, combined with additional inconsistency in provincial and district regulations and enforcement practices	L	The project's "Output 1.1 Harmonized policies, plans and legal instruments to support CBFCM and PES and biocarbon schemes" will assist the government in harmonizing some key policies
Local Support		
Sustainable forest management does not lead to sufficient economic gains for households at the project sites	L-M	Only practices identified by local communities themselves as socio-economically sustainable will be disseminated for adoption on a broader scale. The project will further reduce this risk by encouraging sustainable harvesting of NTFPs and by rapidly building the capacity of communities to engage in PES and carbon financing. The project design phase has already identified a number of options for increased income for communities through PES, as outlined under Component 2 of the project.
Land ownership and land access rights are not sufficiently clear with regard to community forests. Hence, the project strategy and incentives developed by the project will not be effective.	L-M	The project will address this risk by strengthening the policy framework on communities' right to access forest resources. In fact, this is a key result of the project – the creation of vertical linkages to allow practices on the grounds to effect changes in national policy. In absence of complete rights over communal forests, the payments they receive may be considered as an added incentive for forest management.
Environmental		

Effects of climate change, including temperature and sea level rises, ENSOs and natural disasters (forest fire, drought, flood, etc) might increase the natural loss of carbon stocks and biodiversity at the landscape level.	L	Given that climate change is likely to affect forest ecosystems, catchment functions and biodiversity over time, the project will assess and consider risks regarding climate change during assessment and capacity building activities (“climate proofing”). The project will also coordinate with relevant authorities to support disaster risk management to minimize natural disaster risks affecting forests and catchments.
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2.7 Expected global benefits

113. Without this project, there would be a continued disconnect between practices on the ground and policy related to CBFCM in production landscapes in Thailand. Furthermore, the capacity of communities to influence policy and planning processes at the national and regional levels would continue to be limited without systematic harnessing of the existing local CBFCM knowledge and experiences, and this would also constrain the scaling-up of best CBFCM practices. As a result, the opportunity to learn and apply innovative CBFCM techniques would be missed as would opportunities to access innovative future carbon financing options for CBFCM that would benefit local communities. The business as usual scenario would thus be continued degradation of Thailand’s forest ecosystems and catchment functions with associated loss of biodiversity and carbon stocks, all of which are accumulatively significant to the global biodiversity and carbon stock system.

114. GEF funding can overcome these problems by providing catalytic support to the removal of policy barriers and creation of mechanisms for vertical and horizontal networking, so as to promote knowledge-based policy development, exchange of best practices and implementation on the ground of CBFCM best practices. Moreover, the GEF support will also build critical capacity at the community level and institutional readiness needed by the country to fully capitalize on emerging opportunities presented by financing schemes such as PES, voluntary carbon trading and REDD. GEF support will ensure incremental global environmental benefits from the restoration of critical ecosystem services at the landscape level, leading to greater connectivity of biodiversity rich forest/woodland habitats, reduction of deforestation and land degradation and associated soil erosion and sedimentation, and enhancement of carbon stocks in forest landscapes, including wetlands and mangroves.

115. The global benefits to be realised through the successful implementation of this CBFCM project will include the following:

- Improved connectivity between areas of high biodiversity conservation value through placing approx. 15,000 ha under CBFCM
- At 4 pilots, 10% increase in total carbon stocks in ecosystems and 5% increase in local livelihood quality from ecosystem services benefiting communities
- Enhanced policy support and incentives for CBFCM from biodiversity friendly PES and biocarbon schemes and mechanisms, demonstrated by 15% increase in total CBFCM area coverage (including 5% of important habitat blocks) and 20% increase in funding over baseline by end of project

116. The direct global biodiversity benefits will be at the four sites. These are detailed below.

117. The forest area of the Mae Sa catchment covers about 386 ha, with most of the remaining forest covering the ridges and the steep slopes adjacent to streams. Most of the forest is secondary forest in form of deciduous dipterocarp, oak and pine, or tertiary forest (degraded grass and bush land). Some areas on the western slopes have been reforested with pine, some ridges in the east are covered with *Eucalyptus* sp.⁴⁹ A research study carried out by Chiang Mai University in 1992

⁴⁹ Schiller, Simone R., Land tenure and natural resource management in northern Thailand—A case study from a Hmong village, 1999.

within the Do Suthep-Pui National Park and adjoining forest area indicated that there were still a large number of species found (Table A).

Table A: Species Inventoried in Doi Suthep – Pui NP and Surrounding Area

Species	Number of species found
Flowering Plants	1,959
Birds	326
Butterflies	500
Moths	300
Mammals	61
Reptiles	50
Amphibians	28
Totals	3,224

118. Of this list, 22 species of birds are considered as nationally threatened including *Sitta magna*, *Terron sphenura* and *Lophura mythemera*. From 50 species of orchids on the threatened list of the International Union for the Conservation of Nature (IUCN), 7 are unique to the Mae Sa-Kok Ma area, including *Balanophora abbreviate* and *B. jungosa*. Another threatened species is a salamander, *Tylotriton verrucosa*, found only in three other places in Thailand. It's habitat in the Mae Sa-Kok Ma Biosphere Reserve.⁵⁰
119. The area used to host globally threatened large mammals, such as tiger, guar, elephant, bear, which are now extinct from the area. Hornbills used to be found in the catchment forests until about 15 years ago.⁵¹ The catchment has receive a form of protection in 1977 when it was encompassed within the boundaries of the Mae Sa – Kog Ma Biosphere Reserve, part of the UNESCO Man and the Biosphere programme. Community interviews and field investigations have identified over 50 edible leafy plants, 42 kinds of mushrooms, 21 edible vegetables, 8 tuber varieties, 21 kinds of wild fruits, 30 kinds of animals and birds (e.g., squirrels, birds, ant eggs, lizards, snakes, fish, turtles, beetles, locusts, and moths) and 14 kinds of edible insects in the area.
120. On the second site **Lam Sebai Catchment Basin (Northeast Thailand)** Community interviews and field investigations identified over fifty edible leafy plants, 42 kinds of mushrooms, 21 edible vegetables, 8 tuber varieties, 21 kinds of wild fruits, 30 kinds of animals and birds (e.g., squirrels, birds, ant eggs, lizards, snakes, fish, turtles, beetles, locusts, and moths) and 14 kinds of edible insects. Based on discussions with community informants, a seasonal calendar and transect of products by micro-ecological niche illustrate the seasonality of the forest production system and its impressive, multi-tiered floral and faunal diversity. These forest products are another source of income for them.⁵² The dipterocarp forest found along the banks of the Lam Sebai River also provides critical habitat for key freshwater fish species that spawn within flooded forests and also several species of fish that migrate from the Mekong River; some of these significant species include: Great White Sheatfish (*Wallagonia attu*) and Common Sheatfish (*Ryptopterus apogon*) Twist-Jaw Catfish (*Belodontichthys truncates*); Catfish (*Pangasius sutchi*); and Black-Ear Catfish (*Pangasius larnaudii*).
121. **Tha Chin Catchment Basin (Central Thailand)**, where the work will focus on mangroves, is another important biodiversity area. Mangrove forests are important to coastal ecology, providing nursery areas for species of shrimp, crab and fish, many of which are commercially important. Mangroves serve as rookeries, or nesting areas, for numerous species of coastal birds. Many migratory species depend on mangroves for part of their seasonal migrations. For instance, an estimated two million migratory shorebirds of the East Asian-Australasian Flyway, which annually migrate from the Arctic Circle through South-East Asia to Australia and New Zealand

⁵⁰ Rerkasem B. and Rerkasem K., 1995.

⁵¹ Rerkasem, B. and Rerkasem K., The Mae Sa-Kog Ma Biosphere Reserve. South-South Cooperation Programme on Environmentally Sound Socio-Economic Development in the Humid Tropics. Working Paper No. 3, 1995.

⁵² Center for Southeast Asia Studies, University of California, 1993.

and back, stop to forage at numerous wetlands along this Flyway, include the wetlands of Oceania.⁵³

122. The mangrove forest within Thailand contains at least 68 species of plants, 72 species of fish, 54 species of crab, 20 varieties of mollusc, 88 bird species (both migratory and residential), 35 species of mammals and 25 species of reptiles (OECF 1992).⁵⁴ The benthic macro-fauna species surveyed in the mangrove and estuary area of the Tha Chin River consist of 127 species of Phytoplankton, 23 Genus of Zooplankton 7, of Annelid, 56 Species of Free-living marine nematodes, 6 Species of Shrimp, 11 Species of Crab, 9 Species of Mollusc and 23 Species of fishes and more than 80 species of birds. *Avicennia* (*Avicennia alba* and *A. marina*) is the dominant tree species found especially within the coastal mangrove areas of the Gulf of Thailand.⁵⁵
123. Diving is one of the primary eco-tourism activities on Koh Phangan, because of the health of its marine biodiversity. There is abundant hump coral on the surrounding reefs which also offers shelter to various stag horn and table corals, plate and reef corals, anemone and brain corals. Encounters with groupers, anemone fish, rabbit fish, damsel, butterfly fish and snapper are common. Other important marine species found in the waters off Koh Phangan include the Shunk-striped Anemone fish, Damsel fishes, Magnificent Sea Anemone, Stag horn coral, Long-valley Coral, Neptune's Cup Sponge, giant clam (*Tridacna squamosa*, which is endangered in Thailand and on the IUCN Red List), and 5 species of Sea Grasses (*Gafrarium cf. tumidum*). The coral reefs provide habitat for Whale Shark (*Rhincodon typus*) and feeding area for Hawksbill (*Eretmochelys imbricata*) and Green Turtles (*Chelonia mydas*), as well as for mackerel spawning. Sea grass areas play a lesser known but nonetheless important ecological role: they form a key feeding, breeding, and nursery ground for many species of fish, turtles, lobsters and dugong. Moreover, they improve water quality and their root-like stems stabilize the sea bottom.⁵⁶
124. Koh Phangan's forests include beach forest, tropical rainforest, and Mangrove forest. There is one endemic species of coconut that grows only on Koh Phangan which is highly threatened and genetically still to be registered, as well as a regionally endemic herbal plant species (*Belamcanda chinensis*), which is also endangered.

2.8 Financial modality

125. The project will address the identified barriers primarily through the delivery of technical assistance. This financial modality is considered the most appropriate means by which to strengthen the systemic and institutional capacities of the national system for biodiversity-based business, and to catalyze community and commercial capacities to establish community-based social enterprises. The barriers identified in the project relate to gaps in capacities, and barriers to mainstreaming biodiversity conservation into business-based production sectors. These will be addressed through the development of tools and models, and targeted capacity assistance to overcome capacity barriers.

2.8 Cost effectiveness

126. The project's approach of mainstreaming biodiversity conservation and GHG emission reduction through community based forestry and catchment management is considered to be more cost effective than approaches that exclude community participation and are built solely on government investment and actions. This is because such public-private partnership reduces costs

⁵³ Macintosh, D. J. and Ashton, E. C. (2002). *A Review of Mangrove Biodiversity Conservation and Management*. Centre for Tropical Ecosystems Research, University of Aarhus, Denmark.

⁵⁴ Editor Paul T. Smith Australian Coastal Shrimp Aquaculture in Thailand: Key Issues for Research, Australian Centre for International Agricultural Research Canberra, 1992.

⁵⁵ http://km.dmcg.go.th/index.php?option=com_docman&task=doc_details&gid=360&Itemid=38

⁵⁶ World Bank, Thailand Environment Monitor, 2006.

for each group of stakeholder as costs are shared or substituted by investment by another group. For example, community led protection of forests reduces government investment for fencing or policing to achieve the same objective. For communities, their investment of time and effort brings them direct access to forest goods and services and, through the support of this project, will also ensure financial benefits for the ecosystem services they maintain and enhance. Therefore, this should be more economically attractive proposition for them than their non-participation in project supported activities.

2.10 Sustainability

128. The project's strong focus on building institutional capacities and systems is expected to lead to both strong sustainability and replicability of its actions. Specific policy development will be a one-off support action by the project, to be continued by concerned government agency. Key elements of sustainability built into this project include the following:

- The project was identified as a national priority and fits with national policies and plans
- There is a strong focus on formulating enabling policy and legal environment, encouraging institutional coordination and capacity building of stakeholders, which are essential for sustaining activities during project implementation period and beyond. Strong partnership and coordination has been built into the project - between government agencies, local government, NGOs, private sector and local communities
- Establishing partnerships between public-private-local communities thereby focusing on sustaining project activities.

129. Institutional sustainability: The project builds upon existing institutional government structures. The only new institutional mechanism proposed (a working group under Output 1.2) will be linked to national process and is expected to be sustainable as long as participants find it useful. This is a relatively low cost and will not be expensive to maintain by the government post project completion.

130. Financial sustainability: The first component of the project, which focuses on national enabling environment, A key thrust of the project is to pilot the use of PES and biocarbon financing mechanism for effective forest catchment management at local level. The project will ensure that such mechanisms at the local level are sustainable.

131. Social sustainability: The capacity building activities, networking and continuous field-level presence by the management agencies (state, private and civil society) will help achieve social sustainability of the project. The build up of trust through dialogues and stakeholder consultations, and stakeholder mobilization through capacity building by the project will assist in achieving this long-term objective. The strong focus on building on local knowledge, capacities and incentives and ensuring gender equity are expected to lead to social sustainability.

132. Environmental Sustainability: The primary purpose of this project is to achieve environmental sustainability in Thailand. The first component of the project builds national to local capacities of government agencies whose mandate is to protect Thailand's environment. The second component's focus on improving better forestry and catchment management through sustained financial incentive is expected to lead to better environmental sustainability.

