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**International Union for Conservation of Nature**

**Countries:**

**Cambodia, Lao PDR and Myanmar**

**PROJECT DOCUMENT**

**Sustainable Management of Peatland Ecosystems in Mekong Countries**

(GEF Mekong Peatlands project)

**Brief Description of the project**

The Sustainable Management of Peatland Ecosystems in Mekong Countries Project will operate in Cambodia, Lao PDR and Myanmar. The objective of the project is to sustainably manage peatland ecosystems in targeted countries and to conserve biodiversity and reduce greenhouse gas (GHG) emissions, by:

1. Assessing and documenting peatland ecosystems in the three countries;
2. Strengthening the capacity and the enabling policy and legal framework for sustainable peatland management at local, national and sub-regional levels; and
3. Demonstrating sustainable peatland management practices that conserve biodiversity, reduce GHG emissions and strengthen sustainable livelihoods for local communities.

The project will contribute to the ASEAN Programme on Sustainable Management of Peatland Ecosystems 2014-2020 (APSMPE) endorsed by the ASEAN Environment Ministers in 2013, the ASEAN Agreement on Transboundary Haze Pollution (AATHP), and the ASEAN Peatland Management Strategy 2006-2020 (APMS).

The project will be comprised of the following four components:

Component 1: Assessment and documentation of peatlands in targeted countries

Component 2: Capacity development and policy and legal frameworks

Component 3: Development and demonstration of sustainable peatland management

Component 4: Regional cooperation

**List of Acronyms**

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| AATHP ASEAN Agreement on Transboundary Haze Pollution  ADB Asian Development Bank  APSMPE ASEAN Programme on Sustainable Management of Peatland Ecosystems  APMS ASEAN Peatland Management Strategy  ASEAN Association of South East Asian Nations  ASMC ASEAN Specialised Meteorological Centre  ATFP ASEAN Task Force on Peatlands  AWP Annual Work Plan  BANCA Biodiversity and Nature Conservation Association  BCC Biodiversity Conservation Corridor  BKN Beung Kiat Nong  BSNP Botum Sakor National Park  CBD Convention on Biological Diversity  CBO Community-based organization  CCCSP Cambodia Climate Change Strategic Plan  CEO Chief Executive Officer (GEF)  CPA Community Protected Area  CSO Civil Society Organization  DWR Department of Water Resources  ESIA Environmental and Social Impact Assessment  ESMP Environmental and Social Management Plan  ESMS Environmental and Social Management System  EU European Union  FA Forestry Administration  FAO Food and Agriculture Organization of the United Nations  FiA Fisheries Administration  FPIC Free, prior and informed consent  FREDA Forest Resource Environment Development and Conservation Association  GAP Good Agriculture Practice  GDANCP General Department of Administration for Nature Conservation and Protection  GEF Global Environment Facility  GEC Global Environment Centre  GGO IUCN’s Global Gender Office  GHG Greenhouse Gas  HH Households  IBRRI Indo-Burma Regional Ramsar Initiative  ICIMOD International Centre for Integrated Mountain Development  IFAD International Fund for Agricultural Development  IFC International Finance Corporation  IKI German International Climate Initiative  IUCN International Union for Conservation of Nature and Natural Resources  INDC Intended Nationally Determined Contribution  LAMDP Land Administration, Management and Distribution Program  LLS Livelihoods and Landscapes Strategies  M&E Monitoring and Evaluation  MAF Ministry of Agriculture and Forestry  MAFF Ministry of Agriculture, Forestry and Fisheries  MFF Mangroves for the Future  MLMUPC Ministry of Land Management, Urban Planning and Construction  MNWP Myanmar National Water Policy  MNCDP Myanmar National Comprehensive Development Plan  MoE Ministry of Environment  MoNRE Ministry of Natural Resources and Environment  MONREC Ministry of Natural Resources and Environmental Conservation  NAPP National Action Plans on Peatlands  NAMA Nationally Appropriate Mitigation Actions  NAPA National Adaption Programme of Action  NBSAP National Biodiversity Strategy and Action Plan  NDC Nationally Determined Contributions  NEAP National Environmental Action Plan  NESAP National Environmental Strategy and Action Plan  NGO Non-governmental organization  NPC National Project Coordinator  NPD National Project Director  NSC National Steering Committee  NTFP Non-timber forest product  NUoL National University of Laos  PA Protected Area  PAAS Project Appraisal and Approval System  PCD Pollution Control Department  PCMS Project Complaints Management System  PGS Project Guidelines and Standards  PKWS Peam Krasop Wildlife Sanctuary  PPG Project Preparation Grant  PIF Project Identification Form  RBA Rights-based approach  RHRD Research and Human Resource Development  RS Remote Sensing  SALT Sloping Agriculture Land Technology  SEApeat Sustainable Management of Peatland Forests in South East Asia Project  SME Department of Small and Medium Enterprises  ToR Terms of reference  UNDP United Nations Development Programme  UNICEF United Nations Children’s Fund  UNFCCC United Nations Framework Convention on Climate Change  WCS Wildlife Conservation Society  WHO World Health Organisation  WRI World Resources Institute  WWF World Wildlife Fund |

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# Project Profile

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| --- | --- |
| **Project title** | Sustainable Management of Peatland Ecosystems in Mekong Countries (“Mekong Peatlands Project”) |
| **Project Number (GEF ID / IUCN ID)** | 9332 |
| **Project type (FSP or MSP)** | Full-sized Project (FSP) |
| **Trust Fund** | GEFTF |
| **GEF strategic objectives and focal areas** | BD-1 Program 1, BD-4 Program 9, CCM-2 Program 4, LD-3 Program 4, SFM-3 Program 7 |
| **IUCN programme priority** | Sub-Result 1.3, Target 10  Sub-Result 2.1, Target 15  Sub-Result 3.3, Target 30 |
| **Geographical scope** | Cambodia, Lao PDR, Myanmar |
| **Project executing agency/ies** | National government agencies (Cambodia MoE, Cambodia MAFF, Lao PDR MoNRE, Myanmar MONREC), ASEAN Secretariat, Global Environment Centre, FREDA, IFAD |
| **Duration of project (including expected start and end dates)** | 48 months (July 2018 – June 2022) |

**Project cost (Summary)**

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| --- | --- |
| **Item** | **USD** |
| 1. GEF financing | 2,907,064 |
| 1. Co-financing |  |
| Ministry of Agriculture, Forestry and Fisheries, Cambodia | 81,600 |
| Ministry of Environment, Cambodia | 195,000 |
| Ministry of Natural Resources and Environment, Lao PDR | 985,001 |
| Ministry of Natural Resources and Environmental Conservation, Myanmar | 1,629,999 |
| Global Environment Centre | 350,000 |
| Forest Resource Environment Development and Conservation Association, Myanmar | 169,847 |
| Sustainable Use of Peatland and Haze Mitigation in ASEAN (SUPA) Project | 3,500,000 |
| IFAD | 2,500,000 |
| IUCN | 949,000 |
| 1. Sub-total co-financing | 10,360,447 |
| 1. Total (A+C) | 13,267,511 |

# Project Results Framework

| **Results Chain** | **Indicators** | **Baseline** | **Target(s)** | **Source of verification** | **Assumptions / Risks** |
| --- | --- | --- | --- | --- | --- |
| Project Objective: To sustainably manage peatland ecosystems in Mekong countries and to conserve biodiversity and reduce GHG emissions | | | | | |
| **Component 1 – Assessment and documentation of peatlands in targeted countries** | | | | | |
| **Outcome 1.** ***Peatland ecosystems are better documented*** in the three target countries supporting enhanced recognition and management | **Outcome Indicator 1**  Area of peatlands identified and assessed | Initial surveys and assessments conducted under SEApeat; but no systematic inventory or documentation | **Target 1** 28,000 ha of peatlands identified and assessed | Survey report and peatlands maps |  |
| **Output 1.1.** ***Surveys*** to identify peatland ecosystems in Cambodia, Lao PDR and Myanmar undertaken | **Output Indicator 1.1 A**  Availability of harmonized training modules on peatlands survey and assessment in national languages.  **Output Indicator 1.1 B**  Number of maps produced in a process that involves national capacity building.  **Output Indicator 1.1 C**  Number of peatland surveys undertaken in target geographic areas within the countries of Cambodia, Lao PDR and Myanmar. | In Cambodia, SEApeat (2014, 2015) estimates 10,000 ha of peatlands in Koh Kong Province based on their initial peatlands survey; NCSD (2016) indicates there are potential peatlands in the Tonle Sap swamp forests, along the Mekong River, and more extensively through coastal wetlands.  In Lao PDR, SEApeat (2015) confirmed about 570 ha of peatlands in and around Beung Kiat Ngong Ramsar wetlands site and roughly 100 ha in Vientiane Province. Additional, and potentially significant, peatlands are likely to occur within both Vientiane and Champasak Provinces.  In Myanmar, SEApeat (2012-2015) confirmed significant areas of peatlands including > 10,000 ha in Shan State and roughly 500 ha around Htu Lake in Myan Aung Township of the Ayerwaddy Region. Other areas where peatlands have been found but require additional survey include: Pyin Oo Lwin Township of Mandalay Region, Bokpin and Palaw Townships of the Thanintharyi Region (southern Myanmar), Indawgyi Lake in Kachin State (northern Myanmar) and Kyaukme Township of Northern Shan State. | **Target 1.1 A** Training modules on peatlands survey and assessment developed at regional level for stakeholders at different levels and translated into national languages.  **Target 1.1 B** Three, nation-wide maps of Cambodia, Lao PDR and Myanmar peatlands produced at a scale of 1:1,000,000 (Cambodia and Lao PDR) and 1:1,250,000 (Myanmar) by building in-country capacity; these maps will be prepared via analysis of satellite imagery and ground-truthing surveys.  **Target 1.1 C** A minimum of 11 detailed field-based surveys undertaken by project team and sub-group of local representatives (3 surveys in Cambodia, 3 in Lao PDR, and 5 in Myanmar). A minimum of 6 detailed maps produced at a scale of 1:50,000 (3 in Cambodia and 3 in Lao PDR). A minimum of 5 semi-detailed maps produced for Myanmar at a scale of 1:250,000 plus one detailed map of Inle Basin (1:15,000). | Review of the nation-wide peatlands maps prepared for the three countries based on analysis of satellite imagery  Review of records of training workshops and site surveys  Review of landscape-specific peatlands maps covering the key geographic areas identified within the three countries  Review of training modules | Assumptions: Appropriate satellite imagery is accessible for comprehensive analysis across the three countries  There are sufficient district representatives to hold successful training workshops and to complete the surveys in a reasonable timeframe.  Land access will be granted to targeted areas of interest.  Risk: Satellite imagery not available or accessible; insufficient human resources; inability to access land. |
| **Output 1.2.** Important peatland sites ***assessed and documented*** | **Output Indicator 1.2 A** Number of rapid assessments conducted for significant peatland areas in the target countries (including analysis of the functions and values related to habitats, biodiversity, and carbon storage).  **Output Indicator 1.2 B**  Number of reports produced. | No functions and values evaluations conducted yet. Rapid surveys were conducted for some peatlands under SEApeat and other projects.  In Cambodia, mangrove peatlands along coastal areas of Koh Kong Province confirmed by SEApeat to be of regional significance. Limited surveys completed in other areas.  In Lao PDR, peatlands within and around Beung Kiat Ngong were confirmed by SEApeat to be of national significance. Limited surveys completed in other areas.  In Myanmar, peatlands within Inle Lake Watershed were confirmed by SEApeat to be of regional significance. Limited surveys completed in other areas. | **Target 1.2 A** A total of seven assessments conducted (two in Cambodia, two in Lao PDR and three in Myanmar) of confirmed important peatlands.  **Target 1.2 B** One final report produced per country summarizing the results of the national peatlands functions and values assessments, and identifying priorities for conservation and restoration. | Review of reports on biophysical and ecosystem service assessments prepared for a representative sample of confirmed important peatlands.  Review of final survey report with maps, peatland biophysical and ecosystem service assessments, and recommendations for conservation priorities. | Assumptions: There are sufficient district representatives available to support the completion of the survey assessments within a reasonable time period  Land access will be granted to targeted areas of interest.  Risk: Insufficient human resources; inability to access land. |
| **Component 2 – Capacity development and policy and legal frameworks** | | | | | |
| **Outcome 2.** ***Capacity and policy/legal frameworks*** for  sustainable peatland  management strengthened | **Outcome Indicator 2 A**  Number of people with increased capacity and/or awareness of sustainable peatlands management  **Outcome Indicator 2 B**  Number of policy/legal frameworks improved/strengthened | Limited awareness of peatlands and knowledge of sustainable management practices | **Target 2 A** At least 225 people across the three countries have increased capacity and/or awareness of sustainable peatlands management  **Target 2 B** At least two policy/legal frameworks per country improved/strengthened | Review of records of training programs and awareness campaigns  Review of policies, strategies, and action plans that have incorporated peatlands. |  |
| **Output 2.1.** Key stakeholders at various levels ***trained on peatland assessment, rehabilitation and management*** and their awareness and understanding of the functions and importance of peatland ecosystems enhanced | **Output Indicator 2.1 A**  Number of key stakeholders at national, sub-national and local level trained in peatland assessment, rehabilitation and management. (disaggregated by gender)  **Output Indicator 2.1 B**  Availability of harmonized information and training materials on peatlands in national languages (for use at national, sub-national and local levels). | Currently there is limited knowledge around peatlands, e.g., their definition and why they are important; this lack of awareness occurs at national, sub-national, and community levels  Prior trainings on peatlands assessment and management were conducted under SEApeat; more trainings are needed to include additional stakeholders, particularly at the district and local level in key geographic areas | **Target 2.1 A** 225 key stakeholders from national and sub-national levels have been trained in peatland assessment, rehabilitation and management of peatland ecosystems.  **Target 2.1 B** Harmonized information and training materials on peatlands developed at regional level for stakeholders at different levels and translated into national languages. | Review of record of training workshops that were conducted  Review of information and training materials developed in local languages | Assumptions: A sufficient number of appropriate stakeholders can be identified; stakeholders are interested and have the time to participate in training events  Risks: Insufficient numbers of stakeholders can be identified; stakeholders lack interest or time to participate in training events. |

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| **Output 2.2.** ***National strategies and/or action plans*** for protection and sustainable use of peatland ecosystems prepared and peatlands mainstreamed into national and sub-national policies and regulations | **Output Indicator 2.2 A**  Availability of guidance for mainstreaming peatlands into national policies and plans suitable for the Mekong region based on ASEAN experience.  **Output Indicator 2.2 B**  Number of national or sub-national plans, policies or strategies that incorporate peatland conservation provisions, based on consultations with relevant stakeholders (including women and local communities). | Peatlands are not currently included in regulatory frameworks in the target countries; there is limited protection of these ecosystems outside of national protected areas (PAs), and within PAs there is not sufficient mention of peatlands in management plans or enforcement of regulations. While all three countries are in draft stage of wetland guidelines, strategies, and/or action plans, to date there is limited consideration around peatlands specifically in these documents.  All three countries are part of the ASEAN Agreement on Transboundary Haze Pollution and have endorsed the ASEAN Peatland Management Strategy (APMS) requiring each country to produce a National Action Plan on Peatlands by 2020. However, the countries need additional technical support in order to be able to develop their NAPPs. | **Target 2.2 A** Guidance document developed at regional level.  **Target 2.2 B** At least two national or sub-national plans, policies or strategies per country incorporate peatland conservation provisions (e.g., NAPPs, wetlands policies, land use planning, agriculture and forest management strategies, environmental regulations), based on consultations with relevant stakeholders (including women and local communities). | Review of policies, strategies, and action plans that have incorporated peatlands.  Review of record of consultation workshops including meeting summary and participants list. | Assumption: There will be national-level and cross-sectoral support for the development of the National Action Plans for Peatlands  Risk: Conflict with development sector particularly around larger-scale impacts to peatlands (e.g., sand mining in Cambodia, peat extraction in Lao PDR and Myanmar, etc.) |

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| **Component 3 – Development and demonstration of Best Management Practices** | | | | | |
| **Outcome 3.** Integrated sustainable management of peatland ecosystems in the targeted countries demonstrated, with an emphasis on conserving biodiversity, reducing GHG emissions and strengthening sustainable livelihoods for local communities | **Outcome Indicator 3 A**  Area of peatland under improved management  **Outcome Indicator 3 B**  Number of community members who have adopted sustainable livelihood practices that allow for sustainable management and use of peatland areas | Limited specified management of peatland ecosystems in protected area management plans and related sustainable livelihoods | **Target 3 A** 14,600 ha of peatland under improved management  **Target 3 B** 500 community members (at least 250 women) have adopted sustainable livelihood practices | Records of demarcation of important peatlands including maps and photo-documentation  Review of M&E data for livelihood development |  |
| **Output 3.1.** Protection and sustainable use of the peatlands in ***Peam Krasop Wildlife Sanctuary*** enhanced | **Output Indicator 3.1 A**  Number of pilot sites established demonstrating best management practices of peatlands.  **Output Indicator 3.1 B**  Number of community members (disaggregated by gender) trained in sustainable livelihood practices.  **Output Indicator 3.1 C**  Availability of peatland conservation provisions in PKWS management plan. | Alternative aquaculture development identified as a need during inception mission  Ecotourism development identified as priority during inception mission  There are various past and current projects in Koh Kapik (e.g., BCR, MFF, dolphins, Mekong WET, etc.).  The current management plan for PKWS does not have specific provisions for peatlands | **Target 3.1 A** Two pilot sites established within PKWS (Boeung Kachhang and Koh Kapik); identification and demarcation of important peatland areas around these sites; creation of awareness around these areas.  **Target 3.1 B** 100 community members (at least 50 women) trained in sustainable livelihood practices in the selected target villages of Koh Kapik and Boeung Kachhang within PKWS.  **Target 3.1 C** Peatland conservation incorporated into PKWS management plan. | Records of demarcation of important peatlands, including maps and photo-documentation.  Review of records of community consultations in each of the target areas regarding existing and desired livelihoods.  Review of: detailed livelihood development plans; M&E plan for livelihood improvement projects; data collected by the project; and reports produced for beginning, mid-term, and final project evaluation.  Review of PKWS management plan for incorporation of sustainable management of peatlands. | Assumption: Land-based management activities will occur on national protected area or commune-owned land; no transfer of ownership (e.g., via land concessions) will occur during/after project implementation  Risk: Land concessions during course of project |
| **Output 3.2.** Protection and sustainable use of the peatlands in the ***Beung Kiat Ngong landscape*** enhanced | **Output Indicator 3.2 A**  Number of pilot sites established demonstrating best management practices of peatlands.  **Output Indicator 3.2 B**  Number of community members (disaggregated by gender) trained in sustainable livelihood practices.  **Output Indicator 3.2 C**  Availability of peatland conservation provisions in Beung Kiat Ngong Management Plan. | Current threats to peatlands in and around Beung Kiat Ngong include agricultural encroachment and drainage, peat extraction, burning, over-fishing, and over-hunting.  Current management plan for Beung Kiat Ngong does not have specific provisions for peatlands. | **Target 3.2 A** One pilot site established around Bung Naphat, a peatland located outside of the BKN Ramsar site to the northeast. The focus will be on three communities: Ban Thongsay; Kala, and Na’ang.  **Target 3.2 B** 100 community members (at least 50 women) trained in sustainable livelihood practices in the selected target villages.  **Target 3.2 C** Peatland conservation and sustainable management incorporated into Beung Kiat Ngong management plan. | Records of demarcation of important peatlands including maps and photo-documentation  Review of records of community consultations in the target communities around Bung Naphat regarding existing and desired livelihoods. Review of: detailed livelihood development plans; M&E plan for livelihood improvement projects; data collected by the project; and reports produced for beginning, mid-term, and final project evaluation.  Review of BKN management plan for incorporation of sustainable management of peatlands | Assumption: Land-based management activities will occur on state- or community-owned land; no transfer of ownership (e.g., via land concessions) will occur during/after project implementation  Risk: Land concessions during course of project |
| **Output 3.3.** Protection and sustainable use of the peatlands in ***Inle Lake Watershed*** enhanced | **Output Indicator 3.3 A**  Number of training and awareness-raising workshops conducted for relevant government departments and local communities.  **Output Indicator 3.3 B**  Number of pilot sites established demonstrating best management practices of peatlands.  **Output Indicator 3.3 C**  (a) Formation of an Inle Lake Peatlands Task Force in collaboration with the Inle Lake Wildlife Sanctuary Office and the Committee on Inle Lake Sustainability to address basin-wide issues relevant to the sustainable management of peatlands at the basin scale.  (b) Number of peatland regulations and recommendations incorporated into existing frameworks, including the Inle Lake Management Plan.  (c) Number of actions to support basin-level management (development of alternative biofertilizer options, training on fire management, development of best management practices for waterway construction). | Current threats to significant mound springs, peat domes and other terrestrial peatlands within the Inle Lake basin include water extraction for community water use, peat extraction, erosion from upland farming practices, and agricultural encroachment  Threats to floating peatlands within Inle Lake include conversion to floating gardens, excessive chemical fertilizer and pesticide use, routine burning, and cutting and removal for waterway construction  Current management plan for Inle Lake WS does not have specific provisions for peatlands. | **Target 3.3 A**  At least three training and awareness-raising workshops conducted.  **Target 3.3 B**  (a) One pilot site established within the community of Taung Po Gyi (northwest shore of Inle Lake), for conservation of their mound spring peatland and development of alternative livelihood strategies that minimize impacts to peatlands.  (b) Additional pilot sites established within five villages of Inle Lake that are participating in a preliminary project with the Agricultural Department related to reduced-chemical farming of floating peat areas.  (c) Demonstration of relevant agroforestry practices in upland areas of Let Maung Kway village tract.  **Target 3.3 C**  (a) Inle Lake Peatlands Task Force established.  (b) Peatland regulations and recommendations incorporated into at least two existing frameworks.  (c) At least three actions implemented to support basin-level management. | Review record of training and awareness workshops.  Review of community management plan for the mound spring peatland in Taung Po Gyi.  Review records of community consultations in each of the target areas regarding existing and desired livelihoods  Review of Inle Lake Management Plan and other frameworks.  Review records of meetings with the Inle Lake Peatlands Task Force and other subsequent meetings and workshops. | Assumption: Land-based management activities will occur on state- or community-owned land; no transfer of ownership (e.g., via land concessions) will occur during/after project implementation  Risk: Land concessions during course of project |
| **Component 4 – Regional Cooperation** | | | | | |
| **Outcome 4.** ***Regional cooperation*** among countries in peatland sustainable management is enhanced | **Outcome Indicator 4 A**  Number of mechanisms used to support regional cooperation |  | **Target 4 A** At least four regional meetings and exchanges held |  |  |
| ***Output 4.1.*** Experiences and best practices for peatland assessment and management in Mekong countries ***documented and shared*** | **Output Indicator 4.1 A**  Availability of harmonized guidelines for conservation and sustainable use of peatlands  **Output Indicator 4.1 B**  Number of lessons learned documents produced and shared at the regional level  **Output Indicator 4.1 C**  Number of key stakeholders (disaggregated by gender) participating in exchange visit | Best management practices for peatland management have been implemented in pilot projects in Vietnam, Thailand, Malaysia, Indonesia, Philippines; information has been shared via ASEAN workshops and meetings  Regional exchanges occur via ASEAN task force meetings and other exchanges related to the regional reduction of transboundary haze | **Target 4.1 A** Guidelines for conservation and sustainable use of peatland resources developed and translated into national languages (value and functions of peatlands, conservation and restoration of ecosystems, biodiversity and sustainable use of peatlands) (including a common regional definition of peatlands that can be consistently applied across assessments).  **Target 4.1 B** At least one lessons learned document produced per country and shared at the regional level  **Target 4.1 C** 10 key stakeholders from Cambodia, 10 from Lao PDR, and 20 from Myanmar participate in exchange visit to other Mekong country (e.g., site with similar conditions in Vietnam or Thailand where management planning/ implementation is further developed; and/or to a project site in one of the target countries) | Review of guidelines  Review of lessons learned reports  Report of exchange visits (combine visits for Lao and Cambodian stakeholders; and hold second visit for Myanmar stakeholders) | Assumption: Key stakeholders can acquire necessary visas and permissions to partake in study tour.  Other countries have their own budget to support the study tour from their end  Risk: Operational and/or logistical problems with visiting other countries |
| **Output 4.2.** Technical project implementation ***support and coordination*** provided | **Output Indicator 4.2 A**  Number of key stakeholders (disaggregated by gender) participating in regional project inception workshop and annual PSC meetings  **Output Indicator 4.2 B**  Number of key stakeholders (women and men) participating in regional workshop on peatlands (during the last year of the project cycle)  **Output Indicator 4.2 C**  Number of national/local level project coordination and monitoring meetings (including inception meetings, NSC meetings) | Regional exchanges occur via ASEAN task force meetings and other exchanges related to the regional reduction of transboundary haze | **Target 4.2 A** 18 key stakeholders (6 per country) (women and men) participate in regional project inception workshop and annual PSC meetings  **Target 4.2 B** 18 key stakeholders (6 per country) (women and men) participate in regional workshop on peatlands management  **Target 4.2 C** At least two annual project coordination and monitoring meetings held per country (including inception meetings, NSC meetings) | Reports of regional project inception and coordination workshops  Reports of regional workshops |  |