2.11 Replicability

133. The project is expected to lead to significant replication of the proposed actions. The fact that the project has been designed in full view of national needs and priorities and considering cost effectiveness means that it will be easily replicable. In terms of government's own mechanisms, lessons from this project, which works through 4 REOs can be easily replicated to all 16 REOs via MONRE's existing cross-REO learning and sharing mechanisms. The project's

implementation through multi-sectoral coordination of the various key agencies (including REOs, RFD, DWR, PEOs), departments under MoNRE with the Ministry of Agriculture & Cooperatives (MoAC) and community forests and catchment basin networks (including PAOs and TAOs) will help to further ensure the visibility and national recognition of project achievements and facilitate wider replication through existing and new programmes of the implementing partners as well as through their vast networks. Both RFD and REOs have significant national and field presence as well as a long history of working together.

134. Secondly, the project's focus on effective coordination and cooperation with other related initiatives (Output 1.2) means that lessons and experiences from the project can also be replicated by such projects and initiatives. The third key stakeholder group that the project is working with are the community networks at the field sites. The project will also facilitate lessons learning and sharing amongst different community networks, thus further strengthening replication of the project approach and actions through community ownership as well.
135. A major strength of the project is its focus on economic valuation of services that forest and watershed catchment ecosystems provide. This allows for considerable up-scaling and replication of successful adaptation measures by other communities in Thailand. Replicability will be further enhanced if the project is successful in catalyzing private sector funding for CBFCM using PES and bio-carbon financing mechanisms, through the increased awareness of value and vulnerability of certain ecosystem provisioning and support services to different economic groups.
136. International learning and transfer of knowledge will also be encouraged through a range of approaches, including the use of websites and networks - such as the global Adaptation Knowledge Platform for Asia (AKP) and Asia Pacific Adaptation Network (APAN) - as well as through a national conference on CBFCM in Thailand in the project's final year.

SECTION 3: PROJECT RESULTS FRAMEWORK

Part I: Project Results Framework

<p>This project will contribute to the following Country Program outcomes: <u>Energy and Environment for Sustainable Development</u></p> <p>Primary:</p> <p>Outcome 2: Increased capacity of national focal points in addressing policy barriers to local sustainable management of natural resources and environment in selected ecosystems;</p> <p>Outcome 1: Efficient community network in sustainable use of local natural resources and energy with engagement in policy and decision-making processes;</p> <p>Secondary:</p> <p>Outcome 3: Alternative knowledge management for community learning based on indigenous livelihoods and evidence-based empirical studies that strengthen case for pro-poor policies.</p>					
<p>Country Programme Outcome Indicators:</p> <ul style="list-style-type: none"> • Achievement of national target set for improving natural resources conservation, state of the environment, and sustainable production and consumption; • Public recognition and leading role of community-based organization networks in local natural resources management and value-added; • Widely used of knowledge production and alternative learning methodology. 					
<p>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page): <u>Mainstreaming Environment and Energy</u></p>					
<p>Applicable GEF Strategic Objective and Program:</p> <p>Biodiversity SO2: To Mainstream Biodiversity in Production Landscapes/Seascapes and Sectors;</p> <p>Strategic Programme P 4: Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity</p> <p>Climate Change Mitigation (CCM), Strategic Objective 7: To reduce GHG emissions from land use, land use change and forestry;</p> <p>Strategic Program 6: Management of Land Use, Land-Use Change and Forestry (LULUCF) as a Means to Protect Carbon Stocks and Reduce GHG Emissions</p>					
<p>Applicable GEF Expected Outcomes:</p> <ol style="list-style-type: none"> 1. Biodiversity Strategic Objective-2: Strategic Program 4: Outcome : Policy and regulatory frameworks governing sectors outside the environment sector incorporate measures to conserve and sustainably use biodiversity 2. CCM7-SP6, Outcome: Development and adoption of systems enabling countries to measure and reduce GHG emissions from LULUCF 					
<p>Applicable GEF Outcome Indicators: The degree to which national policies and plans (identified) incorporate PES and biocarbon financing mechanism in support of CBFCM.</p>					
	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
<p>Project Objective: To create an enabling policy and institutional environment for scaling-up of integrated community-based forest and catchment management (CBFCM) practices through harnessing of innovative financing mechanisms in Thailand</p>					
<p>Outcome 1: Strengthened policy environment and systemic capacities to promote sustainable community-based forest</p>	<p>1.1 Number of national policies and plans (identified) that incorporate PES and biocarbon financing</p>	<ul style="list-style-type: none"> • Forestry and catchment management policies and legal instruments currently have limited inclusion of CBFCM 	<ul style="list-style-type: none"> • Revision of the DWR's 5-year Integrated River Basin Mgmt. Plan (2012 – 2016) and 25 annual Integrated River Basin 	<ul style="list-style-type: none"> • Royal Gazette • Ministerial order/ notification regarding Relevant policy • Relevant policy support 	<p>RTG and relevant ministries are increasingly committed to supporting strategies and actions towards low-carbon green</p>

<p>and catchment management through PES and biocarbon financing mechanisms</p>	<p>mechanism in support of CBFCM.</p>	<ul style="list-style-type: none"> • Department of Water Resources prepare 5 year IWRM but do not include CBFCM, nor focus on any biodiversity or biocarbon conservation nor provisions for innovative finance • Environmental Protection Act (1992) does not include provisions to promote economic instruments for GHG emission reduction or sequestration • National/ Regional and Provincial Plans do not include provisions for CBFCM or PES / biocarbon financing. 	<p>Management Plans to include provisions for CBFCM using PES and biocarbon financing.</p> <ul style="list-style-type: none"> • Enhancement and Conservation of National Environmental Quality ACT (1992) to include economic instruments for carbon emission reduction and biodiversity conservation • Recommendations to include provision for CBFCM – PES in the Five Year Environmental Quality Plan (ONEP – NEB) then translated into the Regional Environmental Management Plan (REOS) • At least 4 REOs specifically include provision for implementation of CBFCM utilizing PES and biocarbon financing mechanisms in their 5-year strategic plans • At least 4 Provincial Natural Resources and Environmental Action Plans include actions that support CBFCM through PES/ Bio carbon 	<p>document (i.e. environmental management plans of ONEP and REOs)</p>	<p>economy</p>
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	1.2 Existence of a multi-agency / multi-sectoral mechanism for CBFCM/ PES – biocarbon dialogue, consultation with inclusive participation from all relevant government organizations, CSOs, academia, private sector and CBFCM community networks.	<ul style="list-style-type: none"> • Currently, no such mechanism exists . 	<ul style="list-style-type: none"> • Ad-hoc Working Group established under the National Environmental Board on <u>Economic Instrument for forest and catchment management</u> 	<ul style="list-style-type: none"> • Meeting Minutes of NEB • Minutes of working group meetings 	PES and biocarbon concept is well recognized as an important issues for relevant sectors
	1.3 Institutional capacities strengthened at national (M&E Office) and regional levels (4 pilot REO training centres) to implement PES and biocarbon financing schemes in support of CBFCM .	<ul style="list-style-type: none"> • No central oversight body exist for PES/ biocarbon implementation • Existing training and capacity building programmes for REOs do not include PES/biocarbon methods • No training centre at REO level. • Current institutional and staff capacity levels or REOs in relation to the use and mainstreaming of PES and bicarbon financing for CBFCM (low) 	<ul style="list-style-type: none"> • M&E Office (under MONRE Permanent Secretary’s Office) has capacity to coordinate and provide oversights of PES/biocarbon implementation by REOs and Provincial Natural Resources and Environmental Office • At least 50 REO Officers trained on PES and biocarbon tools and methods (2-3 staff from each of the 16 REOs) • At least 4 REOs can deliver capacity building training to their regional networks on the use of PES/ Biocarbon financing for CBFCM and natural resource management 	<p>M & E reports on PES implementation</p> <ul style="list-style-type: none"> • PES / biocarbon finance for natural resource conservation curriculum • Training documentations (including budgets, training agendas, training programme participation lists, etc.) 	
	1.4 Existence of an active national CBFCM data base (that includes relevant information such as natural resource consumptions rates/patterns,	<ul style="list-style-type: none"> • Currently no such database exist in Thailand 	<ul style="list-style-type: none"> • Creation of a National CBFCM PES/biocarbon financing database and mechanisms for information dissemination and knowledge sharing. 	<ul style="list-style-type: none"> • Existence of national database • Baseline data and best practice documentation 	All line agencies and departments will coordinate their data management systems in support of the central CBFCM database

	biodiversity levels, PES & biocarbon data) generated through baseline studies and participatory M & E and identification of best practice.				
Output 1.1 Harmonized policies, plans and legal instruments to support CBFCM and PES and biocarbon schemes					
Output 1.2 Functional multi-sectoral mechanism for CBFCM in place with participation of all Regional CBFCM Networks, REOs, ONEP and Royal Forest Department that facilitates effective policy feedback, knowledge sharing, self-capacity development and access to PES and biocarbon					
Output 1.3 National capacities enhanced to promote incentive based forest and catchment management through local communities					
Outcome 2: Expanded CBFCM coverage through pilot testing and up-scaling of best practice using PES and biocarbon financing schemes and mechanisms	2.1 Number and Type of PES and biocarbon financing schemes <u>developed and applied</u> (in place) for CBFCM in the 4 pilot sites.	<ul style="list-style-type: none"> Currently there are no PES and biocarbon financing strategies and schemes developed and/or applied for CBFCM within the 4 REO pilot site regions. 	<ul style="list-style-type: none"> At least 4 PES and biocarbon financing schemes (1 for each REO region pilot site) are developed and implemented during the project cycle. 	<ul style="list-style-type: none"> 5- year and annual Strategic Management Plans and Annual Report of the 4 REO regions where the pilot projects exist. Validated PES Agreements from each of the 4 pilot regions Documentation and results on M & E progress of PES / biocarbon schemes in the 4 pilot sites. 	<p>There will be no major environmental event that will occur within the 4 project areas that will undermine the necessary conditions for PES and biocarbon schemes to be applied and implemented throughout the project period.</p> <p>There are feasible land use measures that can be adopted that can significantly reduce threats to the flow of ES, along with measures to recover and/or improve ES. operationalised.</p>
	2.2 Total area of catchment forest under community management in the 4 pilot catchment basins. Total area of catchment forests within the 4 pilot catchment basins that is benefiting from PES	<ul style="list-style-type: none"> Current accumulative total of all forest under community management in each of the 4 catchment basin pilot sites. Data collection on total coverage of community managed forests within each catchment basin will need to be 	<ul style="list-style-type: none"> Collectively, 15,000 hectares are identified and designated CBFCM forests within the 4 pilot catchment basins. 	Data provided by REOs on total catchment forests in each of the 4 pilot catchment basins at the end of the project period.	Risk: Rural poverty and indebtedness continue to put pressure on communities to encroach and degrade forest land.

	and biocarbon financing schemes.	undertaken at the start of the project.			
2.3	Ton of CO2 sequestered and /or avoided emissions within the framework of implemented PES schemes accumulative of all 4 pilot project area catchment basin sites.	Some work on assessment of forest carbon has been initiated by the RFD and DWNP for Thailand's R-PIN application of the World Bank's Forest Carbon Partnership Facility (FCPF) Readiness Plan, as well as by independent studies by specialists in various universities. Forest carbon stock assessment will have to be undertaken for the 4 pilot sites.	<ul style="list-style-type: none"> • Direct Conservation & enhancement of carbon in 5250 ha of forests leading to 163426 tons of carbon dioxide equivalent sequestration • Avoided deforestation and forest degradation of at least 296 ha, leading to avoided emission of at least 49846 tons of carbon dioxide equivalent over direct project period 	Data on CO2 and biodiversity resources before and after PES projects have been launched in the 4 pilot catchment basin areas.	Survival and growth rate are too low for accurate accounting of carbon stock sequestered.
2.4	Global biodiversity values maintained or enhanced at pilot sites	Threats to forests and associated biodiversity continues at demonstration sites	<ul style="list-style-type: none"> • No net loss of natural forests in the catchments from baseline situation • Increased overall coverage of native tree species within the catchments, ensuring better connectivity between forest habitats 	<ul style="list-style-type: none"> • Baseline measurements of fauna and flora within the four pilot catchment basins at the beginning and end of project cycle. 	There will be no major environmental event that will occur within the 4 project areas that will undermine the necessary conditions for species viability.
2.5	Livelihood quality Index	<ul style="list-style-type: none"> • Some socio-economic data can be obtained by the Community Development Department and the Department of Agricultural Extensions. • For the 4 selected pilot sites, data collection must be designed specifically for the purpose of measuring livelihood changes resulting from the project. 	<ul style="list-style-type: none"> • 5 % increase in livelihood quality of life index in the project's participating communities 	<ul style="list-style-type: none"> • Survey results • Household accounts 	There will be a transparent and reliable correlation that can be drawn between livelihood quality and PES / biocarbon schemes per project site.