# Background and Situation Analysis (Baseline Course of Action)

## Background and context

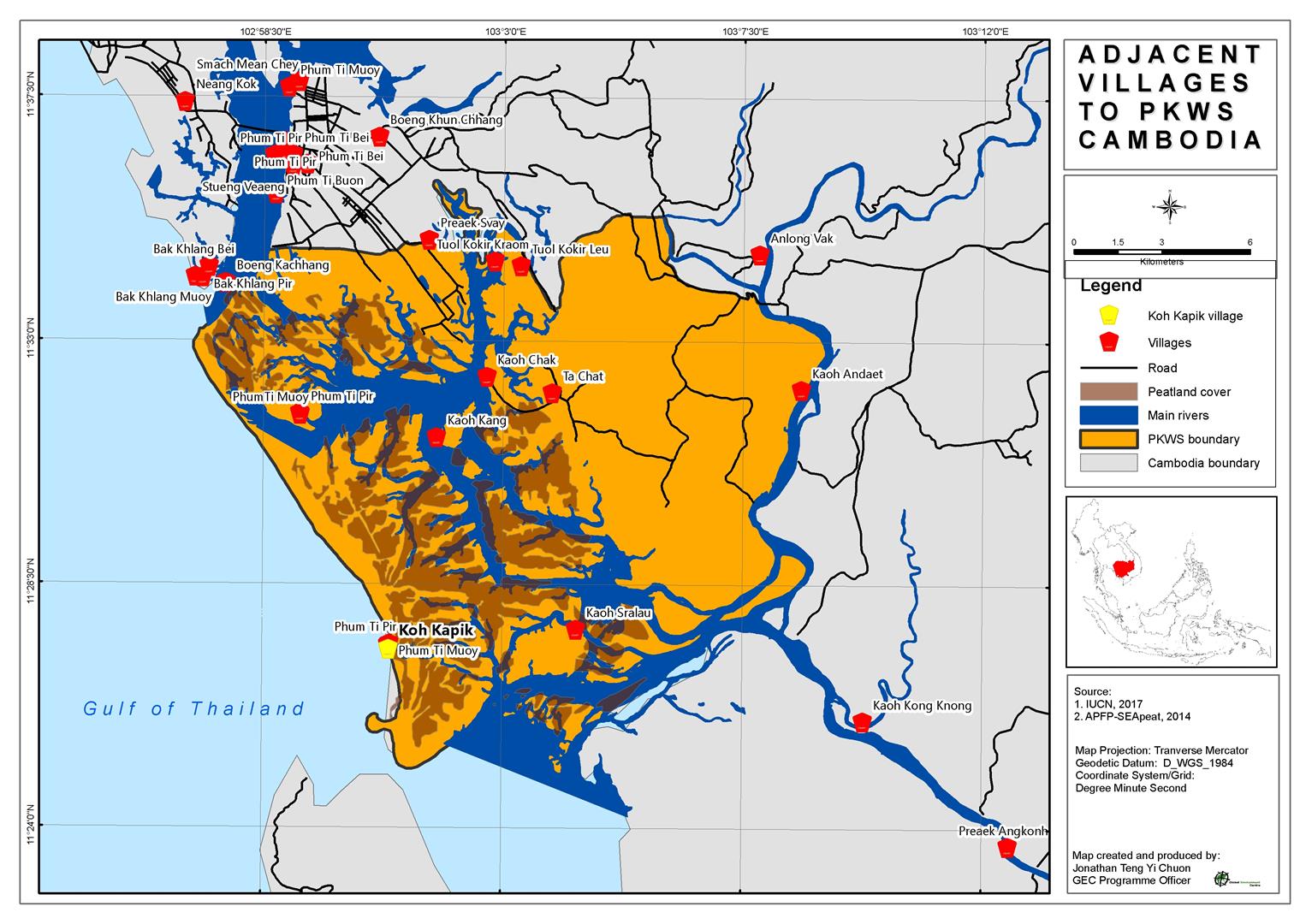
### **Environmental context**

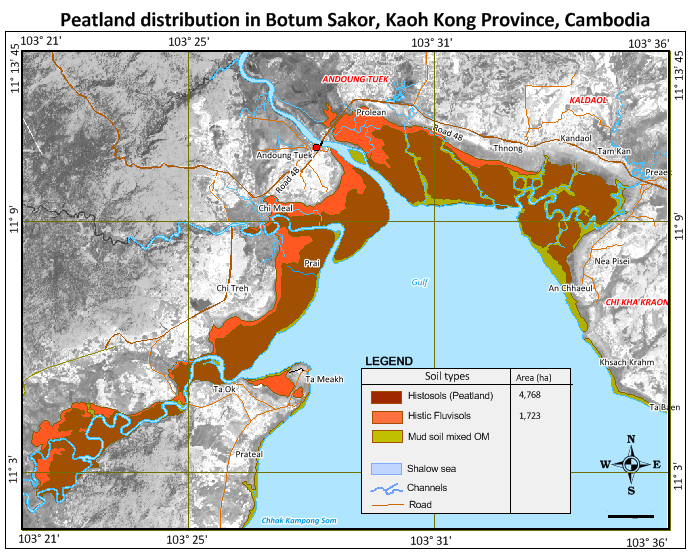
Peatlands are extremely valuable ecosystems, both from a biodiversity and climate change mitigation perspective, and play important roles in all three of the project’s target countries. For example, Inle Lake, which comprises one of the most important peatland ecosystems in Myanmar, has around 20 endemic fish species, supports many rare birds including the endangered Sarus Crane (*Grus antigone*), and was declared the country’s first Man and Biosphere Reserve in June 2015. One of the largest peatland spring mound ecosystems in Asia has been recently described in Inle Lake basin with peat more than six meters deep and with endemic crab species living on its surface. The peatlands in Cambodia have been identified across significant areas of coastal mangrove forests making them unique in the ASEAN region and supporting high biodiversity. The Peam Krasop Wildlife Sanctuary in Koh Kong Province in southern Cambodia is home to globally threatened species of birds and mammals such as the Giant Ibis (*Thaumatibis gigantea*) and the Indochinese silvered Langur (*Trachypithecus germaini*). Peatlands are found in a number of sites in central and southern Lao PDR; although comparatively smaller, they also support significant biodiversity value, provide carbon storage function, and generate vital benefits for local communities. The Beung Kiat Ngong landscape in southern Lao PDR supports several vulnerable and endangered species such as the Malayan snail-eating turtle (*Malayemys macrocephala*) and the Yellow-headed temple turtle (*Heosemys annandalii*). The forested peatlands at Beung Kiat Ngong are some of the rarest ecosystems in the Mekong region with significant potential for localised endemics.

However, the lack of recognition of these peatlands across the three countries makes them extremely vulnerable to degradation and potential loss of critical biodiversity. The peatland ecosystems are threatened by conversion and degradation due to unsustainable land use practices. There is a significant opportunity to reverse the loss of peatlands and safeguard associated biodiversity, carbon and livelihood benefits in the three countries by supporting improved recognition and management of the peatlands.

#### **Distribution and significance of peatlands in Cambodia**

In Cambodia, peatlands are mentioned in a few reports, but they have not been fully described nor inventoried throughout the whole country. Under SEApeat (2014, 2015), and based on satellite interpretation in combination with field surveys, considerable areas of peatlands were recorded and mapped in Peam Krasop Wildlife Sanctuary (PKWS) and Botum Sakor National Park (BSNP) within the coastal mangrove forests of Koh Kong Province (Figure 1 and Figure *2*). A portion of PKWS is also recognized as the Koh Kapik and Associated Islets Ramsar Site, with a total area of **120 km2.**

  
*Figure 1: Map of the peatlands in Peam Krasop Wildlife Sanctuary (SEApeat, 2014-2015)*



*Figure 2: Peatlands distribution in a portion of Botum Sakor National Park, Koh Kong Province, Cambodia (SEApeat, 2014-2015)*

Based on the surveyed area of peatlands carried out by SEApeat (2014, 2015), Cambodia has a comparatively small area of peatlands compared to its regional neighbours. These are found in various parts of Cambodia, but occur mainly in the coastal mangrove forests of Koh Kong Province and are estimated to cover about 10,000 hectares. Additionally, potential areas of peatlands are likely situated within the Tonle Sap swamp forests (National Council for Sustainable Development, 2016), along the Mekong river system, and within yet-to-be surveyed coastal mangroves as mentioned at the inception meeting of the project in December 2016.

As such, the inventory of peatlands in Cambodia that will occur under this GEF project plays a very important role for their clear identification, sustainable management, and development of a National Action Plan on Peatlands in Cambodia.

**Coastal mangrove peatlands in Koh Kong Province, Cambodia**

The existing coastal mangrove ecosystems in Cambodia, which encompass areas within both PKWS and BSNP, represent a still-functioning mangrove habitat/ecosystem in the Gulf of Thailand and the Indochina Mangroves ecoregion, supporting critical biodiversity and coastal habitats. They also play an important role in the absorbance of significant amounts of carbon dioxide form the atmosphere to mitigate the impacts of greenhouse gas emissions. And, they provide vital functions related to flood control and mitigation of the increasingly erosive tidal forces related to sea level rise.

Mixed-species mangroves predominantly cover the area of coastal peatlands that were identified within PKWS and the Koh Kapik Ramsar Site specifically (where there has been more detailed biological assessments completed). These mangrove forests are situated between major estuaries and the Gulf of Thailand, providing them with ample brackish water for the mangroves to thrive in (IUCN, 2013). The mixed-species mangrove forests play a critical role in providing significant ecosystem services and supporting biodiversity. For example, these areas provide a nutrient source that supports fisheries in the near-shore and offshore waters of Cambodia, and they are home to globally threatened bird and mammal species such as the critically endangered Giant Ibis (*Thaumatibis gigantea*), the endangered Sunda Pangolin (*Manis javanica*) and the Indochinese Silvered Langur (*Trachypithecus germaini*) ([http://www.ramsar.org/](http://data.worldbank.org/country/lao-pdr)). In addition, around 10,000 people in PKWS depend on the collection of fisheries resources and non-timber forest products (NTFPs) from mangrove forests and open sea (MAFF, 2014).

#### **Distribution and significance of peatlands in Lao PDR**

Beginning in 2006, the ASEAN Peatland Forest Project (APFP) has considered peatlands in Lao PDR, and in-country training on peatlands and fire was held in 2008 supported by this project. In addition, based on the results of the relatively recent peatlands assessment carried out in Lao PDR by the SEApeat project (GEC, 2015), peatlands in Lao PDR are found in provinces from the north to the south of the country, occurring most prominently in the Beung Kiat Ngong wetlands, Champasak Province and are estimated to cover more than 500 hectares. In addition, small potential areas of peatlands have been identified in swamp grasslands in other locations of Champasak Province as found by the limited survey conducted under the PPG phase for this project. Again, these initial assessments have identified some peatlands in the country, but their characteristics have not been described in detail nor has there been a nation-wide inventory completed.

The following figures depict peatlands inventoried in Vientiane Province and around the Beung Kiat Ngong Ramsar site in Champasak Province under the SEApeat project in 2015.

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***Figure 3: Map of the peatlands in Vientiane Province*** ***Figure 4: Peatlands distribution in Champasak Province***

The peatlands discovered under SEApeat in 2015 are relatively small and scattered throughout various locations in Lao PDR, from north to south. Most of the peatlands found are present within larger wetland complexes, formed within lowlands and valleys among the higher terrains and plateaus. Depending on the accumulation of plant decay/plant residues, the thickness of peat layers documented in the Lao SEApeat surveys generally varies from 0.3 m to more than 0.4 m. These areas contain high amounts of plant decay/plant residues and organic carbon content; however, some of the documented peat layers are mixed with clay and silt minerals.

The nation-wide inventory of peatlands in Lao PDR that is proposed under this project plays a very important role for sustainable management of peatland ecosystems in the country. Without clear identification of peatland areas, a national plan for peatlands management would not be effectively developed. Therefore, a detailed identification of peatlands in Lao PDR should be implemented in the near future.

**Ecosystems**

Most of the peat swamps in Lao PDR are unaffected by moving water; rather, they experience year-long inundation and an elevated water table during the rainy season. Static water conditions and robust growth of aquatic plants are key factors conducive to the formation of peat within swamp areas.

Vegetation in Lao peatlands consists predominantly of grasses and shrubs with forest trees additionally recorded in some areas. There is high species diversity of aquatic plants in most of the peat swamps documented; and evidence exists of their growth, decay, and regrowth over a long period of time forming floating peat mats on the water surface. Plant decay and plant residues that accumulate over time as floating plant decay mats ultimately form floating peatlands in swamps.

The survey results by SEApeat (2015) showed two types of peatlands in Lao PDR, which are classified as floating peatland and peatland. Except for a portion of the peatlands at Beung Kiat Ngong that is covered by forest, most of the peatland ecosystems discovered in Lao PDR are grasslands and aquatic marshes.

In Vientiane Province, the composition of plant species documented within the floating peatlands discovered there is variable and diverse (including *Nepenthes mirabilis, Cyperus andreanus, Colocasia esculenta, Nephrolepis falcata, Diplazium esculentum, Stenochlena palustris, Imperata cylindrica, Eleochris dulcis*). These are emergent plants with the lower parts often submerged in water, although they are unlikely to ever be completely submerged during flooding. The typical plant community is rich with a mix of grasses, sedges, and herbs. Shrubs occur in extensive clumps, possibly in association with ground depressions.

### The vegetation within the peatlands of Beung Kiat Ngong (Champasak Province) is diverse and includes grasses, shrubs and tree species. Herbaceous plants are dominated by seasonal grasses. Shrubs (*Sesbania, etc.*) and wood trees are found scattered within the grassland. Dominant species include *Nephrolepis falcat, Imperata cylindrica*, *Hydrilla verticillata, Monochoria hastata, etc.* Although the Beung Kiat Ngong site is a lowland area, a part of the site where inundation and soil water logging are not prolonged is covered by various graminoids with various grass species, such as from the family Poaceae, predominating. Some species of the family Cyperaceae were also recorded.

As observed during the PPG inception mission, the peatlands contribute to various livelihoods within the surrounding communities. Villagers use these ecosystems for fishing, hunting, and spiritual reasons. They are an integral part of the cultural landscape.

### **Beung Kiat Ngong wetlands**

### The Beung Kiat Ngong wetlands complex is made up of a number of important habitat types, including peatlands, swamp forest, permanent ponds, freshwater marsh and seasonal flooded grasslands, and with a Dipterocarp forested wetland edge. The bordering forest, designated as the Xe Pian national protected area (IUCN, 2013), is listed as an ‘outstanding representative site’ for the Indochinese Tropical Moist Forests Boime, and in Laos, Xe Pian NPA is ranked as the second-highest priority for management in the protected area network (Bezujin et al 2007). The proximity of wetland and forest ecosystems at the site ensures a complex mosaic of habitat types and a biodiverse system. Beung Kiat Ngong was designed a wetland of international importance under the Ramsar Convention based on criteria 1 (contains representative, rare or unique wetland types), 2 (supports vulnerable, endangered, or critically endangered species), 4 (provides refuge during adverse conditions) and 8 (provides fish spawning and nursery ground).

### Around 120 bird species were recorded across the site during biodiversity surveys in 2014, and it was identified that due to the size and complexity of the wetland complex, a number of species were present in nationally significant numbers: breeding Purple Heron (*Ardea purpurea*), Purple Swamphen (*Porphyrio porphyrio*) and Bronze-winged Jacana (*Metopidius indicus*), and perhaps Watercock (*Gallicrex cinerea*) and Black Bittern (*Dupetor flavicollis*) (Timmins & Duckworth, 2014).

### Eight turtle species were recently recorded to occur at the Beung Kiat Ngong wetlands including a number of globally red-listed (vulnerable and endangered) threatened species. Species recently confirmed and sighted include Yellow-headed Temple Turtle (*Hesomys annandalii*), Mekong Snail Eating Turtle (*Malayemys subtrijuga*), Asian box turtle (*Cuora amboinensis*) and Elongated Tortoise (*Indotestudo elongate*) *(A. Scott pers.obs)*.

### During the wet season, the wetland provides important habitat and spawning areas for a wide variety of fish with around 43 fish species reported. This area is also an especially important refuge area for fish during the low water dry season, with about 20 fish species recorded during this period, such as walking catfish (*Clarias spp*.), snakehead species (*Channa* spp.), including the giant snakehead (*C. micropeltes*, and swamp eel (*Monopterus albus*) (Khamlibounthavi, 2008).

### **Bung Naphat peatland near to the Beung Kiat Ngong Ramsar site boundary**

### The Bung Naphat (or Bung Paphat) peatland site was identified as a peatland of importance following surveys undertaken in early 2017 (Gustafson 2017). The peatland site was included in the 2014 biodiversity survey area, and was identified to have high vegetation diversity and to compose a vegetation complex incorporating many swamp forest patches, shrub areas, tall sedge beds, aroid/fern clumps and grassland areas. While only one bird survey was conducted in the Bung Naphat site, species recorded include Stork-billed Kingfisher, White-throated Kingfishers, Parakeets and White-breasted Waterhen (Timmins & Duckworth, 2014).

### Following the biodiversity survey, Timmins and Duckworth (2014) recommended a revised larger Ramsar site boundary, that encompasses the Bung Paphat peatland area, and suggests the area has similar biodiversity values as the present Ramsar area.

#### **Distribution and significance of peatlands in Myanmar**

SEApeat (2012-2015) confirmed significant areas of peatlands in Myanmar including more than 10,000 ha in Shan State (9,100 ha in Inle Lake and 1,600 ha in Heho Valley), and roughly 500 ha around Htu Lake in Myan Aung Township of the Ayerwaddy Region. Other areas where peatlands have been found – under SEApeat as well as a 2008 survey supported by the Australian Aid Development Cooperation Programme (AADCP) – but require additional survey include: Hopong Valley in southern Shan State, Pyin Oo Lwin Township of Mandalay Region, Bokpin and Palaw Townships of the Tanintharyi Region (southern Myanmar), Indawgyi Lake in Kachin State (northern Myanmar) and Kyaukme Township of Northern Shan State. Stakeholders at the project preparation inception mission indicated there might also be peatlands within Sagaing Region, Bago Region and Rakhine State.

**Inle Lake Area, Taunggyi District, Southern Shan State**

The most in-depth assessments of peatlands to date in the country of Myanmar have occurred within the Inle Lake area (SEApeat, 2012-2015) in Taunggyi District of Southern Shan State. While important peatlands occur in other parts of Myanmar and will be identified and described more clearly under the project’s national survey component, the pilot sites demonstrating best management practices (BMPs) will be located within the Inle Lake region. The following sections present the knowledge and understanding gained through the earlier assessments and through consultations during the project preparation phase, regarding the existing conditions and trends around peatlands and their sustainable management in the vicinity of Inle Lake. The table below summarises the known peatland areas of Inle Lake area.