	<p>2.6 Capacities of local authorities and community land users in land use options that enhance ES and to ensure market-based payments from PES and biocarbon financing for improved livelihoods. Environmental Quality of key ES parameters such as water quality, soil nutrient levels, sedimentation.</p>	<ul style="list-style-type: none"> Local capacities in sustainable land use options must be assessed at the beginning of project. There has been some training provided to local authorities and community land user / community forest & watershed networks on sustainable land use practices through various government and independent projects ES and PES / biocarbon financing. 	<ul style="list-style-type: none"> At least 4 Tambon Administrative Organisations (TAOs) are actively engaged in PES/ biocarbon scheme implementation within their respective communities in support of CBFCM At least 30% of community forest / watershed network members have adopted sustainable land-use practices in the four pilot catchment basins. Overall land use practices in the four pilot catchment basins sufficiently improve. 	<ul style="list-style-type: none"> PES / biocarbon schemes documentation that are managed by local authorities in the 4 pilot sites for CBFCM (e.g. meeting minutes) Measurable data (quantitative and qualitative) on land use practice by communities in the 4 pilot catchment basins. Measurable data on ES parameters within four pilot catchment basins (must show an upward trend in both areas). 	<p>There is sufficient incentive and motivation for land users to adopt better land use practices. There is a clearly identifiable link between a change in unsustainable land use practices and an increase in ES and benefits to the buyers, which results in continuation of PES / biocarbon contract agreements/payments. Traditional /indigenous land use practice can both be sustainable and unsustainable in the present context</p>
	<p>2.7 Number of national and regional level forums, meetings and documents highlighting best practice and lessons learned in using PES and biocarbon financing for CBFCM.</p>	<ul style="list-style-type: none"> Currently there is no central department / agency to take responsibility for CBFCM, PES/biocarbon pest practice and lessons learned, or the existence of a database to manage this type of information and make it available to others. 	<ul style="list-style-type: none"> At least 4 regional best practice/ lesson learned exchange forum on PES At least 1 National forum for PES policy strategies and collaboration (declaration of cooperation) 	<ul style="list-style-type: none"> Existence of National CBFCM coordinating body Proceeding and documents from seminars, forums, journals and other public media. 	
<p>Output 2.1 Capacities of local authorities, landholders and the private sector enhanced to ensure market-based payments and harness innovative financing for improved livelihoods</p> <p>Output 2.2 Catchment level ecosystem services valuation (incl. biocarbon) and assessment of benefits, trade-offs and opportunity costs of land-use options</p> <p>Output 2.3 Land-use based and biodiversity friendly PES & biocarbon financing strategies for CBFCM with result-based, equitable, transparent and unified payment distribution structure in place in 4 REO regions</p>					

PART II: Total Budget and Workplan

Award ID:	00061756	Project ID:	00078499
Award Title:	PIMS 4033 MFA FSP: CBFCM		
Business Unit:	THA10		
Project Title:	Integrated community-based forest and catchment management through an ecosystem service approach (CBFCM)		
PIMS #:	4033		
Implementing Partner:	Ministry of Natural Resources and Environment (MONRE)		

GEF Outcome/ Atlas Activity	Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Acct Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	Budget Note
OUTCOME 1: Strengthened policy environment and systemic capacities to promote sustainable community-based forest and catchment management through PES and bio-carbon financing mechanisms	MONRE	62000	GEF	71200	International Consultants	-	-	-	-	-	
				71300	Local Consultants	24,480.00	36,720.00	36,720.00	24,480.00	122,400.00	A
				72100	Contractual Services	51,720.00	96,800.00	96,800.00	51,720.00	297,040.00	B
				71600	Travel	15,000.00	20,000.00	20,720.00	15,000.00	70,720.00	C
				72500	Supplies	10,640.00	25,360.00	28,000.00	29,840.00	93,840.00	D
				74500	Miscellaneous	4,000.00	4,000.00	4,000.00	4,000.00	16,000.00	E
					Total	105,840.00	182,880.00	186,240.00	125,040.00	600,000.00	
OUTCOME 2: Expanded CBFCM coverage through pilot testing and up-scaling of best practice using PES and biocarbon financing schemes and mechanisms	MONRE	62000	GEF	71200	International Consultants	12,750.00	-	12,750.00	-	25,500.00	F
				71300	Local Consultants	56,800.00	56,800.00	50,000.00	50,000.00	213,600.00	G
				72100	Contractual Services - Company	90,000.00	150,000.00	150,000.00	30,000.00	420,000.00	H
				72100	Contractual Services	20,000.00	40,000.00	40,000.00	20,000.00	120,000.00	I

				71600	Travel	19,000.00	17,000.00	19,000.00	15,000.00	70,000.00	J
				72500	Supplies	15,000.00	35,000.00	45,000.00	15,000.00	110,000.00	K
				74500	Miscellaneous	7,000.00	8,000.00	8,000.00	6,082.00	29,082.00	L
					Total	220,550.00	306,800.00	324,750.00	136,082.00	988,182.00	
PROJECT MANAGEMENT	MONRE	62000	GEF	71200	International Consultants	-	-	-	-	-	
				71300	Local Consultants	27,852.00	27,852.00	27,852.00	27,852.00	111,408.00	M
				71600	Travel	200.00	300.00	300.00	200.00	1,000.00	N
				72500	Supplies	600.00	600.00	600.00	600.00	2,400.00	O
				72800	IT Equipment	1,500.00	500.00	500.00	500.00	3,000.00	P
				74500	Miscellaneous	400.00	400.00	400.00	352.00	1,552.00	Q
					Total	30,552.00	29,652.00	29,652.00	29,504.00	119,360.00	
MONITORING & EVALUATION	MONRE	62000	GEF	71200	International Consultants	-	7,650.00	-	7,650.00	15,300.00	R
				71300	Local Consultants	-	4,080.00	-	4,080.00	8,160.00	S
				71600	Travel	-	9,300.00	-	9,300.00	18,600.00	T
				74100	Micro Assessment/ Audit	1,500.00	-	5,140.00	-	6,640.00	U
				74500	Miscellaneous	500.00	500.00	500.00	440.00	1,940.00	V
					Total	2,000.00	21,530.00	5,640.00	21,470.00	50,640.00	
TOTAL PROJECT						358,942.00	540,862.00	546,282.00	312,096.00	1,758,182.00	

Source	Year 1	Year 2	Year 3	Year 4	Total
GEF	358,942.00	540,862.00	546,282.00	312,096.00	1,758,182.00
UNDP	87,500.00	87,500.00	87,500.00	87,500.00	350,000.00
MONRE	2,880,000.00	3,000,000.00	3,110,000.00	3,220,000.00	12,210,000.00
Total	3,326,442.00	3,628,362.00	3,743,782.00	3,619,596.00	14,318,182.00

Part III: Budget Notes

GEF funding is used for funding through a range of items including: International Consulting, National Consulting, Travel, Contractual Services, Supplies, and Miscellaneous.

The budget and budget notes reference US dollars. The budget assumes average unit costs for the most common cost items as provided below. Other costs are determined on a case-by-case basis.

International Consultant (per/person week)	\$2,550
Local Consultant (per/person week)	\$1,360
International Travel (per trip)	\$2,500
Local Travel (per trip on average)	\$500

Budget Item	Total	Budget Note	Details
OUTCOME 1: Strengthened policy environment and systemic capacities to promote sustainable community-based forest and catchment management through PES and bio-carbon financing mechanisms			
International Consultants	0		
Local Consultants	122,400	A	At least three national consultants will be hired for a total of 90 weeks across the total project duration. These will include an Environmental Economics/ PES expert (48 weeks), a Policy and Institutional Expert (32 weeks) and a Legal Expert (10 weeks)
Contractual Services	297,040	B	This contractual service is primarily for the completion of “Output 1.3 National capacities enhanced to promote incentive based forest and catchment management through local communities”. Building on capacity assessment undertaken at the project preparation phase, the contractor will work with MONRE and REOs to design and implement sustainable capacity building approaches. The contractual services provider will also help strengthen national CBFCM data base that is user-friendly and easily updated.
Travel	70,720	C	This covers the economy class air travel costs of national consultants to field sites and per diems associated with the travels.
Supplies	93,840	D	The supplies include costs of publications and materials for publications, and audio-visual materials for information dissemination as well as for capacity building events.
Miscellaneous	16,000	E	This has been budgeted for any unforeseeable developments during project implementation that require adaptive management actions that cannot be finance through the existing planned budget to account for inflation, currency rate exchanges and
Total	600,000		
OUTCOME 2: Expanded CBFCM coverage through pilot testing and up-scaling of best practice using PES and biocarbon financing schemes and mechanisms			
International Consultants	25,500	F	The international consultant has been budgeted for 10 weeks to build capacities on bio-carbon assessment at landscape level and to design strategies to enhance GHG emission reduction from land use and landuse changes, as well as help design “marketing” of GHG emission reduction to voluntary markets nationally and internationally.
Local Consultants	213,600	G	These include recruitment of 4 field site coordinators to assist community mobilization, M&E and capacity building of local stakeholders.
Contractual Services - Company	420,000	H	This will cover contractual services, primarily linked to Output 2.2 Catchment level ecosystem services valuation (incl. Bio carbon) and assessment of benefits, trade-offs and opportunity costs of land-use options

			Output 2.3: Land-use based and biodiversity friendly PES & bio carbon financing strategies for CBFCM with result-based, equitable, transparent and unified payment distribution structure in place in 4 REO regions
Contractual Services	120,000	I	This is to primarily for Output 2.1: Capacities of local authorities, landholders and the private sector enhanced to ensure market-based payments and harness innovative financing for improved livelihoods
Travel	70,000	J	Travel of international consultant and per diems as well as for local consultants between field sites and Bangkok, including travel for local communities and stakeholders so that they can learn from other sites.
Supplies	110,000	K	The supplies include s operational equipment to support field work – particularly in monitoring ecosystem services and changes in them– such as GPS, Mapping systems, radios etc
Miscellaneous	29,082	L	This has been budgeted for any unforeseeable developments during project implementation that require adaptive management actions that cannot be finance through the existing planned budget. to account for inflation, currency rate exchanges and
Total	988,182		
PROJECT MANAGEMENT			
International Consultants	-		
Local Consultants	111,408	M	This will include recruitment of a Project Manager: @ USD 1,658 per month for 4 years = USD 79,584 Project Assistant on Admin and Finance : @ USD 663 per month for 4 years = USD 31,824
Travel	1,000	N	This includes some travel costs for the NPM and Project Assistant within Bangkok.
Supplies	2,400	O	This will cover some basic office supply costs
IT Equipment	3,000	P	This will cover costs of computer and printer purchase
Miscellaneous	1,552	Q	Same as L above
Sub Total	119,360		
MONITORING & EVALUATION			
International Consultants	15,300	R	This will cover the consultancy fees for international consultant for MTE and TE
Local Consultants	8,160	S	This will cover consultancy fees for local consultant for MTE and TE
Travel	18,600	T	This travel costs will cover international air fare and per diems for MTE and TE consultants and local travel and per diems for local consultants
Micro Assessment/ Audit	6,640	U	This will cover 1. Micro Assessment (total \$1,500) at the first year 2. Audit (\$5,140) at the end of second year
Miscellaneous	1,940	V	Same as L above
Sub Total	50,640		
Total Project Management and M&E	170,000		

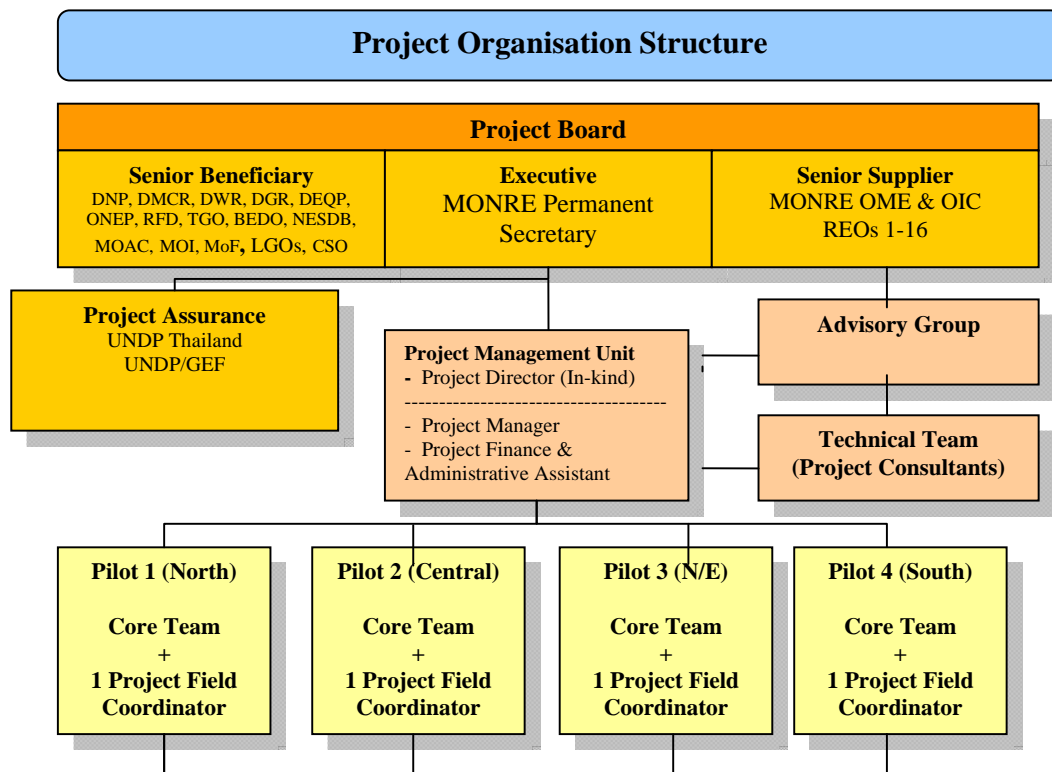
Thailand FSP

Total			
TOTAL PROJECT Overall project	1,758,182		

SECTION 4: PROJECT MANAGEMENT ARRANGEMENT

4.1 Project Management Structure

137. The project will be executed through UNDP's National Implementation Modality (NIM) with the Ministry of Natural Resources and Environment (MONRE) as the Implementing Partner (IP). At the central level, the Office of Monitoring and Evaluation under MONRE's Office of Permanent Secretary will serve as the focal point of the project and the project management unit. At the site level, Regional Environmental Offices (REO) will be the focal points in each pilot site. REO 1 will lead the Northern cluster; REO 12 will lead the North-eastern cluster; REO 5 will lead the Central cluster; REO 14 will lead the Southern cluster.
138. The project will be governed in accordance with UNDP's Results Management Guideline (RMG), GEF rules and procedures, and MONRE's operational policies. Following the programming guidelines for national implementation (NIM) of UNDP supported projects, MONRE will sign the Project Document with UNDP and will be responsible for the distribution of funds and achievement of the project objective and outcomes, as per the approved work plan.
139. In particular, MONRE will be responsible for the following:
1. coordinating activities to ensure the delivery of agreed outcomes;
 2. certifying expenditures in line with approved budgets and work-plans;
 3. facilitating, monitoring and reporting on the procurement of inputs and delivery of outputs;
 4. coordinating interventions financed by GEF/UNDP with other parallel interventions;
 5. preparation of Terms of Reference for consultants and approval of tender documents for sub-contracted inputs, and;
 6. reporting to UNDP on project delivery and impact.
140. The project will establish a Project Board (PB) and a Project Management Unit (PMU) within the Office of Monitoring and Evaluation of MONRE. The PB and PMU will be responsible for communicating the lessons/outcomes of actual site work to relevant central bodies and make use of them in developing new policies. Existing local coordinating bodies will be utilized, enhanced, and/or expanded so as to ensure coordination of activities at the site level and the participation of important stakeholders. The overall management structure of the project is shown below:



141. **The Project Board (PB)** will be responsible for making management decisions for the project particularly where guidance is required by the Project Management Unit. The PB will play a critical role in project monitoring and evaluation by assuring the quality of these processes and products and using evaluations for performance improvement, accountability and learning. The PB ensures that required resources are received and settles dispute within the project and with external bodies. In addition, it approves the responsibilities of the PMU and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans.

142. **PB Composition and organization** will comprise::

- 1) **An Executive:** individual representing the project ownership to chair the group.
- 2) **Senior Supplier:** individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project.
- 3) **Senior Beneficiary:** individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.

143. The Project Board shall be established at project inception. It shall be chaired by the MONRE Permanent Secretary. The proposed composition includes representatives from key agencies related to PES and CBFCM policies and implementation as specified in the stakeholder analysis. These may include ONEP, DNP, DMCR, DWR, DGR, DEQP, RFD, TGO, and representatives from Local Government Organisations (LGOs), Civil Society Organisations (CSO) and academia.
144. The project board shall meet at least twice a year, to improve the annual work plans and annual progress reports. It will provide overall guidance for the project throughout implementation.
145. In order to ensure UNDP's ultimate accountability for the project results, Project Board decisions will be made in accordance with standards that uphold management for development results, best value money, fairness, integrity, transparency and effective international competition. In cases where PB consensus cannot be reached, the final decision shall rest with the UNDP Environment Project Manager.
146. **The Project Management Unit (PMU)** will be in charge of overall project administration and coordination with project sites and relevant organizations under the overall guidance of the PB. **The Project Director** will be a MONRE official assigned as an in-kind contribution to provide overall guidance to the Project Management Unit members hired under the project budget. The PMU will consist of a Project Manager and a Project Finance and Administrative Assistant also hired under the project budget.
147. The PMU shall be based at MONRE's Office of Monitoring and Evaluation. The PMU is responsible for overall management, monitoring and coordination of project implementation in accordance with UNDP regulations for managing UNDP/GEF projects. Specifically, its responsibilities include:
1. ensuring professional and timely implementation of the activities and delivery of the reports and other outputs identified in the project document;
 2. (ii) coordinating and supervising activities outlined in the project document;
 3. (iii) contracting of and contract administration for qualified local and international experts who meet the formal requirements of the UNDP/GEF;
 4. (iv) managing financial administration
 5. (v) facilitating communication and networking among key stakeholders at the national level;
 6. (vi) organizing meetings of the PB;
 7. (vii) reviewing and approving work and financial plans of implementing partners, and;
 8. (viii) monitoring and supporting the activities of the implementing partners.
148. **The Project Manager** will be responsible for the technical, financial and administrative coordination of the project. S/he will report progress based on reports received from the pilot sites and local responsible partners. S/he shall have the authority to run the project on a day to day basis in support of the MONRE Project Director, within parameters established by the Project Board. The Project Manager's prime responsibility is to ensure that the Project achieves the required results at the required standard within the required timeframe and

budget. The project manager will also coordinate directly with UNDP Environment Unit Manager and responsible programme officer, who will subsequently report to the Regional Coordination Unit of UNDP-GEF office.

149. **The Project Technical Team** will consist of national and international consultants, hired by the project to provide technical support in project implementation. The Technical Team will work closely with and in support of the project management unit and the core teams in the pilot sites. The technical team will work under supervision of the MONRE national project director and the project manager.

150. **Advisory Group** will provide technical guidance and advice on specific issues on an ad-hoc basis. The group will not have any decision-making responsibilities in the project implementation. The composition of the advisory group will be decided during the inception phase.

151. **The Core Team** will be established in each pilot site to implement project activities. Each Core Team will be chaired by the Director of the Regional Environmental Office responsible for the pilot site. For example, REO 1 for the pilot site in the North; REO 5 for the pilot site in the Central; REO 12 for the pilot site in the Northeast; and REO 14 for the pilot site in the South. The core team will consist of 12-15 members including:

- Directors from other REOs in each regional cluster;
- Officials of related units within the focal REO;
- Provincial or Regional representatives from line agencies related to the pilot site;
- Representatives of Local Government Organisations (LGOs);
- Representatives of CBOs;
- Representative of CSOs/NGOS;
- Representative of local academic institutions

152. **The Field Coordinator** will be appointed in each pilot site to support the core team and ensure coordination and effective liaison between the PMU and site level, as well as coordination amongst key stakeholders at site levels.

153. **The Project Assurance:** The Project Assurance function will be performed by UNDP. The function supports the Project Board by carrying out objective and independent project oversight and monitoring. The role ensures appropriate project management milestones are met. Project Assurance must be independent of the Project Manager. Therefore, the Project Board cannot delegate any of its assurance responsibilities to the Project Director or the Project Manager. UNDP CO Thailand will be responsible for Project oversight, ensuring milestones are achieved. It will undertake financial and technical monitoring, as part of its oversight functions. In addition, the UNDP will be responsible for:

1. coordinating with UN Country Team in Thailand with a view to mainstreaming in their interventions at the country level and funding as appropriate;
2. establishing an effective network between project stakeholders, specialized international organizations and the donor community;
3. facilitating networking among the country-wide stakeholders;
4. reviewing and making recommendations for reports produced under the project; and
5. establishing and endorsing the thematic areas, with a view to ensuring linkage to national policy goals, relevance, effectiveness and impartiality of the decision making process.

4.2 Audit arrangements

154. Audit will be conducted in accordance with the UNDP NIM Audit policies and procedures and based on the UN Harmonised Approach to Cash Transfer (HACT) policy framework. Annual audit of the financial statements relating to the status of UNDP (including GEF) funds will be undertaken according to procedures set out in the Programming and Finance manuals. The Audit will be conducted by a certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the Project Implementing Partner. UNDP and the project Implementing Partner will provide audit management responses and the Project Manager and project support team will address audit recommendations. As a part of its oversight function, UNDP will conduct audit spot checks at least two times a year.

4.3 Logos

155. To accord acknowledgement to UNDP and GEF for providing funding, MONRE, GEF and UNDP logos will be used on all relevant project publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord acknowledgment to GEF and co-financing organizations.

4.4 Intellectual property rights

156. These will be retained by the employing organization of personnel who develop intellectual products, either Government or UN/UNDP in accordance with respective national and UN/UNDP policies and procedures.

SECTION 5: MONITORING FRAMEWORK & EVALUATION

157. Project monitoring and evaluation (M&E) will be conducted in accordance with established UNDP and GEF procedures. The project's Strategic Results Framework provides performance and *impact* indicators for project implementation along with their corresponding *means of verification*. The following sections outline the principle components of the M&E Plan and indicative cost estimates related to M&E activities. The following UNDP corporate tools are to be used in project monitoring and evaluation:

- [ERBM](#), which is linked to *ATLAS*
- [UNDP Evaluation Resource Centre](#)

5.1 Project Inception Phase

158. A Project Inception Workshop (IW) will be conducted with the full project team, relevant government counterparts and representatives from pilot sites, co-financing partners, the UNDP-Country Office (CO) and representation from the UNDP-GEF Regional Coordinating Unit, as well as UNDP-GEF (HQs) as appropriate. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goal and objectives, as well as finalize preparation of the project's first annual work plan on the basis of the project's Results Framework. Additionally, the IW will:

- introduce project staff within the UNDP-GEF team who will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit (RCU) staff;
- detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis-à-vis the project team;
- provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Review Report (ARR), as well as mid-term and final evaluations.

159. The IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget re-phasing. The IW will also highlight the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed during the project's implementation phase.

5.2 Monitoring responsibilities and events

160. A detailed schedule of project review meetings will be developed by the project management and incorporated in the ***Inception Report***. This schedule will include:

- tentative time frames for Project Board Meetings, and;
- project related Monitoring and Evaluation activities.

161. Day-to-day monitoring of implementation progress will be the responsibility of the Project Manager based on the project's Annual Work Plan and its indicators. The Project Manager will inform the UNDP-CO and the Project Director of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be implemented. The Project team will fine-tune the progress and performance indicators of the project – both full project and subsets of indicators at the demonstration site levels - in consultation with the full project team. This will occur at the Inception Workshop with support from UNDP-CO and the

UNDP-GEF Regional Coordinating Unit. Specific targets for the first year's implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. Targets and indicators for subsequent years will be redefined annually as part of the internal evaluation and planning processes undertaken by the project team, as necessary and especially as a response to midterm evaluation recommendation (if needed). Measurement of impact indicators related to global biodiversity benefits will occur as per the schedules agreed to at the Inception Workshop, using the GEF BD SO2 Tracking Tool.

162. Periodic Monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the Implementing Partner or more frequently as necessary. This is to help ensure smooth implementation of project activities. To assess project progress first hand, UNDP country office and UNDP-GEF RCUs can visit project field sites as agreed in the project's Inception Report / Annual Work Plan. Any other members of the Project Board can also accompany, as decided by the Executive. A Field Visit Report will be prepared by the CO and circulated to the project team, all PB members, and UNDP-GEF within a month of the visit.

163. Annual Monitoring will occur through the Tripartite Review (TPR). This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to TPR at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The project proponent will prepare an Annual Project Report (APR) as described later in this document. It will be submitted to UNDP-CO and the UNDP-GEF regional office at least two weeks prior to the TPR for review and comments. The APR will be used as one of the basic documents for discussions in the TPR meeting. The project proponent will present the APR to the TPR, highlighting policy issues and recommendations for the consideration of TPR participants. The project proponent also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary.

5.3 Project Reporting

164. The Project Team, in conjunction with the Implementation Agency and UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. The following are required reports:

- **An Inception Report** will be finalized following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan will include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the AWP, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. A section on project establishment progress to date, start-up activities and an update of any changed external conditions that may affect project implementation will

also be included. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the Implementing Agency, UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

- **Quarterly progress reports:** Short reports outlining main achievements in project progress will be provided so that they can be uploaded on UNDP's Enhanced Results Based Management Platform (ERBM) available at <http://home.undp.org>.
- **An Annual Project Report:** will be prepared by the Project Manager and shared with the Project Board. As minimum requirement, the APR shall consist of the ATLAS standard format covering the whole year with updated information for each element as well as a summary of results achieved against pre-defined annual targets at the project level. As such, it can be readily used to spur dialogue with the Project Board and partners. An APR will be prepared on an annual basis prior to the Project Board meeting to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project. The APR should consist of the following sections:
 - (i) project risks and issues;
 - (ii) project progress against pre-defined indicators and targets and
 - (iii) outcome performance.
- **The Project Implementation Review (PIR):** is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. The Project Implementation Report must be completed by the project team. The PIR should be prepared in discussion with the CO and the UNDP/GEF Regional Coordination Unit with the final submission to the UNDP/GEF Headquarters. The project manager, the GEF OFP, UNDP CO and the UNDP-GEF Regional Technical Adviser all have an opportunity to rate the progress towards project Outcomes and Objectives on an annual basis.
- **Project Terminal Report:** During the last three months of the project, the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project and lessons learnt. It will provide the overall summary of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities and necessary improvements. The project proponent is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP-GEF's Regional Coordinating Unit. It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether further action is necessary, particularly in relation to managing sustainable project outcomes and applies lessons learnt so to subsequent projects. . The TPR has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates and a qualitative assessment of output.

165. The following reports may be prepared as identified by the project's results' framework and if needed otherwise:

- **Periodic Thematic Reports:** As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported. These reports can be used as lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports and to allow reasonable a timeframe for their completion by the project team.
- **Technical Reports:** are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports on key areas expected during the course of the Project and tentative due dates. Where necessary, this Reports List will be revised and updated and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports represent the project's substantive contribution to specific areas and will be used to help disseminate relevant information and best practices at local, national and international levels.
- **Success stories:** The project team will work with relevant partners to write and disseminate successful examples of project activities and lessons through websites and other media.