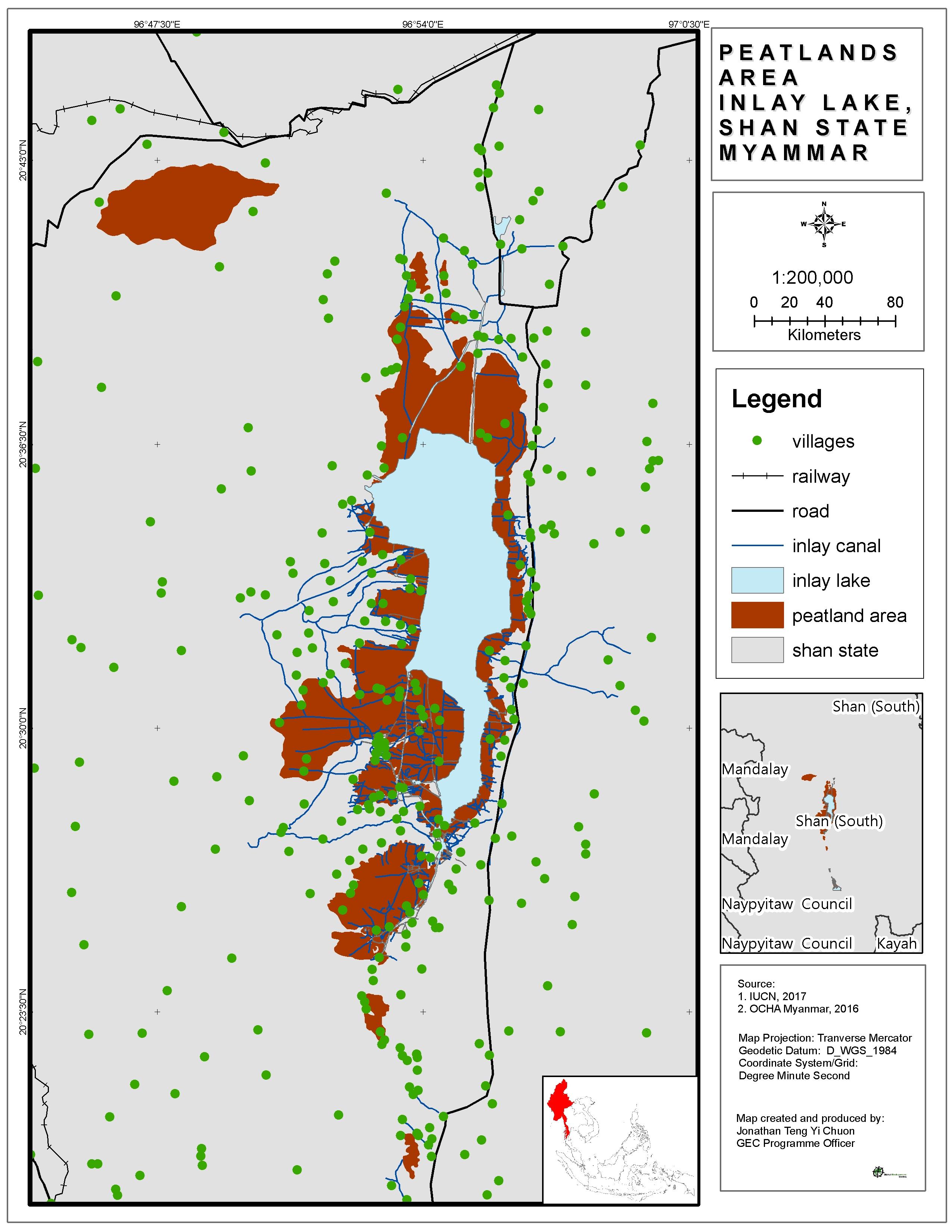
*Table 1: Peatland sites in Shan State*

|  |  |  |  |
| --- | --- | --- | --- |
| **Sites** | **Location** | **Land uses** | **Area (ha)** |
| Hopon | Taung Gyi | Crops, grass and shrubs, wood trees | Area not yet established |
| Inle lake | Inle Lake, Southern Shan State | Crops and grass | 9,105.94 |
| Taung Po Gyi | Nyaung Shwe | Grass, crops | Area not yet established |
| Heho Valley | Kalaw Township, Southern Shan State | Crops | 1,625 |

**Inle Lake peatlands**

Inle Lake was formed more than 1.5 million years ago. Its unique geological history has created habitat conditions leading to a rich biodiversity with many native and endemic species (UNDP, 2015). According to UNESCO, the wetland ecosystem of the freshwater lake is home to 267 bird species – of which 82 are wetland birds – and 43 species of freshwater fishes, otters, and turtles (UNDP, 2015). A Biodiversity and Nature Conservation Association (BANCA) survey recorded 135 species of birds in Inle Lake in July 2011.

The lake has been reported to be a nesting place for the globally endangered Sarus Crane (*Grus antigone*). During the project preparation inception mission, three individuals of Sarus Crane were observed in grasslands and rice fields just north of Inle Lake, on February 23, 2017. As native peatlands are transformed to agricultural crops, important habitat for the Sarus Crane will be further compromised. Thus, the restoration of native peat grasslands in Inle Lake could serve an important function in terms of restoring important feeding areas and habitat in general for this endangered species.



***Figure 5: Peatlands in and around Inle Lake***

Based on the survey and assessment conducted by SEApeat (2014), there are two types of peatlands in and around Inle Lake: *peatlands* and *floating peatlands*. Peatlands are located along the fringes of the lake and at the foot of the basin’s hillside while floating peatlands are dominant within the inner area of the lake. The thickness of the peat layers assessed by SEApeat in this vicinity generally varied from 0.4 to 3.4 meters.

The dominant land use of the peatlands and floating peatlands of Inle Lake is agricultural production, mainly of tomatoes and other vegetable crops. There are also remaining (albeit fragmented in places) natural peatlands within Inle Lake that generally fall into two ecosystem types: grasslands and aquatic plant mats. The grasslands typically correspond with the higher-lying peatlands along the lake’s fringe, while aquatic plant mats dominate the vegetative structure of the floating peatlands within the inner lake area. These natural peatlands provide important breeding and nesting grounds for fish and habitat for birds and amphibians. In particular, the fringe peatlands have been identified as a refuge zone for many species of waterfowl. However, many of these water bird species in the lake are sensitive to habitat degradation and are showing declining populations. These species act as indicators of the overall health of the ecosystem.

Prevalent grass species found in the higher-lying peatlands include: Phragmites vallatoria, *Adenosma bracteosa*, Saccharum spontaneum, Saccharum arundinaceum, Coix aquatica**,** Brachiaria mutica, Isachne globosa, *Cyperus malaccensis*, *Leersia hexandra, Desmodium oblongu,* and *Panicum sarmentosum.* More hydrophilic grasses and aquatic plants are primarily distributed in the floating peatlands (and along canals and ponded areas within the higher-lying peatlands) including *Blechnum serrulatum, Colocasia esculenta, Ludwdgia adscendens, Nymphaea nouchali, Polygonum persicaria*, *Ipomoea aquatica,* and *Enhydra fluctuans*.

Aquatic plants on floating peat mats play a vital role in lake ecology because they provide cover, habitat, and food for bio-communities. However, too many plants can limit fishing, boating, and aesthetic appreciation of the lake. Two ecosystem-level processes have largely influenced the distribution and abundance of the aquatic flora of Inle Lake. One is the natural and unpredictable fluctuation of water levels that the lake experiences, resulting in a drawdown zone of several vertical meters. The other is the consequence of several invasive alien species such as water hyacinth (*Eichhornia crassipes*) and water cabbage (*Pistia stratiotes*), which are serious threats to the native plant cover of the natural peatlands of Inle Lake. It is very difficult to eradicate these species once they establish large enough populations.

Several species of native plants in floating peatlands provide livelihood opportunities for local communities. Centella (*Centella asiatica*) and Taro (*Colocasia esculenta*) are common plant species of the floating peatlands and are harvested by locals to sell to the market. Therefore, the conservation and sustainable use of valuable species in natural peatlands also helps to conserve and develop the livelihoods of local communities.

The lowering water level in Inle Lake, particularly in the dry season, can cause irreversible damage to the higher-lying peatlands; the lowering ground water table results in oxidation and decomposition of the peat. Some canals in the elevated peatland areas also facilitate water loss and drying out of the peatlands (and subsequent decomposition). Therefore, any plans to expand the Inle Lake canal system should be reviewed carefully in the context of sustainable management of the surrounding peatlands. The impacts of climate change should also be considered in terms of hydrological changes on the lake. Climate models for the region project increasingly variable rainfall patterns, including more severe droughts, more extreme flood events as well as rainfall coming at irregular times of the year (USAID, 2013). All of these hydrological changes have the potential to impact peatlands.

The burning of grass before the start of a new crop season is typical within the peatlands of Inle Lake. While floating peatlands are less affected by this practice due to the underlying peat mass being saturated by the lake’s water level, the higher-elevated peatlands are at greater risk of damage and loss due to fires. These fires also contribute to haze pollution within the basin that can be pronounced, particularly during the dry season.

**Calcareous mound spring peatlands within the Inle Lake Watershed area**

A regionally significant calcareous mound spring peatland is situated at the northwestern edge of Inle Lake within the village tract of Taung Po Gyi. The SEApeat project recorded a substantial peat layer with a thickness of greater than six meters at this particular location. Three additional mound spring peatlands were also recorded in Hopong Township (just east of the Inle Lake drainage basin but within the same district of Taunggyi); however, the thickness of their peat layers has not been checked yet. These are some of the first documented cases of calcareous mound spring peatlands being found in Asia.

These mound spring peatlands are formed when spring water slowly percolates upwards and stimulates peat formation. The peat at this site was measured to be more than 6m deep with scattered thin layers of calcium carbonate deposits from the calcium rich waters. Water absorption of mound spring peatlands creates a fairly consistently wet soil environment despite their higher terrain compared to surrounding areas. These mound spring peatlands are thought to be among the largest of their kind recorded in Asia. They are home to unique biodiversity such as endemic crab species.

Although mound spring peatlands have the capacity to absorb relatively large amounts of water, if this natural water source is unsustainably exploited there can be significant impacts to the overall structure and function of these systems. For example, if water extraction for village use results in the loss of a large amount of water during the dry season (at a time when it cannot be replenished), the peat will subside due to the less water present inside the peatland’s pore spaces as well as decomposition of the dried peat. The peat subsidence is impossible to restore (in this lifetime) to its original status because the reverse process cannot take place except through the accumulation of plant residues on the surface that happens at an estimated rate of 0.5 – 2.0 mm per year.

Field observations show there are many wells for water extraction in the unique mound spring peatland of Taung Po Gyi, and locals describe (and are concerned by) the significant subsidence that has occurred over the years. Relatedly, at a mound spring peatland in Hopong Township, local agricultural producers have recently installed a pump system to extract water to irrigate nearby crops. This practice threatens the sustainability of this peatland without knowing the amount of water that can be extracted without causing subsidence and a plan put in place to limit water use around this threshold.

To date, there have not been any assessments of water supply and water renewable capacity of mound spring peatlands in Myanmar, but observations confirm that exploitation of water resources in these ecosystems will have an impact on the height and the volume of the peatland. This water withdrawal practice should be considered carefully in terms of developing strategies for sustainable water use within mound spring peatlands and peatland conservation itself.

**Heho Valley Peatlands**

Peatlands in Heho Valley (northwestern area of the Inle Lake drainage basin) are estimated to encompass approximately 1,625 hectares. Most of the peatlands in this area are covered by a layer of colluvial materials that accumulated over time via soil erosion processes from the surrounding hillsides. The thickness of colluvial materials ranges from 20 to 40 cm. The colluvial layer preserves remnants of the buried organic materials that have been mixed with the sediment materials. The variation in the thickness of the sub-horizon, peat layer (below the upper, colluvial layer) in this area has not been studied.

All of the peatlands of Heho Valley are used for agricultural production with different farming types. Although there are no large canals, some small canals have been built in order to facilitate water supply for crop cultivation in the dry season. In some places, farmers have mixed the underlying peat materials with the colluvial top layer for farming because they realize the value for increasing crop production.

Investigation of the peatlands in Heho Valley (through both observation and interviews with local farmers) indicates that the buried peat has significant water storage capacity, which results in limiting decomposition from oxidation when the ground water level is maintained within 60 cm from the soil surface. Due to the storage of water inside the buried peat layer in combination with capillary action from the upper colluvial soil layer, there is sufficient water availability to support crop cultivation in Heho Valley during the dry season.

Although local farmers do not know the technical name of peat soils, the majority of them recognize how important these soils are for their livelihoods. In Taung Po Gyi, for example, local villagers think about the surrounding peat soils as a living (and sacred) system providing critical support for their crops and household water supply, particularly in the dry season. Preliminary discussions with local villagers from this community revealed that they have already been thinking about ways of avoiding further damage to the mound spring peatland and initiating its restoration.

**Agricultural considerations**

According to observations of current agricultural production of peatlands within the district of Taunggyi in Southern Shan State, there are three kinds of agro-ecosystems that should be considered when developing sustainable strategies for peatland conservation: 1) agro-ecosystems in floating peatlands; 2) agro-ecosystems in peatlands; and 3) agro-ecosystems in mound spring peatlands.

The current status of agriculture in the peatlands and floating peatlands in and around Inle Lake have been influenced and shaped over time by the ethnic groups of Shan State. Their origin, structure and ecological relations differ from natural landscapes considerably. They are considered as the visual result of peatland uses, particularly on the floating peatlands of Inle Lake. They are semi-natural systems developed with the participation of the Shan people who have used and maintained them for decades.

However, the sustainable use of peatland resources does not mean only for food production but also should involve maintaining the equilibrium between the productive, economic and agro-ecosystem function and maintaining the biodiversity of peatlands. Ideally, sustainable agriculture in peatlands in this area of Myanmar should seek to take advantage of ecosystem processes by designing an agricultural system that works to achieve both production goals and peatlands conservation dually. To develop and maintain these sustainable management approaches, local communities must be involved including through capacity building for developing alternative livelihood models.

### **Socio-economic context**

#### **Socio-economic context in Cambodia**

In 2015, Cambodia had a population of 15.58 million people, with an annual population growth rate of 1.6%. Population growth has steadily declined over the past several decades. For example, in 1990 the annual growth rate was 3.2% and in 2000 it was 2.2%. At the same time, Cambodia has maintained a steady economic growth over the past two decades, and attained “lower-middle income status” as of 2015. However, Cambodia is still considered a least developed country (LDC) per the UN classification system due to its low gross national income relative to other nations, its weak human assets (considering nutrition, health, education, and adult literacy indicators), and its high degree of economic vulnerability. While Cambodia’s poverty rate is relatively high, it has seen a steady decline in recent years. For example, 50.2% of the population fell below the national poverty line in 2000 compared to 22.1% in 2010 and 17.7% in 2015 (World Bank 2017a).

In 2011, FAO reported that over 80% of the population of Cambodia lives in rural areas and about 73% rely on agriculture for their livelihoods (FAO 2011). As such, the preservation of sustainable and functioning agro-ecosystems is critical to supporting healthy and resilient communities in Cambodia. Additional livelihoods and sources of income in Cambodia include fisheries, the garment industry and the growing tourism sector.

#### **Socio-economic context in Lao PDR**

Lao PDR is similar to Cambodia in that it is an LDC with lower-middle income status. It, too, has seen rapid economic growth in recent years, in large part due to its use of natural resources (i.e., water, minerals, forests). However, development indicators suggest that there are still significant deficits in certain areas related to health and income security for the general populace. For example, the World Bank has estimated that 44% of under-five children in Lao PDR are stunted (World Bank, 2017b).

Lao PDR is predominantly rural and with a sparse population (6.80 million people in 2015). The vast majority are subsistence farmers, with rice being their main crop. Population growth has declined over the past several decades. For example, the annual growth rate in 1990 was 2.9% compared to 1.7% in 2015. The poverty rate is still quite high, with 23.2% below the national poverty line in 2015. This has seen some decline in recent years; for example, in 2000, 33.5% of the population fell below the national poverty line (World Bank, 2017c).

#### **Socio-economic context in Myanmar**

Myanmar is the largest country in mainland Southeast Asia, but with a very low population density. The country has been undergoing a major transition toward democratization beginning in 2010 when the military government held its first elections in 20 years. In 2016, the National League for Democracy (NLD) officially took over power from the military-backed regime. New economic policies, health and education strategies, and nutrition and rural development priorities have been developed over the past year (World Bank, 2017d). Overall, the country is in the midst of significant change.

Among Southeast Asian countries, Myanmar has the lowest life expectancy and the second-highest rate of infant and child mortality. Only one-third of the population has access to the electricity grid and transportation networks are sparse (World Bank, 2017d). The total population of Myanmar in 2015 was 53.90 million. Its growth rate has declined from 1.5% in 1990 to 0.9% in 2015 (World Bank, 2017e). It is considered an LDC by the UN classification system. Poverty is concentrated in rural areas, where the majority practice subsistence farming and casual labour (World Bank, 2017d).

### **Institutional, sectoral and policy context**

#### **Institutional, sectoral and policy context in Cambodia**

In Cambodia, peatlands have not historically been considered as a specific land type, therefore, there is no one single agency coordinating all decisions affecting peatlands. Based on laws related to peatlands, a broad range of ministries and agencies share the responsibilities for peatlands management, the primary listed below:

* The Ministry of Environment (MoE), including the General Department of Administration for Nature Conservation and Protection (GDANCP), the Coastal Coordinating Unit, the Department of Freshwater Wetlands Conservation, and the Climate Change Department
* Ministry of Agriculture, Forestry and Fisheries including the Forest Administration (FA) and the Fisheries Administration (FiA)
* Ministry of Land Management, Urban Planning and Construction (MLMUPC), which implements the Land Administration, Management, and Distribution Program (LAMDP)
* Ministry of Tourism

Although peatlands play an important role in environmental protection, biodiversity conservation and in the socio-economic development of many communities, there have not been any specific laws or policies directly related to peatlands in Cambodia. In actuality, peatland use is governed by separate, sectoral policies spanning forest management, fisheries, agricultural development, environmental protection and nature conservation. At present, there is no coordinated and harmonized policy related to the management of peatlands in Cambodia.

Cambodia’s environment provides natural resources including forests, waterways, plants and wildlife. Natural resources also include [minerals](http://www.iucn.org/esms), [energy](https://www.thegef.org/project/sustainable-cropland-and-forest-management-priority-agro-ecosystems-myanmar) and [extractives](https://www.thegef.org/project/strengthening-sustainability-protected-area-management). The environment is varied, covering at least seven distinct landscapes across the country.

Listed below are some of the relevant policies that are pertinent to peatland management in Cambodia. For the purposes of this document, the policies listed are those that were developed post-1990.

* Royal Decree on the Creation and Designation of Protected Areas (1993);
* Law on Environmental Protection and Natural Resources Management of the Kingdom of Cambodia (1996);
* National Environmental Action Plan (NEAP) 1998-2002;
* DRAFT National Environmental Strategy and Action Plan (NESAP) 2015-2023;
* Land Law (1992 and 2001);
* Forestry Law (2002);
* Fisheries Law (2006);
* Cambodia National Adaptation Programme of Action (NAPA) (2006);
* Water Resources Management Law (2007);
* Protected Areas Law (2008);
* Cambodia National Strategic Development Plan (2014-2018)
* Cambodia Climate Change Strategic Plan (2014-2023);
* Cambodia National Biodiversity Strategy and Action Plan (2016);
* Cambodia’s Intended Nationally Determined Contribution (INDC) (2015)

The relevance of selected policies to peatlands and their alignment to the specific goals of this project are discussed in more detail under Section 4.5.

#### **Institutional, sectoral and policy context in Lao PDR**

Peatlands have not yet been considered as a special type of ecosystem for land management at the policy level in Lao PDR, although they have been considered more generally under the wetlands category, for example, under the Water and Water Resources Law (1996, revised version approved in 2017), within the Forestry Law (2007), and in the National Biodiversity Strategy and Action Plan 2016 – 2025.

Because they are not considered currently as a specific land type in Lao PDR, there is no one single agency coordinating all decisions affecting peatlands in the country. Rather, a broad range of departments and agencies share the responsibilities for peatlands management, namely involving these key sectors, which fall primarily under the Ministry of Natural Resources and the Environment (MoNRE) and the Ministry of Agriculture and Forestry (MAF):

* Land administrative sector
* Agricultural and rural development sector
* Fisheries sector
* Forestry sector
* Environmental protection sector
* Hydrology sector
* Mineral management sector

Lao PDR is also party to the ASEAN Agreement on Transboundary Haze Pollution and the ASEAN Peatland Management Strategy (APMS), although the specific obligations related to these, for example, the development of a National Action Plan on Peatlands (NAPPs) by 2020, remain largely unfilled due to lack of funding and institutional/technical capacity. This project will directly support Lao PDR to develop its country NAPP and otherwise fulfil its obligations to these ASEAN agreements.

Although peatlands have not been managed in Lao PDR as a specific ecosystem with unique characteristics and requirements, in some cases they have been conserved through other wetland management efforts, for example, through the establishment of the Beung Kiat Ngong Ramsar Site. A number of nature conservation activities at this site have included awareness raising around ecosystems and biodiversity as well as activities to support local community livelihood development, implemented in collaboration between the Lao government and international donors.

Most of the peatlands recorded by SEApeat in 2015 in Lao PDR, except for the peatlands at Beung Kiat Ngong, have not received attention related to their sustainable management. Villagers have the right to access these peatlands without peatland-specific regulations in place to protect their ecology and biodiversity. In certain areas, peat has been extracted for the production of organic fertilizer; and other unsustainable activities including agricultural encroachment, livestock grazing, and overharvesting of species have further degraded these sites.

Although peatlands play an important role in key ecosystem services such as water storage, flood mitigation, biodiversity, climate change mitigation and in the socio-economic development of many communities, there has not been any specific law or policy directly related to peatlands, or a harmonized approach across sectors related to their sustainable management, in Lao PDR. Peatland use is governed by separate policies related to forest management, agricultural development, environmental protection, and biodiversity conservation.

Listed below is legislation that could be considered to influence peatlands management in Lao PDR:

* PM Decree 164/1993 on Establishment of National Conservation Forest (1993)
* Water and Water Resources Law (1996, revised version pending approval)
* Law on Agriculture (1998)
* Forestry Strategy to the Year 2020 of the Lao PDR (2005)
* The Forestry Law (2007)
* PM Decree on Export of Mining Products (2008)
* Lao PDR National Adaptation Programme of Action to Climate Change (2009)
* National Strategy on Climate Change of the Lao PDR (2010)
* Environmental Protection Law (2012)
* Lao PDR National Biodiversity Strategy and Action Plan 2016-2025 (2015)
* Lao PDR Intended Nationally Determined Contribution (2015)
* Lao PDR 8th Five-Year National Socio-economic Development Plan 2016-2020 (2016)
* National Strategy on Environmental and Climate Change Education and Awareness 2016-2030 and the related Five Year Action Plan 2016-2020 (under review)

The relevance of selected policies to peatlands and their alignment to the specific goals of this project are discussed in more detail under Section 4.5.

#### **Institutional, sectoral and policy context in Myanmar**

The key ministries that influence the management, use and conservation of peatlands in Myanmar include: the Ministry of Natural Resources and Environmental Conservation (MONREC); the Ministry of Agriculture, Livestock and Irrigation (MALI); the Ministry of Hotels and Tourism (MOHT); and the Ministry of Industry (MOI). The relevant governmental departments include: the University of Forestry (UOF), the Forest Department (FD) and the Environmental Conservation Department (ECD) under MONREC; the University of Agriculture (UOA), the Department of Agriculture Research (DAR), the Agriculture Department (AD) and the Irrigation Department (ID) under MALI; the Department of Small and Medium Enterprise Development (DSMED) under MOI; and the Hotels and Tourism Supervising Department (Nyaung Shwe Branch) under MOHT. All departments, except those under MOHT, have regional, district and township level offices.