5.4 Independent project evaluations

166. The project will be subjected to at least two independent external evaluations:

- An independent Mid-Term Evaluation (MTE) will be undertaken at the mid-point of the project's lifetime. The Mid-Term Evaluation will determine progress made and will identify course correction, if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation, it will highlight issues requiring decisions and actions and it will present initial lessons learned about project design, implementation and management. Findings will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit. The project team will also update the GEF BD-SO2 Tracking Tool at this stage and also prepare a management response to the MTE.
- An independent Terminal Evaluation (TE) will take place three months prior to the terminal Project Board meeting and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for

follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit. The project team will also update the GEF BD-SO2 Tracking Tool from the mi-term evaluation and also prepare a management response to the TE.

167. The project may undertake additional evaluations as deemed necessary – such as through peer review, community evaluations at site level.

5.5 Learning and knowledge sharing

168. Strong emphasis will be made on learning and knowledge sharing. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums that are organized by the government, donors, NGOs and other partners. In addition, the project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for Senior Personnel working on projects of similar description. UNDP/GEF Regional Unit has established an electronic platform for sharing lessons between the project coordinators. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an ongoing process and the need to communicate such lessons is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting on lessons learned. These lessons will be shared widely throughout MONRE to help develop and initiate ongoing projects and new initiatives. Such a mechanism will include newsletter, websites, technical and general publications. The GEF OFP, relevant government focal points for the UN Convention on Biological Diversity and also the UNFCCC Focal Points will be some of the key persons with whom the project will share progress and lessons learnt.

169. Project Publications will form a key method of consolidating and disseminating the achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project and may take the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

5.6 Monitoring & Evaluation work plan and budget

170. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from the UNDP Regional Coordination Unit (RCU). The Project Results Framework in Annex A provides performance and impact indicators for project implementation along with their corresponding means of verification. These will form the basis of the project's Monitoring and Evaluation system. Indicative work plan and budget is outlined below.

Table 10: Monitoring & Evaluation work plan and budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team Staff time</i>	Time frame
Inception Workshop	<ul style="list-style-type: none"> ▪ Project Management Unit ▪ UNDP CO ▪ UNDP GEF 	10,000	Within first three months of project start up
Inception Report	<ul style="list-style-type: none"> ▪ Project Management Unit ▪ UNDP CO 	4,000	Immediately following IW
Micro-assessment of the implementing partner	<ul style="list-style-type: none"> ▪ Hired third-party assessment 	1,500	During the inception phase
Quarterly progress reports and operational reports	<ul style="list-style-type: none"> ▪ Project Management Unit ▪ UNDP-CO ▪ UNDP-GEF 	10,000	Annually
Annual Progress Report (APR) and Project Implementation Report	<ul style="list-style-type: none"> ▪ Project Management Unit ▪ UNDP-CO ▪ UNDP-GEF 	10,000	Annually
Tripartite Review (TPR)	<ul style="list-style-type: none"> ▪ Government Counterparts ▪ UNDP CO ▪ Project Management Unit ▪ UNDP-GEF Regional Coordinating Unit 	5,000	Every year, upon receipt of APR
Project Board Meetings	<ul style="list-style-type: none"> ▪ Project Management Unit ▪ UNDP CO 	5,000	Following Project IW and subsequently at least twice a year
Mid-term Review	<ul style="list-style-type: none"> ▪ Hired third-party assessment 	25,000	At the end of the second year
Periodic status reports	<ul style="list-style-type: none"> ▪ Project Management Unit 	5000	To be determined by Project team and UNDP CO
Technical reports	<ul style="list-style-type: none"> Project Management Unit ▪ consultants 	10,000	To be determined by Project Team and UNDP-CO
Audit	<ul style="list-style-type: none"> ▪ UNDP-CO ▪ Project team 	\$6,000	Yearly
Final Evaluation	<ul style="list-style-type: none"> ▪ Hired third-party assessment 	25,000	3 months before the project ends.
TOTAL INDICATIVE COST <i>Excluding project team staff time expenses</i>		\$116,500	

SECTION 6: LEGAL CONTEXT

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

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

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

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

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

174. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

SECTION 7: ANNEXES

- ANNEX A:** GEF 4 BD SO 2 Tracking Tool of the 4 Pilot Sites – please see separate Excel file
- ANNEX B:** Capacity Scorecard Assessment Summary of the 4 Pilot Sites
- ANNEX C:** TORs of key project personnel
- ANNEX D:** Co-financing Letters **-Please see separate file**

Annex B: Capacity Assessment Scorecard Summary (4 Pilot Site Regional Environment Office)

Introduction

Each of the four pilot project area Regional Environment Offices (including: REO 1- Mae Sa Catchment Basin in Chiang Mai Province; REO 5 – Tha Chin Catchment Basin in Nakorn Prathom; REO 12 – Lam Sebai Catchment Basin in Ubol Ratchathani; REO 14 – Koh Phangan Catchment Basin, Surat Thani) was provided with an organisational capacity assessment in order to assess and evaluate the relative strengths, weaknesses and gaps in 7 key areas deemed important for the successful management at a site level of this CBFCM pilot project utilising adapted PES and biocarbon financing schemes for sustainable community forest and catchment management, climate change mitigation and biodiversity conservation. The assessment questions are focused around seven important organisational capacities, including:

1. Organisational skills (technical, programme/project management skills, political skills, policy formulation skills)
2. Project Management (planning and coordinating action)
3. Stakeholder Engagement and Communication
4. Social Equity and Equality
5. Human Resource Management
6. Training and Capacity Building
7. Monitoring and Evaluation Capacity

Methodology

Information for the PES organisation Capacity Assessment was done through a combination of ‘face-to-face’ interviews with the Directors of each of the four REOs as well as having each REO fill out the sections themselves that were not covered in the interview due to time constraints.

A scoring system for each item was developed and was subjectively based on the judgement of the individual interviewer/evaluator and the REOs themselves. For each numbered parameter below, a score was assigned ranging from 0 – 5, with 5 being the highest or best score.

0 = no evidence of capacity, or clear evidence of negative capacity

1 = Minimal, poorly developed, insufficient

2 = Modest, relatively undeveloped, probably insufficient

3 = Passable, under development, moving in the right direction

4 = Very good, relatively well developed, clearly visible

5 = Excellent, highly developed, well integrated

N/R = Not relevant to this organisation or stakeholder in their role or responsibility with this PES project

N/A = Not able to make a determination

In the end, not all items received a score and there were not explanatory remarks provided for each item that was scored. Thus, analysis and interpretation of the results is not perfect, but should be fairly close. An analysis of the evaluation results as a whole (4 REOs together) was made for each of the seven sections.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
1. Organisational Skill-base	1.1 Technical Skill base	What technical skills is your REO team most strong in? Rate your team in the following areas:				These technical works are under REO5 responsibility, except for taxonomy and biodiversity that we are not directly responsible for, thus we are not expert in these 2 skills but we have staff who have some education background in this regards. about it.				
		Forest / Plant / Animal / Insect taxonomy	0		2		2		3	
		Resources Management (e.g. forest, watershed, coastal)	0		3		3		4	
		Water Quality monitoring	5		5		5		5	
		Global Information Systems (GIS) & Mapping	3		5		5		4	
		Ecological and biodiversity monitoring	1		2		3		3	
		Policy Analysis and Formulation	4		4		5		4	
		Systems Dynamics and Modelling	1		1		2		N/A	
		Information Technology (IT) – Computer	5		5		4		4	
		Statistical Analysis	3		4		5		4	
		Indicator Development / Monitoring & Evaluation	3		4		4		4	
		Avg. Score								
		What technical skills are you most lacking or not so strong at that you feel are needed by your team to effectively implement and monitor/evaluation this PES project?				Ecosystem services valuation		Valuation of Ecosystem Services		<ul style="list-style-type: none"> - Systems dynamic and Systems mapping skill - Simple Indicator development with community participation - Biodiversity assessment - Ecosystem services valuation
1.1 Capacity Analysis and Interpretation: Organisational Technical Skills										

In the area of organizational technical skill base, which will be important for the success of the CBFCM pilot project using PES/biocarbon financing schemes, all of the four responsible REOs are currently strongest in the areas of policy formulation and analysis, IT and statistical analysis and in the areas of ‘brown issue’ monitoring and evaluation (i.e. water, air and soil environmental quality monitoring and analysis). For the ‘green’ technical areas all four REOs are much less strong; including in the areas of forest / plant / animal / insect taxonomy and ecological and biodiversity monitoring. None of the four REOs has experience in the use of Systems Dynamics and modelling, though there is varying degrees of knowledge and experience among the four REOs with regards to GIS, statistical analysis and overall resource management. For the success of the project, the REOs themselves will need to partner with institutions that have the expertise in ecological and biological systems analysis, monitoring and evaluation as much of the success of using PES/biocarbon financing mechanisms for forests catchment management and biodiversity conservation will rest on the ability to recommend the appropriate land-use practices for ensuring the continued integrity of the respective ecosystems and ecosystem services. There will also need to be capacity building training for all four REOs and their key project partners on resource management practices, as well as training on the concept and practice of CBFCM and PES/biocarbon financing (A-Z), and possibly some systems thinking and systems dynamics training.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
1. Organisational Skill-base	1.2 Programme /Project Management Related Skills	What Programme/project related skills is your REO team most strong in? Rate your team in the following areas:				REO5 is very experience in Project planning and project management, especially in working with stakeholders in the area. We do not often play the role for mediation, negotiation and conflict resolution, only work on checking for facts since our main role				
		Project Organisation and Coordination	5		5		5	5		
		Mobilisation of Resources (financial & material)	3		5		4	3		
		Project Planning and Strategy Development	4		5		4	5		
		Information gathering & research (from internet & other sources)	5		5		4	4		
		Stakeholder engagement and communication	4		5		4	3		

	Conflict resolution	5		3	is focused on pollution control in relation to the environmental laws	5		3	
	Negotiation / mediation	4		3		5		3	
	Economic valuation & contracts	3		3		4		1	
	Facilitation & Training	5		5		5		4	
	Field Monitoring & Evaluation	4		4		3		4	

1.2 Capacity Analysis and Interpretation: Organisational Programme/Project Management Skills

There are again, differences in the various aspects of programme and project management skills between the four project REOs. With regards to Programme and Project management skills, the skills most lacking are in the area of conflict resolution, mediation and contract negotiation. Also, from answers to questions regarding engagement and management of external (e.g. community) stakeholders, there is probably a need for some indepth training on stakeholder analysis, engagement, communication and management.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
1. Organisational Skill-base	1.3 Political Skills (persuasion, consensus development, effective critique & feedback)	What methods do you use to get different people/groups to support your position?	NA	- We use Win-win solutions - Applying to join the project	NA	Promote the benefit of the project process and outcomes to stakeholders, especially in terms of their wellbeing, livelihoods and overall environmental quality improvement.	NA	Include the participation of all sectors and continually work on building their awareness by REO actions (demonstration through being a role model)	NA	127. Meeting with all partners/ build relationship
		How would you assess your ability to do that?	NA		NA	Assess from comments, suggestions and useful working methodology consistent with problems/issues as well as practical guidelines.	NA		NA	Variety of stakeholder groups joining the network/ their attitude to the REO work and their cooperation level

1.3 Capacity Analysis and Interpretation: Organisational Political Skills

In regards to the “political skills” that are required by an organisation that works closely with communities in the area of pollution control and resource management, all four REOs seemed confident in their capacity and ability in this area. However, from the answers that they provided to the previous sections, it can be assumed that they would all benefit from some training in the areas of stakeholder engagement/management, strategic influencing and mediation and negotiation. REO 5 is likely the strongest of the four REOS in this regards. The political skills will no doubt be very important for this CBFCM project as it is dependent on the introduction, acceptance and implementation of an economic based conservation approach , which basically monetises the services provided by an ecosystem that are currently seen as ‘free’ or by right of existence to provide incentives for adoption of sustainable land-use methods and/or the continuing conservation of forest ecosystems based on traditional cultural values and practices. There certainly be resistors to this concept within the community and possibly from NGOs, and since a PES approach requires a ‘buyer’ (beneficiary of the ecosystem service), political persuasion skills will be of the utmost importance.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
1. Organisational Skill-base	1.4 Capacity to conceptualize, formulate and implement policies, legislations, strategies and programmes	How are programmes and priorities identified for the REOs?	NA	With participation of stakeholders	NA	Based on the severity of the problems and the availability of tools and network of people that makes it able to work effectively.	NA	Projects/ activities related to pollution management are priority for REO12	NA	128. Identify from the level of importance and severity of the problems along with the provincial development plan and strategic plan and MONRE Policy
		What information do you gather to help inform your conservation/resource	NA	-Plan and policy related to environmental laws	NA	We use all relevant information related to Env. Mgmt.	NA	Information about environment system / quantity/quality of	NA	129. -Natural Resources

	management policies, regulations, strategies and programmes?		and regulations as well as the guidance from Government policy -We also use the current status of environmental problems in the area we manage to inform the types of policy, regulation and strategy recommendations we employ		including: Country Policy and Organization policy in different level and with the status of natural resources and env. in the area. Information on the global environment (such as climate change) and how it is changing as well as new knowledge & technology and local wisdom so we can use/adapt for appropriate problem solving.		water/ waste water/ soli waste/ green space and pollution sources. Information about environmental management in community or participation of school, educational institute and local authority.		Situation 130. -Important Environmental Quality Indicators such as Water Quality, Waste water, Air Quality, Solid Waste, Etc.
	What is your track record (history) of successfully formulating and implementing policies, legislations and strategies to achieve your mission? Provide some examples.	NA	- Regional environmental quality management plan. Solved problem at where environment is at risk area such as Mae Kuang Watershed.	NA	-Successful in Promotion and use of Participatory Env. Mgmt. Policy with The Thachin River Network until the network become stronger and can take an active part in monitoring environment and water quality.	NA	-Integrated solid waste mgmt. policy -Solid waste segregation -Promotion of participation of community, school and other organisation -Water quality Monitoring	NA	- Promote Environmental Management activities until its become under financial support of the provincial strategic plan