More specifically and under the Forest Department of MONREC, the Nature and Wildlife Conservation Division (NWCD), the Watershed Management Division (WMD) and the Forest Research Institute (FRI) will be directly relevant to the project, particularly at the level of implementation of best management practices in pilot sites. The following tables summarize the relevant ministries, and the specific departments under each respective ministry.

|  |  |  |
| --- | --- | --- |
| Ministry of Natural Resources and Environmental Conservation (MONREC) | | |
| **No** | **Department/Enterprise** | **Major Responsibility** |
| 1 | Forest Department | Forest conservation |
| 2 | Myanmar Timber Enterprise | Timber harvesting/marketing |
| 3 | Dry Zone Greening Department | Greening activities in dry zone |
| 4 | Survey Department | Survey and mapping |
| 5 | Environmental Conservation Department | Environmental affairs |
| 6 | Department of Geological Survey and Mineral Explorer | Survey and exploration of minerals |
| 7 | Myanmar Pearl Enterprise | Pearl breeding and marketing |
| 8 | No.1 Mining Enterprise | Metal extraction |
| 9 | No.2 Mining Enterprise | Metal extraction |
| 10 | Myanmar Gems Enterprise | Gems extraction/auction |
| 11 | Department of Mines | Mining |
| 12 | Yezin Forestry University | Academic affairs |

|  |  |  |
| --- | --- | --- |
|  | Ministry of Agriculture, Livestock and Irrigation (MALI) |  |
| **No** | **Department/Enterprise** | **Main Responsibility** |
| 1 | Department of Agriculture Land Management and Statistics | Land planning |
| 2 | Department of Agriculture Research | Research for crops |
| 3 | Department of Irrigation and Water Utilization Management | Water |
| 4 | Department of Agriculture | All seasonal crops management |
| 5 | Settlement and Land Records Department | Land |
| 6 | Myanmar Agricultural Development Bank | Loans |
| 7 | Department of Industrial Crops Development | Industrial crops like cotton and jute |
| 8 | Department of Cooperatives | Production |
| 9 | Yezin Agricultural University | Academics |
| 10 | Department of Agricultural Planning | Planning agriculture schemes |
| 11 | Yezin University of Veterinary Science and Livestock | Academics |
| 12 | Department of Rural Development | Housing, road, water |
| 13 | Department of Fisheries | Fish production |
| 14 | Department of Livestock Breeding and Veterinary Science | Poultry production |

|  |  |
| --- | --- |
|  | Ministry of Hotel and Tourism (MOHT) |
| **No** | **Department/Enterprise** |
| 1 | Public Relations and Information Department |
| 2 | Internal Audit and Finance Department |
| 3 | Planning and Statistics Department |
| 4 | Policy Department |
| 5 | Administration and HR Management Department |
| 6 | Hotels and Tourism Supervising Department |
| 7 | Training and Education Department |
| 8 | Planning Department |
| 9 | International and Regional Cooperation Department |
| 10 | Tourism Promotion Department |
| 11 | Administration and Finance Department |

|  |  |
| --- | --- |
|  | Ministry of Industry (MOI) |
| **No** | **Department/Enterprise** |
| 1 | Directorate of Industrial Collaboration |
| 2 | Directorate of Industrial Supervision and Inspection |
| 3 | No (1) Heavy Industrial Enterprise |
| 4 | No (2) Heavy Industrial Enterprise |
| 5 | No (3) Heavy Industrial Enterprise |
| 6 | Myanmar Pharmaceutical Enterprise |
| 7 | Central Department of SME Development |

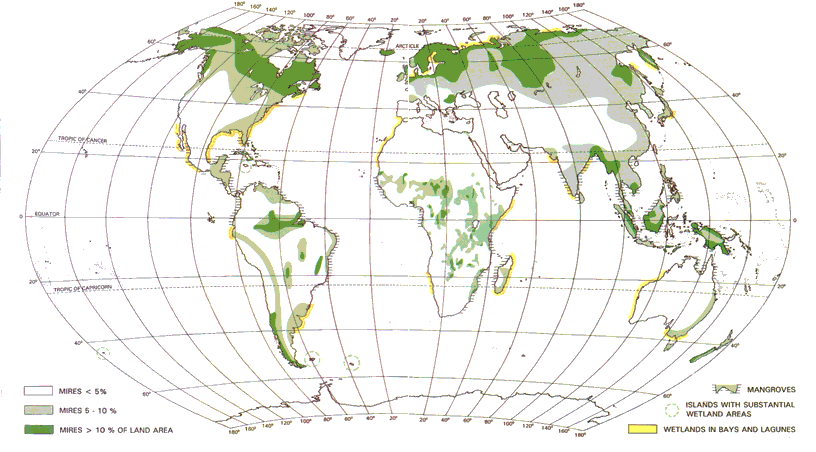
The following policies, strategies and action plans are relevant to peatlands conservation and sustainable management in Myanmar. They will be discussed in more detail in relation to the project objectives under Section 4.5.

* National Sustainable Development Strategy for Myanmar (2009)
* Myanmar National Water Policy 2014 (MNWP-2014)
* DRAFT National Wetlands Policy (under development)
* National Biodiversity Strategy and Action Plan 2015-2020
* Myanmar Forestry Policy (1995)
* Myanmar National Comprehensive Development Plan (20 year vision)
* Myanmar National Land Use Policy (2016)
* Myanmar Ecotourism Policy and Management Strategy 2015-25
* Small and Medium Enterprise Law (2015)
* Myanmar’s Intended Nationally Determined Contribution (INDC) (2015)
* National Adaptation Programme of Action (NAPA) (2012)

## Global environment problem

On a global scale, peatlands provide numerous and critical ecosystem services. These include water storage and regulation, flood control, habitat to support unique species and to enhance the world’s biodiversity, carbon sequestration and storage, and the provision of food and other goods and services to local communities. In Southeast Asia, peatlands cover an estimated 25 million hectares, or roughly 7% of the total area of the world’s organic soils. However, they account for 50% of carbon emissions from peatlands worldwide (Hoojier et al., 2006), largely due to their clearance, burning and drainage for agricultural uses. Tropical peatlands tend to be much deeper than in other climate zones so their degradation and/or destruction results in much greater carbon loss per given area (Page et al., 2011). As a result, efforts to conserve, restore, and sustainably use the peatlands of Southeast Asia are critical to the reduction of worldwide greenhouse gas (GHG) emissions.

Peat soils are characterized by abundant pore spaces, behaving like sponges and enabling significant water absorption and retention during rainy periods of the year (FAO 2005). The peat soil essentially acts as a water reservoir, which releases slowly during dry periods after the rains cease and the surrounding water table drops. As a result, peatland conservation and restoration efforts are not only considered as mitigation due to the positive effects on the reduction of GHG emissions, but also climate change adaptation. The Mekong Region can expect to see increasingly variable rainfall patterns as a result of climate change, with more frequent and unpredictably timed droughts (USAID 2013). Protection and cultivation of critical water stores such as peatlands will be instrumental in developing water secure communities throughout the region. The high porosity of peat soils also enhances their flood mitigation properties. Along with the more variable rainfall patterns projected with climate change, the region will also experience more frequent and extreme storm events (USAID 2013). Conserving peatlands with their sponge-like soils will help reduce the severity of flooding associated with the more extreme storms that are likely to occur with increasing frequency in coming years.



*Figure 6: Peatland distribution worldwide (http://www.peatsociety.org)*

Peatlands are unique and complex ecosystems. Plant species that inhabit these systems must be able to withstand harsh conditions including anaerobic soils, limited nutrients, and high acidity. Unique species that are able to adapt to such environments are found in peatlands. For example, many of the world’s carnivorous plants, which obtain additional nutrients by attracting and digesting insects and other small prey, inhabit peatlands. Because peatlands are relatively more difficult to convert to other land uses than neighbouring dryland ecosystems for example, they also often provide a last refuge for endangered or otherwise threatened animal species (Parish *et al.,* 2008). For example, in Southeast Asia, they provide habitats for the Bornean Orangutan, the Sumatran Tiger, and the Sun Bear (APFP 2006). As such, peatlands play an important role in contributing to and maintaining key habitats and biodiversity at a global level.

The historical event that brought some of the issues surrounding peatlands degradation in Southeast Asia into public scrutiny occurred in 1997 when the seasonal peat burning associated with land clearance practices in Sumatra and Kalimantan were very extended due to the short rainy season (El Niño year). Transboundary haze pollution, confined largely to Indonesia, Malaysia, and Brunei, was severe and had significant health effects. In 2015, a similar extended burning event occurred, also associated with an El Niño year, but this time the pollution extended much farther and across mainland Southeast Asia. Peat burning is hard to put out due to the depth of carbon stored, and the fires can continue for long periods below ground after the above-ground forest is burned out.

The 1997 fires in Indonesia led to the ASEAN Peatlands Management Strategy (APMS). The APMS is a regional strategy to conserve and sustainably use peatlands across the ASEAN member countries. The three target countries relevant to the project have all endorsed the APMS, of which one of the primary objectives is to develop National Action Plans on Peatlands (NAPPs) in order to identify and prioritize areas for conservation.

Currently our understanding of the extent and condition of peatlands in Southeast Asia is heavily skewed toward southern ASEAN member states such as Indonesia and Malaysia. This is a function of (1) environmental factors creating the ideal environment for peatlands to develop to the south, but also (2) lack of research and comprehensive knowledge of the extent and distribution of peatlands to the north and across the mainland.

## Threats, root causes and barriers analysis

While the large-scale drivers of peatland degradation identified in maritime Southeast Asia, i.e. fire, large-scale logging and land conversion, are also at play in mainland Southeast Asia, specific drivers of peatland degradation in the target countries and at the site level reflect the less extensive nature of peatland sites and the highly varied ecological context in which these peatlands are found.

### Threats

**Cambodia**

The major threats to peatlands in Cambodia include:

* Small-scale peat extraction for organic fertilizer use;
* Small-scale agricultural encroachments and aquatic species collection;
* Small-scale mangrove cutting for charcoal production;
* Large-scale sand mining in peatlands leading to land erosion and coastal ecosystem degradation;
* Economic land concessions for various commercial purposes (eg, plantations); and
* Aquaculture practices.

**Lao PDR**

The major threats to peatlands in Lao PDR have been identified as:

* Human-made conversion of peatland areas, as evident in Beung Kiat Ngong, where the forest cover has been removed through anthropogenic fires and/or draining of the land for agriculture or for plantations;
* Overfishing and overgrazing;
* Use of chemical fertilizers;
* Peat extraction for organic fertilizer use; and
* Increased frequency of drought and fires.

**Myanmar**

The major threats to peatlands in Myanmar, and in particular in and around Inle Lake, include:

* Conversion for agricultural expansion leading to draining and burning of peatlands;
* Heavy chemical fertilizer and pesticide use on the agricultural land areas, which leads to eutrophication and threatens managed peat areas as well as the surrounding lake system and associated natural peatlands;
* Cutting and relocating of floating peat to construct floating vegetable gardens;
* Unsustainable agricultural practices in upland areas of the watershed, leading to eroding soil that is deposited during the rainy season on top of the low-lying peatlands, lowering the water level of the lake and cutting off waterways;
* Unsustainable fishing practice to burn the floating peat in order to create pathway for fishers’ boats and catch fishes from the lake
* Fires;
* Peat extraction for organic fertilizer use; and
* Water extraction from mound spring peatlands resulting in subsidence. As water is extracted from the dome during the dry season and not replaced, the pores compress and the soil subsides. Over time, these domes lower in height considerably and lose their water absorptive capacity.

In addition, some environmental management activities aimed at maintaining the lake’s surface water level and managing invasive species have resulted in excavation of peatland areas in the lake. Relatedly, waterway construction for maintaining boat transport routes threatens the lake’s peatlands. Increasing tourism can also exert pressure on peatlands due to the conversion for infrastructure development as well as impacts related to poor waste management, disposal and increased waterway traffic.

In conclusion, the threats to peatlands occurring in the three target countries can be summarised into five main categories: 1) peatland fires and burning; 2) peat extraction for organic fertilizer use; 3) encroachment or land conversion for agricultural, industrial or other use (grazing, aquaculture); 4) improper drainage systems, water extraction or siltation, leading to lowering of the water level; and 5) the use of chemical fertilizers and pesticides on agricultural peatland areas. All these factors threaten the ecological sustainability of the peatlands.