1.4 Capacity to conceptualize, formulate and implement policies, legislations, strategies and programmes.

From the responses to the questions around policy, regulations and strategy formulation, the four REOs all seem confident in their abilities and experiences in this area and thus this strength will certainly carry over into the CBFCM project using PES and biocarbon financing schemes for sustainable community based forest and catchment management while helping to mitigate carbon emissions and strengthen biodiversity conservation efforts overall. Component 1 of the project is primarily based on the strengthening and harmonising of policy and strategic plans of REOs and PEOs at each pilot area, thus, the capacity for policy formulation and strategic planning is quite crucial to the success of the project throughout.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
2. Project Management (planning and coordinating action towards a goal)	2.1 Tools and Methods for Project Management	What tools or methods does your team or group use to manage your work?	NA	We mostly rely on our key management Indicators	NA	Teamwork with the same goal but divides mission, role and responsibility.	NA	-Participation of all sectors -Practical Action in the field	NA	131. Setting up specific working groups for each issue or project 132. Using the mechanism to monitoring, evaluation and report continually.
	2.2 Work planning and follow-through.	Does your REO office/ team have any trouble getting things done?	NA	Yes, but we were able to solve it.	NA	Yes, but we still able to deal with it.	NA	Limitation of Human Resources	NA	133. Budget mgmt. 134. Limitation of human capacity
		How do you ensure that the 'important stuff' get done in time?			Good planning and be focused.		We have visionary leader, staff who has knowledge, capability,		Always get things done in time	

					responsibility and experiences as well as tools and equipments. Moreover we have network both from government and local people to support.				Director supervision
		How is your team with meeting deadlines?		More than 90% were on time.	More than 90 % on time. Sometimes we are late because our staff were overwhelmed by many missions due to few staff or we have urgent/ unexpected situations to manage first.		Always meet the deadlines		-Following the implementation plan and meets the deadlines.

2.1 Project Management - Tools and Methods for Project Management & 2.2 Work planning and follow-through

None of the four CBFCM pilot project REOs indicated in the assessment that they are using any specific project management tools or frameworks outside of a log-frame approach. The use of activity indicators was stressed as one of the important management tools (Mae Sa and Koh Phangan), though the type of indicators that they are referring to wasn't know (i.e. whether they are using baseline, input, output, outcome, performance and/or impact indicators isn't clear). Like most government organisations that are stretched due to human capacity limitations and workload, all four said that they face difficulty to get things done , but at the same time they expressed strongly that meeting deadlines was not an issue (i.e. can meet deadlines 90% of the time). The leadership from the REO director was emphasised as quite important in project management with regards to prioritising what gets done and when (e.g. expressed strongly by both REO 5 and REO 14).

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
Strategic Area of Support coordinating planning and management	2.3 Track record for delivery on commitments made	How well would you say that your organisation can deliver on your commitments, on the things you say you will do?	5		5	Assess from the result of our work that meet the goal. Also the comment from MoNRE.	5		5	
		How would the other stakeholders that you work with rate you on this?	5		4	Sometimes REO5 can not fulfill everyone's need. We have to consider the project to fit to the situation and our responsibility	5		4	

2.4 Budget, time and personnel management	How many staff do you currently have, and what types of positions do they take (officials, employees),	NA	- 1 Director - 6 Administrators - 4 environmental quality analysts - 6 staff of Env. Planning section - 2 Env. Monitoring staff - 1 IT staff - 2 dissemination and public participation staff	NA	Total staff is 26 - 1 Director - 3 dissemination and public participation - 2 env. IT staff - 3 for planning section - 3 for field monitor - 5 environmental quality analysts - 2 staff of office of the public sector development commission - 7 administrators	NA	Total staff is 25 - 1 Director - 8 general Admin - 3 dissemination and public participation - 3 environmental monitoring - 1 IT - 4 environmental quality analysts - 5 environmental planning	NA	Total staff is 27 - 1 Director - 3 environmental planning - 3 dissemination and public participation - 3 environmental quality monitoring and control - 3 environmental quality analysts - 2 IT - 11 general admin - 1 office of public sector development
	What is your annual budget (during the past 3 years)?	NA	About 8 million Baht	NA	About 10 Million baht	NA	Annual budget was not balance (not enough) to the missions.	NA	136. Fiscal year budget is about 20% less than what is really needed.
	How would you assess your office (team) on basics of mgmt.–e.g. budgeting, time mgmt, personnel review, etc.?	NA	Assessment from the Office of the public sector development commission (OPDC)	NA		NA		NA	137. Not enough budget but able to achieve all indicators
	What indicators are there to show your evaluation?	NA		NA	Indicators include; meet the deadlines, efficiency use of budget and budget mgmt, putting right	NA	REO 12 has got ISO/IEC17025 standard and Excellence award for the organisation who working on conserving	NA	

						man in the right job and effective outcomes.		nature		
<p>2.3 & 2.4 Project Management - Planning and coordinating action towards a goal</p> <p>In regards to the four REOs' track record on delivery of project outcomes, communication, sufficient and efficient use of budgets and staffing, the four REOs scored themselves similarly. The self-assessment scores for track record and perception of this by key stakeholders was rated very high (5 mostly) by all four REOs. Some of the evaluation questions were left un-answered however, which leaves us with additional questions on both efficient use of budgets and on the REOs own capacity for self-assessment and evaluation.</p>										

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
3. Stakeholder Engagement & Communication	3.1 Community Stakeholder Engagement (Strategies and Mechanisms)	How important is engaging community stakeholders and other key actors in the work that you do? Note: These stakeholders may include local government, community leaders, local businesses, NGOs, general public, etc.	5		5	Very Much	4	REO 12 see the important of participation of all stakeholders/ sectors	5	Promote participation in all action steps; planning, Indicators development and budget support
		How do you go about do this? What are your methods and processes for stakeholder engagement?	NA	Through Local/ community leaders, village committees. Also with Family-Temple-School to build their understanding.	NA	We have consultation through different channels such as go and meet them at their organizations, run meeting and various activities for environmental protection. Also communicate to public channels like internet. Using C E P A method	4		5	set up a working group set up meeting

	What strategies and mechanisms do you feel are under utilized by your team to engage and communicate with community stakeholders?	NA	Working with village committee	NA	All Channels above are appropriate but may not cover all target groups.	4		5	Networking and Partnership strategy The use of IT in planning and assessment
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3.1 Stakeholder Engagement and Communication – Strategies and Mechanisms

All four pilot site REOs give the highest score for the importance they see should be given to stakeholder engagement in the work that they do, and use a variety of channels and mechanisms for communicating with and getting feedback from them, including via consultation with community leaders, village committees and through the local temples and schools (via monks and teachers) as well as using different forms of mass media (e.g. Internet, community news, bulletin boards, etc.). Also use CEPA method for engagement and soliciting feedback with community stakeholders. Actual strategy was not clearly articulated, but it is assumed that most use some form of social marketing strategy, though possibly not formally defined.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
3. Stakeholder Engagement & Communication	3.2 Stakeholder Preference	Which stakeholders do you work with most often?	NA	People network	NA	Government sector (central, regional, provincial level) and community network, especially I love Thachin Club (4 provinces) and Network of Natural Resources Conservation volunteer (Village level) in 4 provinces.	4		NA	Local Authority
		Who is yet to be engaged?	NA	Private sector	NA	None	2		NA	None
		What needs to happen to better be in a position to engage them?	NA	Building wider participation and network	NA	Need to have clear plan to build up stakeholders understanding and able to participate effectively to achieve to goal. Use CEPA method	4		NA	Coordinate/ identify mainstays for consultation/ building trust/ serious in action and working at the real problems of the community

3.3 Engage people and develop trust relationships	How important is trust in your working relationships (internally and external)?	NA	Important so we can work smoothly and effectively	NA	It helps to reduce problem and obstacle that might be happen during the project implementation so we can complete the task smoothly and effectively.	5	This is the most important factor for REO12 to promote cooperation and collaboration	5	This is very important to indicate the successfulness of our work
	How do you go about building trust, especially with community stakeholders, and sustain it?		Sincere, be frank and transparent		In form all project progress to stakeholders, meeting and consultation, sharing opinion continuously. (Transparency and Accountability)	4	Be a good role model, continually develop technical capabilities to be accepted by all sectors.	4	Running activities together regularly such as Merit Making Ceremony at the office, provide space for elder meeting at REO office, regularly tracking the network's activities, etc.

3.2 & 3.3 Stakeholder Engagement and Communication – Stakeholder Preference & development of trust-based relationships

In regards to stakeholder preference, each REO had some slight differences here, with REO 5 and REO 1 strongly emphasizing working with community networks, whereas, REO 14 emphasized their preference for working mostly with the local authority. This is most likely due to the fact that the island is primarily a foreign tourist destination and many of the workers are from Myanmar. REO 12 did not answer this question, but from our site visit we assume that they work most closely with the community forest networks. All four stressed the need to widen their stakeholder process and to continue to build on levels of trust and understanding so as to work more effectively towards their mission goals.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
4. Social Equity & Equality	4.1 Social Equity & Equality Mechanisms	What policy and/or mechanisms do you have to ensure that different socio-economic groups receive what they need, according to their capacity and needs?	NA	Provide space and opportunities for people to reflect their thoughts often through meetings	NA	Listen to all sectors. We are responsible to our work and society (Governance)	3	Enhance level of participation by different groups in the community.	4	Development of the social negative impacts indicator due to the action of REO
		How do you ensure that different socio-economic groups are involved and/or participate in the programmes	NA	Do survey in the field, facts finding, especially with youths and children.	NA	Before we implement any project, we have to find out what is the	N/A		4	Analyze and develop stakeholder list, invite them to participate in the

		and projects that you conduct?				situation from many aspects (360 degrees) and invite all stakeholder groups (small & big) to listen and dialogue. Use CEPA method.				project and cooperate continuously
		How do you monitor and evaluate the effectiveness of these policies and mechanisms?	NA	Evaluate from satisfaction level of the target group	NA	Evaluate from opinions/comments from every group in the area	N/A		4	Feedback from participants and questionnaire
	4.2 Gender Equity & Equality Mechanisms	What policy and/or mechanisms do you have to ensure that women are involved at the same level as men in different leadership positions and as beneficiaries of programme / projects outcome, outputs and impacts?	NA		NA	Impartially listen to all sectors, gender and ages.	N/A		4	This is one aspect under the analytical and mgmt. of social negative impacts indicator because our org. see the important of Gender Equity and Equality
		How do you ensure that women are involved and/or participate in the programmes and projects that you conduct (at the same level as men)?	NA	Set up working group that has woman take part in the group.	NA	All sectors in the area under REO5 responsibility never thought that gender is effect to the work. Man and woman has equal responsibility & role in env. mgmt.	N/A		3	Considering gender issue when set up the condition to participate. Set up ratio of woman/man participate in the project.
		How do you monitor and evaluate effectiveness of these policies/mechanisms?		Ratio of man per woman in working group		From opinions of all sectors in the area	N/A		4	From their participation
4.1 Social Equity & Equality										
None of the REOs stated that they have any specific policy in place to ensure that their projects work towards meeting any requirement based on equity within different socio-economic aspects such as gender, age or disadvantaged peoples. They did stressed in their answers to the question about ensuring that different groups were recognised and their needs addressed with REO led projects that they thought about this in their stakeholder engagement processes, and Koh Phangan mentioned the use of indicators to measure their										

effectiveness in this regards. The ways in which they monitored the effectiveness of their methods/approaches to stakeholder inclusivity and equity was primarily through the use of opinion surveys, though it is hard to know how accurate and wide-spread (in terms of socio-economic demographics) the survey is disseminated. REO 14 uses participation levels to rate their equity balance. It was noticed on the site visits to both Mae Sa and Lam Sebai that the representatives of the community were primarily men. REO 5 (Tha Chin River and watershed) appears to have the most gender balanced programmes and stakeholder representation if seems.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
5. Human Resource management	5.1 Recruiting / Mobilising community stakeholders to participate (be involved)	How important is organising/engaging community stakeholders and other key actors in the work that you do?	NA	Important for achieving the goal	NA	Important to the effectiveness of the work because we then can find people who have the relevant knowledge & skills to work on the specific task.	N/A		3	Important in terms of project support
		How do you go about doing this?	NA	Measure from satisfaction level	NA	Collect info, interview local people and listen to suggestions from all sectors	N/A		3	Stakeholder analysis and interested group establishment
		How do you assess your success at doing that?	NA		NA	All related stakeholders participate from start to end.	N/A		3	We maintain a list of stakeholders in the network and there is periodic communication with them.
	5.2 Motivation & Recognition	How do you motivate others to engage and work passionately to accomplish goals and objectives?	NA	Seeking the common ground/interest and work from there.	NA	See the importance of everyone who participates. Everyone is the owner of the project area and they all share ownership.	5		3	Having a good relationship with and respect for all stakeholders

		What types of 'recognition' programmes do you have to reward people for their efforts and good work?	NA	Announce to the public Give away certificates	NA	Promote to the public. This is the way to reward people who do the good work and to promote awareness to others by good role model at the same time.	5		3	Praise in the meeting or to the public, Awarding
<p>5.1 & 5.2 Human Resource management - Recruiting / Mobilising community stakeholders & Motivation & Recognition Again, all four REOs agree on the need to include stakeholders' opinions and ideas in their project approach to ensure both ownership and successful outcomes. Seeking common ground, fully inclusive participation, sense of ownership in the process and outcomes and general emphasis on relationship building were the approaches stress by the four REOs to get community stakeholders to work passionately towards project goals. As this CBFCM project using PES/biocarbon financing will be quite a different approach than what has been employed in the past, it will certainly require</p>										
	5.3 Facilitating Cooperation & Teamwork	How do you facilitate teamwork and cooperation among staff and other partners?	NA	Respect and accept different point of view of each other	NA	At the beginning build understanding about the project for all the staff in the project team. Divide up clear role & responsibilities to staff which match to their knowledge & skill strengths. Monitor & evaluate regularly to identify places to improve to be more effective.	3	Enhance relationship by providing opportunities, activities for them to have chances to join/work together such as sport day, Celebration in some events.	3	Set up working group and role of each one. Coordinate with mainstays to build up the network
<p>5.3 Human Resource management – Facilitating Cooperation and Teamwork Teamwork will be a crucial element of each the four CBFCM PES/biocarbon financing pilot project REOs, both internally and with outside partners such as the PMU, MoNRE M & E office, project consultants and any other outside partners such as NGOs and universities. Teamwork is an easy word to say and in an organisational self-assessment such as this, it is usually difficult for a team to accurately evaluate their strengths and weaknesses. However, in the answers provided for this question about how they each facilitate good teamwork and cooperation, each of the REOs provided a glimpse into what they see is most important, including: 1) respect and acceptance of different views and perspectives; 2) building mutual understanding of the project process, approach and outcomes with internal project team members; 3) having clearly established roles and responsibilities based on a strengths model; 4) regular monitoring and evaluation; 5) creating opportunities for relationship building among the different team members and partners; and 6) celebrating success.</p>										

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
6. Training & Capacity Building	6.1 Internal Training and Capacity Building	How often to you conduct in-house training for your staff?	NA	Depend on need and opportunity; not regularly scheduled for	4		5	Sometimes in conjunction with our monthly meeting	3	3 to 4 times a year
		What types of trainings do you provide in-house?	NA	Administration and practical knowledge and skills for field work	NA	Cover all aspects of REO5 responsibility such as Water testing, Project analysis and planning, environmental management strategic planning, environmental IT and etc.	5	Develop in various aspects of working process	NA	PMQA Vermicomposting Carbon Footprint Integrated Solid Waste Mgmt.
		How often does your staff attend outside training and professional development opportunities?	NA	Depend on need and opportunity	5		4	Regularly, every month	NA	Depend on the budget, usually it's not more than 2 times a year
		What types of training courses would this include?	NA	Administration and practical knowledge and skills for field work	NA	Training topic are identified regarding REO5's mission. What we have provided in the past are about strategic planning, environmental management planning, The art of facilitator and etc.	5	Management and environment aspects	NA	Env. Quality Monitoring Strategic Planning Eco-tourism Mediation and negotiation

		How do you monitor the effectiveness of such training?	NA	Evaluate from their working capacity	NA	Monitor and evaluate the development of staff knowledge and ability to run their task effectively as well as their creativity to improve the working process and outcome.	4	Through their reports and ability to transfer knowledge to others staff.		-Training/ workshop report, able to implement knowledge and experience from the training to specific task and able to transfer their knowledge to others in the sharing platform in the office.
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6.1 Training & Capacity Building - Internal Training and Capacity Building

This question looks at the importance and approach to internal capacity building training within the four REOs themselves. From the responses to the five questions, each REO considers that professional development in both knowledge and skill areas for their staff is an important element of success in their work. There are listed a range of topics which are relevant to the current global challenges and also new methods and system frameworks and tools, such as carbon footprint accounting. This indicates that the REO teams have a fairly good baseline capacity in relation to key knowledge and skill areas that will be required in managing the CBFCEM PES/biocarbon financing project. What seems to be missing, or not communicated in the assessment answers very well is in regards to how each REO monitors and evaluates the effectiveness of their internal and staff professional development training. All four REOs use only what seems as a qualitative method of work observation, but they do not explicitly indicate that they use Key Performance type indicators to also evaluate the effectiveness of training. As highlighted in Question 1 regarding organisational skills (both technical and soft), there are areas that each REO will need to quickly build the capacity of their staff on so as to successfully run and manage this project.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
6. Training & Capacity Building	6.2 External Training and Capacity Building (for the community stakeholders)	How often to you conduct training programmes for your community stakeholders?	NA	Depend on opportunity	4		3	Every month	2	
		What types of trainings have you provided for the community?	NA	Environmental Management training	NA	Environmental Management including such topics as: Water Quality Management, Water testing and monitoring, solid waste mgmt, Climate Change mitigation, etc.	4	Environmental Management	NA	Regional Env. Planning Env. Quality Monitoring \Simple Water Quality Tasting/ Monitoring Solid waste mgmt/garbage segregation

		Does your team have a specific training and facilitation expert or team?	NA	Yes, we have	3		5	Yes	4	
		How do you monitor the effectiveness of such training?	NA	See if the participants bring what they've learned to their practice or not.	NA	Measure from the percentage of trainees who bring it to implement.	5	This is directly under REO12 mission, we do it best.	NA	Training/workshop Evaluation Assess from knowledge an action
<p>Training & Capacity Building - External Training and Capacity Building (for the community stakeholders)</p> <p>This series of questions assesses the level and types of training and capacity building that each REO provides for the community stakeholders, in addition to looking at the training expertise of each REO and how they go about monitoring the effectiveness of their community training programmes. The answers provided do not provide a very clear picture on the frequency of such trainings, though REO 12 indicated that the training for community takes place quite often; i.e. at least once a month. Regarding the training and capacity building topics, they have, up to now, focused more on the brown issues such as waste management and water quality monitoring. REO 5 indicated that climate change mitigation training has also been conducted for their community stakeholders. For the CBFCM pilot project, there is a big need for training for the community networks and land-users on topics ranging from general climate change, to PES/biocarbon financing, monitoring and evaluation methods, sustainable land-use practices, etc. Thus, it is important that each REO have an increased capacity themselves, even if some of the training programmes will be outsourced to external consultants and organisations and institutions.</p>										

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
7. Programme / Project Monitoring & Evaluation Capacity	7.1 Quantitative baseline and impact indicators)	What type of baseline data do you currently have for the PES candidate site?	5	We only have basic information about this watershed which we've got from the internet because we do not have any specific project in this area	NA	Cover all aspects of Ecosystem	5	Water Quality Solid waste Regional Env. Mgmt.	NA	Sea water Quality Monitoring (around tourism beaches) Land and forest Info. Marine and coastal resources Info Biodiversity (plants/animals) Conservation Activities
		How often is it updated or field checked?	5		NA	Every year because we have to report	5	Every Year	NA	1 to 2 times a year

						the Env. and Natural Resources Status every year.				
		What do you currently use this baseline data for?	NA		NA	Use for planning to solve the problem both in local and country level through various mechanism such as National Economic and Social Advisory Council, Committee on Natural Resources and Env., Council of Ministers Disseminate to related org. so they can use it for project planning	4		NA	Planning an building people awareness

7. Programme / Project Monitoring & Evaluation Capacity - Quantitative baseline and impact indicators

A good amount of up-to-date and accurate baseline data on forest cover, biodiversity levels (especially of keystone species), estimated carbon stock and quality of various ecosystem services (such as water quality and quantity, micro-climate patterns, forest fire frequency, etc.), will be essential for this CBFCM project to proceed successfully over the four year period. The first year, or project inception period, will be focused on the collection and management of various types of baseline data. The more that currently exist, and the data base management system used are indeed important elements in the success of the project in each region and also in the relative speed that PES and/or biocarbon financing agreements can be negotiated. From the assessment, it appears that REO 5 and REO 14 have the prerequisite baseline data required, though the specifics are not known and whether it will be of the kinds required by the project. REO 1 has the least with REO 12 having mostly brown issue type data. In terms of data management, all REOs are required to send reports to the M & E office of MoNRE and ONEP annually, so the date that they do have is current and their data management systems should all be working well and also aligned systemically with the national databases of M&E and ONEP. It also appears from the answers provided on how REOs use the data they have, that REO 5 maybe is in the best position for this.

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
g & Monitoring	Management	How strong is your organisation (team) in the area of date / information /	5	Very Strong Information are stored in from of	4	Strong	4		4	Strong Product as publish document, Annual

		<p>knowledge management? ___ Very strong ___ Strong ___ Medium strength ___ Low strength</p>		<p>excel spreadsheet, Microsoft access and pdf files. Some baseline data are share on the REO1 website. All staff are able to access this information. Environmental IT group is responsible for the overall mgmt of information and database.</p>						<p>Report, Env.Quality Report and Website www.reo14.go.th Info. can be accessed via website, or requested letter to the office</p>
		<p>Explanation / elaboration of above answers.</p>								
		<p>Describe your current data/ information / knowledge management system and how it works.</p>				<p>All information is easily access</p>				
					<p>Both computer and paper-based. Computer-based, store in form of database such as Quarterly Water Quality info.Sources of pollution, etc. Paper-based, each section take care to collect info. of their work For Computer-based system we have a specific person to look after the system to protect the error that might happen.</p>		<p>IT system</p>			<p>Hard copies of info. is kept in the library. Also keep in electronic files. IT sector responsible for this task</p>
<p>7.2 Programme / Project Monitoring & Evaluation Capacity – Data Information Management As explained in the analysis of Question 7.1, each of the four REO already have fairly strong data management systems in place due to their reporting requirement and responsibilities under MoNRE.</p>										

Strategic Area of Support	Aspect	Interview Questions	Score (0-5)	Mae Sa REO 1	Score (0-5)	Tha-Chin REO 5	Score (0-5)	Lam Sebai REO 12	Score (0-5)	Koh Phangan REO 14
7. Programme / Project Monitoring & Evaluation Capacity	7.3 Use of Indicators in strategic planning and reflection	How does your office gauge whether its programme strategies have succeeded or failed?	NA	Measure from the achievement of tasks/missions	NA	Assess from the successfulness of problem solving	5	REO 12 able to meet all indicators designated by MoNRE	NA	Appropriate budget received regarding the strategic planning.
		How do you use indicators / metrics in evaluating or adjusting your programme or project strategy?	NA	We us for statistical method / analysis	NA	All activities we run have a set of indicators assigned; For the case of any mistake or in the case that we can't meet the indicator targets, we will have a meeting to find the solution.	5	N/A	NA	Using descriptive qualitative indicators: by asking stakeholders to brainstorm their opinions to the Environmental Quality Management plan
	7.4 Field Monitoring and Evaluation	Rate your team according to their ability to collect accurate field data in relation to following areas: (low,medium,high)								
		- Forestry (e.g. forest cover)	0		Low		2		2	
		-Biodiversity (diversity and richness)	0		Low		2		3	
-Water Quality & Quantity	5		Low		5		5			

		-Air quality	3		Med		5		4	
		-Social equity & equality	4		High		4		3	
		-Community financial and economic data (household income, wages, expenses, etc)	4		Low		4		3	
		-Other social data (livelihood, wellbeing, cohesion, participation, etc.)	5		Med		4		4	
7. Programme / Project Monitoring & Evaluation Capacity	7.4 Field Monitoring and Evaluation (con't)	What would be the area most needed with respect to further training and capacity building for your team (and other partners) in relation to M&E for this PES project?	NA	About forest, biodiversity and ecosystem service valuation (Economic valuation)	NA	Biodiversity and Ecosystem service Valuation	NA	Effective use of the PES Scheme	NA	Integrated planning and Policy dev. Community Org. Network dev. Watershed & Natural Resources conflict mediation & resolution Project Monitoring and Evaluation Env. Economics and its application Simple Indicator Dev. with Community Participation Biodiversity assessment
	7.5 Community involvement in	How do you currently (and in the past) involve community members, school students, NGOs, etc in programme and project monitoring and evaluation?		None		None	4	Supported by DEQP and others organisations		Lesson Learnt Summary Meeting Questionnaire to stakeholders
		What types of training and capacity building with regards to M & E does this group need to effectively participate in this PES		Ecosystem service valuation (Economic valuation)		Project Monitoring and Evaluation because they will be people who benefit from this project. If	3	Promote understanding about compensation in PES Scheme		Training in BAR, DAR and AAR Technique (Before, During and After Action Review)

		project?				they have well understanding about the monitoring process and technic so they able to use it right (also in good way)				Simple Indicators M&E tools and methodology with community participation
<p>7.3, 7.4, 7.5 Programme / Project Monitoring & Evaluation Capacity - Use of Indicators in strategic planning and reflection; Field Monitoring and Evaluation; Community involvement in Monitoring & Evaluation</p> <p>This series of questions is focused on various aspects of monitoring and evaluation capacity of the pilot area REOs as they will be responsible for monitoring PES impacts in relation to ecosystem services as well as providing guidance and assurance/verification of M & E provided by community forest catchment networks themselves or by other partners for pilot site-related PES and/or bio carbon financing schemes. For this CBFCM project the M & E component will be essential to its success since PES agreements can only be made upon negotiated agreements between land users (ecosystem service sellers) and beneficiaries (buyers of ecosystem service provision) that will be sustained based on transparency, accountability and trust, like in any business arrangement. an appropriate, timely and reliable (i.e. trusted by the PES/ biocarbon stakeholders) Without a good M & E programme the project will undoubtedly fail.</p> <p>All four REOs presently use indicators for assessment of programme or project impacts and effectiveness. Most of these indicators come down from MONRE. However, in terms of developing their own indicators there seems, from the answers provided above, that they have must less experience and capacity. It is interesting to note that none of the four REOs currently involve community members, school students, NGOs, etc in programme and project monitoring and evaluation. From the PES literature, experience shows that creating a capacity amongst the land-users/ ES sellers themselves is needed in order to both reduce costs (often referred to as transaction costs) and also to sustain trust in the agreement through a cooperative effort. This also will reduce the ‘free rider’ tendency among some community members if the PES agreement is between a group or network and a buyer, whereby each member of the network must adopt and maintain land use practices that ensure the integrity and quality of ecosystem services. The assessment points out the need for some training and guidance to the REOs on the development of biodiversity, ecosystem service and socio-economic livelihood indicators and in facilitating the collaboration and cooperation of community members in the M & E activities.</p>										

Annex C: TORs of key project personnel

Project Manager

- Assume primary responsibility for daily project management , including: communication and maintenance of good relations with all project stakeholders, budgeting, planning and general monitoring of the project;
- Develop and implement a project communication strategy, in order to facilitate effective and constructive communication between different project stakeholders and adequate understanding of the objectives, strategies and advances of the project stakeholders at all levels;
- Coordinate closely with an maintain regular contact with UNDP Country Office , MONRE Project Director and REO project area Directors on project implementation issues of their respective competence;
- Review of quarterly work plans, expenditure reports and disbursement requests prepared by contractors, and recommendation to UNDP regarding their approval or, where necessary, modification prior to approval;
- Provide on-going supervision of and support to the Project Technical Team in the preparation of Annual Work Plans and Budgets (AWPBs) and review of the AWPBs prior to their presentation to the Project Board for approval, in order to ensure their feasibility, relevance, correspondence with project resource availability and the harmonization of the activities proposed under each component ;
- Drafting of TOR's for contractual services (companies and institutions) and all outsourced activities;
- Assume overall responsibility for the proper handling of logistics related to project workshops and events;
- Prepare necessary GEF project progress reports, as well as any other reports requested by the Executing Agency and UNDP;
- Monitor the expenditures, commitments and balance of funds under the project budget lines, and draft project budget revisions;
- Assume overall responsibility for reporting on project progress vis-à-vis indicators in the log-frame;

Project Assistant on Admin and Finance

- Provide general administrative support to ensure the smooth running of the project management unit (PMU);
- Under supervision of Project Manager, be responsible for all aspects of project financial management, including organizing the control of budget expenditures by preparing payment documents, maintaining the project's disbursement ledger and journal, and compiling financial reports etc.;
- Control the usage of non-expendable equipment (record keeping, drawing up regular inventories);
- Organize and coordinate the procurement of services and goods under the project.
- Keep regular contact with four project Field Coordinators project experts and consultants to inform them about the project details and changes;
- Keep files with project documents, expert reports;
- Coordinate projects logistics related to central project workshops and events with all relevant stakeholders, contractual services, etc.;
- Project logistical support to the Project Manager, Field Coordinators and project consultants in

<p>conducting different project activities (trainings, workshops, stakeholder consultations, arrangements of study tour, etc.), including arrangement of duty travel;</p> <ul style="list-style-type: none"> • During the visits of foreign experts, bear the responsibility for their visa support, transportation, hotel accommodation etc.; • Provide English translation as required; • Draft correspondence and documents; finalize correspondence of administrative nature; edit reports and other documents for correctness of form and content; • Act on telephone inquiries, fax, post and e-mail transmissions, and co-ordinate appointments; • Perform any other administrative/financial duties as requested by the Project Manager;
<p>Monitoring & Evaluation Expert (local)</p> <ul style="list-style-type: none"> • The role of the national project evaluation consultant(s) will be to participate, alongside with the international consultants, in the mid-term and final evaluation of the project, in order to assess the project progress, achievement of results and impacts. • In collaboration with the international M&E Expert, the local project evaluation specialist will develop a draft evaluation report, discuss it with the project team, PMU and UNDP, and as necessary participate in discussions to realign the project time-table/log-frame at the mid-term stage. The standard UNDP/GEF project evaluation TOR will be used.
<p>Evaluation Expert (M & E)</p> <ul style="list-style-type: none"> • The international evaluation consultant will lead the mid-term and the final evaluations. He/she will work with the local evaluation consultant in order to assess the project progress, achievement of results and • In collaboration with the local M&E specialist, the international project evaluation expert will develop a draft evaluation report, discuss it with the project team, PMU and UNDP, and as necessary participate in discussions to realign the project time-table/log-frame at the mid-term stage. The standard UNDP/GEF project evaluation TOR will be used.
<p>Environmental Economics Expert</p> <p>The responsibilities of the Environmental Economists Expert will consist of the following:</p> <ul style="list-style-type: none"> • Work together with the institutional policy and legal expert in the first year to conduct an extensive baseline assessment and gap analysis on Thailand's forestry and land-use laws and policies from the key line ministries for inclusion of provisions in support of CBFM/PES/bio-carbon financing. • Be responsible for delivering PES/biocarbon financing related seminars and on-going consultative process with national and regional government agencies over the 4 year project cycle. • Advise PMU, Technical team, and Core Team on all aspects of PES and bio-carbon financing and assume principle responsibility for the following tasks: • Conduct economic valuation of use, indirect-use and non-use values of natural resources within the project site; • Conduct an economic analysis of the current revenues from natural resources; • Use results from economic valuation and derived revenue of natural resources as the basis for determining the appropriate value of compensation and/or reward for service providers; • Estimate transaction costs for implementing PES projects in each of the project Pilot Sites; • Analyse the costs and benefits of PES to determine the trade-offs and opportunity costs of different land use options. • Conduct analysis to assess changes in level of income of service providers before becoming

involved and after.

- Analyses factors that contribute to income changes to net out changes that are primarily attributed to rewards/and or compensation under PES projects.
- Together with forestry expert analyse potential income that can be derived from sales of carbon credit and the fluctuation of potential revenue as a result of changes in carbon credit prices in the international markets.
- Review and identify potential markets for ecosystems services other than carbon such as biobanking, biodiversity off-sets.

Environmental Policy and Institutional Expert

The responsibilities of the Environmental Policy and Institutional Expert will consist of the following:

- Work together with the environmental economics and legal experts in the first year to conduct an extensive baseline assessment and gap analysis on Thailand’s forestry and watershed regulations and policies from the key line ministries for inclusion of provisions in support of CBFM/PES/bio-carbon financing.
- Be responsible for delivering CBFM/PES/Biocarbon Reduction Policy related seminars and on-going consultative process with national and regional government agencies over the 4 year project cycle
- Review institutional set-up supportive to the operationalization of the PES projects from PES experiences, identify and analyse aspects that might be relevant to initiation of PES activities in Thailand.
- Specific to the Pilot sites, the Environmental Policy and Institutional Expert should provide insights into institutional issues from the local, to regional and national levels which will support the work of the Legal Expert in drafting the PES contracts.
- Drawing on the experiences and lessons from the implementing PES projects in the Pilot Sites and to improve the operationality and fairness to the concerned parties, the Environmental Policy and Institutional Expert should provide inputs to support the Legal Expert on aspects of the contract between parties that should be revised.
- Based on information from (1) and with lessons learnt from the implementation of Pilot Sites, the Environmental Policy and Institutional Expert should develop guidelines on institutional components of the PES Project that can be used as standard reference in the event that PES projects are initiated in other parts of the country

Legal Expert

The responsibilities of the Environmental Policy and Institutional Expert will consist of the following:

- Work together with the environmental economics and environmental policy experts in the first year to conduct an extensive baseline assessment and gap analysis on Thailand’s forestry and land-use laws and policies from the key line ministries for inclusion of provisions in support of CBFM/PES/bio-carbon financing.
- Be responsible for delivering legal/policy related seminars and on-going consultative process with national and regional government agencies over the 4 year project cycle;
- Review legal issues regarding the contractual arrangements between ‘Service Providers’ and ‘Buyers’ from PES projects, including the involvement of third parties which could be public agencies with direct mandate to the site, Local authorities and local NGOs. The reviews should aim at extracting valuable lessons on specific aspects of the contract such as

enforcement, liabilities, delivery of services, payments and terms of payment, breach of contract, penalties, termination and amendments, etc.;

- With inputs from the Environmental Economist and Environmental Policy and Institutional Expert, the Legal Expert should review and advise on aspects of the contract between parties that should be revised to improve the operationality and fairness to the concerned parties.
- Based on information from (1) and with lessons learnt from the implementation of Pilot Sites, the Legal Expert should develop guidelines that can be used as standard reference for drafting PES contracts

Specific to the project pilot sites, the role of the Legal Expert should be:

- Advise on how such legal and institutional conditions can be resolved. This is due to the reason that two of the PES Pilot sites (Mae Sa and Koh Phangan) are located in Protected Areas where there are certain restrictions over access and use of natural resources, the Legal Expert.
- Draft and finalize contracts that will be used as the basis of agreement between 'Service Providers' and 'Buyers' for PES Pilot Sites.

Field Coordinators (4, one for each of the project pilot areas)

- The Field Coordinators will be the primary liaison between the CBFCM project communities/PES agreement beneficiaries (ES buyers) and the PMU project and will be responsible for facilitating field implementation of all technical support with pilot site communities.
- Work with other members of the PMU, Project Technical Team and Pilot Site Core Team to increase community capacity for communication with government authorities, technical service providers, potential investors and the private sector at the local level to ensure full engagement in PES and carbon financing initiatives;
- Guide the efforts to ensure the communities effectively implement and benefit from PES/biocarbon schemes at the community level.

More Specific task are:

- Facilitate community participation and mobilization for CBFCM project implementation;
- Prepare for community level capacity building training events in accordance with the CBFCM project management work plan;
- Organize community level training events on PES and biocarbon financing, sustainable forest management practices, etc.;
- Support project monitoring and evaluation (M&E) reporting and technical delivery requirements;
- In conjunction with pilot area Core Team and local and international experts, facilitate the development of catchment level sustainable land use management plans and guidelines to guide community forest management aligned with negotiated PES agreements with participating community groups and members;
- Document and share information quarterly with PMU, particularly regarding cases with the most significant change which can contribute to periodic success stories and lessons learned;
- Provide inputs for the development of audio-visual and printed training and guidance material from project implementation for broader sharing;
- Participate in project planning, strategic development and review activities, and produce reports as required;
- Be responsible for site area project financials, including working within/managing a budget to complete project activities; negotiating and contracting with vendors; assisting with budget

development;

PES Monitoring & Evaluation Expert

The primary responsibility of the CBFCM project M & E expert will be to design the M & E framework and process for each of the four project pilot sites;

More specific tasks will include:

- Provide necessary PES and C-stock M&E training, guidelines and documentation to ensure that the project team as well as the national counterpart is able to oversee and execute M&E activities included in the Annual Work Plan, with particular focus on results and impacts as well as in lesson learning maintaining the following principles and outputs:
- Based on the AWP and in particular the programme budgets, design the framework for the physical and process monitoring of project activities;
- Promote a results-based approach to monitoring and evaluation, emphasizing results and impacts;
- Ensure realistic intermediate and end-of-project targets are defined ;
- Guide and coordinate the review of the project log-frame, including providing technical advice for the revision of performance indicators;
- Assist Project Manager and project Core Teams in clarifying M&E responsibilities of different project personnel in addition to preparing detailed M&E budget and calendar of M&E activities;
- Assist PMU, project site Core Teams and Field Coordinators identifying the requirements for collecting baseline data, and assist with the baseline study (situation at project start) where required, including identifying sources of data, collection methods, who collects data, how often, cost of collection and who analyzes it;
- Undertake regular visits to the field to support implementation of M&E and to identify where adaptations might be needed;
- Foster participatory planning and monitoring by training and involving primary stakeholder groups in the M&E of activities;
- Coaching of key project personnel, including Field Coordinators, site Core Team members and participating community network members on M & E processes, procedures, techniques, etc.;
- Coordinate the preparation of all project reports, including guiding project staff (i.e. Field Coordinators, Core Team, etc.) in preparing their progress reports in accordance with approved reporting formats and ensure their timely submission. This includes quarterly progress reports, annual project report, inception report, and ad-hoc technical reports;
- Prepare consolidated progress reports for project management including identification of problems, causes of potential bottlenecks in project implementation, and providing specific recommendations;
- Contribute to the development of the Annual Work Plan, ensuring alignment with project strategy, agreement on annual targets and inclusion of M&E activities in the work plan.

Bio-Carbon Assessment and Financing Expert

The primary responsibilities of the Bio-Carbon Expert is to provide technical assistance and training of trainers on forest carbon stock assessment and bio-carbon markets;

More Specific tasks will include:

- Provide technical assistance and training of trainers on forest carbon stock assessment and bio-carbon markets, including the following:
- Conceptual and scientific knowledge and concepts related to climate change, the global legal and institutional frameworks that is currently in place to address climate change, international

mechanisms to deal with climate change, and the dynamics of opportunities arising from carbon markets;

- Practices, methods and procedures, technical issues related to carbon stock assessment;
- Processes and challenges involved in obtaining carbon finance for emissions reduction projects;
- Key policies enacted to mitigate climate change, focusing on international policies (especially the Kyoto Protocol and its Clean Development Mechanism, REDD, etc.) and some domestic measures;
- International carbon markets (both "compliance" and "mandatory") that has emerged from these policies, including its origins, evolution, basic mechanics, past and current trends and potential future directions.
- carbon project cycle, using case studies and practical exercises to illustrate each step, including the practicalities of selling carbon from an emissions reduction project.