### **Root causes**

Root causes for the degradation and unsustainable management of peatlands within the project’s focus areas include:

1. *Lack of knowledge of the nature and distribution of peatland ecosystems in the three countries*.

Peatland ecosystems have only recently been recognized and partially delineated in the three target countries; they were officially first documented in Myanmar and Lao PDR in 2009 under the ASEAN Australia Development Cooperation Program Regional Partnerships Scheme (AADCP), and Cambodia in 2013. However, there were earlier aerial surveys and field surveys carried out in Cambodia, including the aerial survey in 1994 by Jonathan Davies and Mam Kosal. In addition, there was a field survey carried out in 2007 in Cambodia by Jonathan Davies and MoE officials under the AADCP. Surveys supported by the SEApeat project between 2011 and 2015 have been responsible for the documentation of most of the known peatlands, with a total of more than 20 sites covering more than 25,000 ha identified in the three countries. An additional 50 locations have been identified for further survey.

Because peatland ecosystems have not previously been recognized or documented, it has been impossible for specific conservation or management measures to be undertaken. As a result, many peatland ecosystems have been cleared, drained, burnt and otherwise destroyed without them being recognized. Other peatlands have been included by chance in conservation areas – but they have not been recognized specifically in the management plans or processes. In some cases, they have been degraded by ongoing management activities in the conservation areas. For example, mechanical excavators have removed floating peatlands in the Inle Lake Wildlife Sanctuary in Myanmar, as they were believed to be reducing the open water surface of the lake. Burning of peatlands in Beung Kiat Ngong Ramsar site has been allowed to continue, as it was felt useful to maintain open grasslands for buffalo and waterbirds. Only by enhancing the understanding of the distribution and nature of peatlands can measures for their conservation be put in place. It is important that peatland conservation issues be incorporated into relevant national and local regulations, plans and management programs – guided through the development of National Action Plan on Peatlands in the target countries.

In addition, ecosystem services provided by the peatlands, such as food supply, flood control, water storage, etc. are not properly valued and recognised.

1. *Lack of specific policies and institutional arrangements for the management of peatlands.*

As mentioned in the previous point, peatlands are a new concept within the three target countries. At best, they fall under policies related to wetlands although such policies are generally weak within the region. Furthermore, in all three countries, there is no single agency coordinating decisions affecting peatlands. Instead, the different sectoral agencies (e.g., forestry, agriculture, water, irrigation) that are involved in managing peatlands have different interests and needs, leading to un-coordinated approaches and conflicting policies and ultimately the degradation of peatlands. Although the conservation and rehabilitation of sensitive areas (e.g., wetlands) are envisaged in various sectoral plans and programs, the reality is that there is minimal cross-sectoral dialogue on the protection and sustainable use of peatlands that takes into account multi-disciplinary information (including scientific arguments). In addition, there is lack of coordinated enforcement of plans and programs that, in principle, support rehabilitation and conservation of peatlands.

1. *Increasing domestic and international demand for products from peatland areas*.

The demand for a range of products harvested or cultivated in peatlands is increasing and this is leading to increasing pressure for expansion of cultivation and exploitation. Mining of peat for fertilizer production is affecting peatlands across the region based on market demand and investments especially from Vietnam where similar mining has already led to the loss of almost all peatlands outside of protected areas. Mining and dredging of sand in the mangroves and coastal waters of Cambodia is being driven by demand for sand for land reclamation in Singapore. This sand mining is leading to erosion and degradation of mangroves including those with peat deposits. Eroded coastal peat is now being washed into the South China Sea. Agricultural and other land concessions lead to the removal of forest cover. At Inle Lake in Myanmar, increasing demand for “off-season” vegetables for the cities and also for regional trade is driving intensification of commercial agriculture in the peatlands in and around the lake. International and regional demand for prawns is driving the expansion of aquaculture ponds in the coastal mangroves of Cambodia. The impacts from these increasing demands must be addressed at multiple levels including through national and local regulations along with enhanced measures at the peatland sites.

1. *Poverty and lack of sustainable livelihood options for local communities*.

High levels of poverty and lack of sustainable livelihood options and market access are among the drivers forcing local communities to harvest resources from peatland areas in the three countries and also convert their catchment areas leading to land degradation and erosion which in turn leads to siltation and degradation of downstream peatlands. As a result of the lack of alternatives, communities tend to focus on direct exploitation of natural resources with increasing demand leading to over-exploitation and unsustainable land use practices. Such communities also tend to use fire for land clearing and also focus on annual crops such as maize rather than on perennial crops or agroforestry. Such approaches lead to soil and land degradation as well as loss of forest and vegetation cover.

The root causes for peatland degradation and their unsustainable management in the countries of Cambodia, Lao PDR and Myanmar are summarized in the following figure.

Inappropriate land use management

Loss of peatlands

Conversion into other land use types - fish farming, agriculture

Degradation (oxidization, mineralization, extraction)

Lack of information on values of peatlands

Needs for production land, and resources

Uncoordinated sectoral approach

Increasing demand for peatland products

Lack of knowledge about peatlands

Poverty (community)

*Figure 7: Root causes for peatland degradation and their unsustainable use in Cambodia, Lao PDR and Myanmar*

### **Barriers analysis**

The barriers to mitigating threats and root causes fall under three broad categories: *insufficient resources;* *insufficient political prioritization;* and *technological barriers*. Each category is elaborated below.

|  |  |
| --- | --- |
| * 1. **Barrier** | * 1. **Explanation** |
| *Limited resources allocated to the conservation efforts of peatlands* | Limited resources present a major barrier for mitigating threats and root causes. There are financial constraints to supporting the identification of peatlands at a national level in the three countries. At the site level, little awareness of peatland management creates a barrier to securing funds and community support. Further, local communities often have poor access to investment capital and are unable to risk ventures into enterprises, like ecotourism initiatives, without significant external assistance and training.  The project aims to overcome this barrier through an initial investment in surveys, capacity building and awareness raising. |
| *Insufficient political prioritization and lack of a peatlands management plan integrated with local planning* | There is significant high-level commitment to the ASEAN agreements on peatlands in all three countries. Nevertheless, in the absence of additional external support, there is insufficient political prioritization and cooperation between agencies in the three countries. Planning at local and national levels is hindered by the same kinds of limitations of knowledge and understandingthat affect the development of specific conservation and mapping strategies. Long term planning at the local level can only be effective when local stakeholders understand the complex and long term implications of sustainable peatland management.  Planning also tends to be sector specific, with limited coordination between the different agencies responsible for peatlands, agriculture and climate change. Peatland sites for the project are governed by numerous laws, regulations and planning instruments, as well as by different departments and organizations.  The project aims to address this barrier by building awareness and enhancing capacity across different sectors and at different levels. |
| *Technological barriers* | The technological barriers mostly relate to the accessibility of necessary remote sensing technology including access to satellite imagery; as well as the presence of a skilled workforce needed to conduct the image processing and data interpretation that feeds into the comprehensive nation-wide peatland surveys. The expertise requires a unique combination of knowledge in not only remote sensing and GIS technologies but also soil science and wetland hydrology.  To overcome this barrier, the project plans to seek out resources and knowledge available at the regional level. At the same time, capacity building with key government counterparts will occur at the national level via working in tandem with the regional expert on these tasks. |

## Stakeholder analysis

The relevant key stakeholders in the three target countries are summarised below. A more detailed analysis is provided in Section 7, which formed the basis for developing the project’s future stakeholder engagement and participation strategy.

**Civil society stakeholders**

There are a number of CSOs and NGOs working on environmental conservation and livelihood development in the three target countries. The relevant organizations are described in the stakeholder engagement table; a number of them have been consulted during the design phase of the project and have expressed interest to participate in the project. While there are a range of national NGOs relevant to the peatlands project, they do not have a specific focus on peatland management.

*Cambodia*: CSOs and NGOs in Cambodia have been organizing to meet citizen and environmental needs. There is a clear opportunity to find synergies, provide capacity development and align information sharing. For example, in Peam Krasop Wildlife Sanctuary, the ecotourism-based community committee that is already established could provide key insights into peatland-related ecotourism activities. Also, there is a relatively new NGO, “Tuek”, also in Peam Krasop that works with local communities to address threats to waterbirds. There would be mutual benefit for the project to collaborate with such organizations and to build upon the knowledge that has already been gained through their consultations on threats to ecosystems. At the same time, the project could provide management recommendations that would further support waterbirds through better protection of peatlands.

*Lao PDR*: Multi-stakeholder participation in Lao PDR is largely achieved through “mass organisations” and local Civil Society Organisations (CSOs) rather than international Non-Governmental Organisations (NGOs). Key mass organizations/CSOs include the Lao Front for National Construction (also responsible for ethnic affairs) and the Lao Women’s Union (LWU). These organizations are extended to the local level, with branches and representatives at provincial, district and village levels. The LWU is particularly active, well organized and represented at all levels: its members often take part in Ramsar related activities and are usually suggested as members for committees and working groups by other provincial, district and village authorities. Its status has ministerial equivalence at the central level. Its relevance to the project stems from its role in improving and increasing women’s role in decision making and supporting their advancement, as well as promoting gender equality in family and society (FAO/CAWA, 2015).

*Myanmar*: Rural communities in wetlands and peatlands are generally interested in understanding how peatlands can be sustainably used while maintaining their livelihoods. Several CSOs are active in the Inle Lake watershed. For example, “Save the Inlay Lake” is a NGO active in the development of alternatives for lake farmers using chemical fertilizers and pesticides on their floating vegetable gardens. The project anticipates forming important partnerships with such organizations that confront issues and also suggest alternate options such as those that are directly relevant to peatlands. There is a growing trend towards multi-sector cooperation between different government agencies and other stakeholders.

**Government stakeholders**

Central line agencies as well as provincial/state/regional governments are a crucial piece in realizing the implementation and feasibility of a peatlands management plan. Through partnership throughout the stages of the project design and implementation, governments will participate in strategic capacity and peatland management trainings with the goal of developing a sustainable framework for long lasting peatlands conservation throughout the region. Key executing agencies for the project include Ministry of Environment (MoE) and Ministry of Agriculture, Forestry and Fisheries (MAFF) in Cambodia, Ministry of Natural Resources and Environment (MoNRE) in Lao PDR, and Ministry of Natural Resources and Environmental Conservation (MoNREC) in Myanmar.

**Private sector stakeholders**

*Cambodia*: Since 2011, Koh Kong Province has been recognized as an ecotourism destination. Most of the Gulf of Thailand shoreline is protected by national parks and sanctuary designations. Eco-lodges and eco-treks are increasingly popular and their owners have a vested interest in improving their ecotourism services, such as diving, kayaking and trekking. Sand mining companies and other industry sectors are also relevant local stakeholders.

*Lao PDR*: Ecotourism is becoming increasingly pursued by small business owners in the areas surrounding and within the target sites. Improved peatland management efforts and dissemination can enhance ecotourism benefits on a small scale. Another private sector stakeholder is the Xe Pian-Xe Namnoi (390 MW) hydropower project on the border of Attapeu and Champasak provinces.

*Myanmar*: The business climate in Myanmar has experienced liberalization, leading to an increased number of entrepreneurs and small business owners. As of February 2015, 30 per cent of the established small and medium enterprises (SME) registered in Myanmar were operating in the target site regions. One of these private sector stakeholders, BS Green Organic Fertilizer, is working to lessen the use of chemicals and restore soil quality.

**International stakeholders**

International stakeholders include IUCN, which oversaw the project preparation process and will continue to serve as the GEF Implementing Agency during the implementation phase. IUCN will facilitate cooperation with other relevant projects in the three countries, such as Mekong WET, Mangroves for the Future (MFF), Climate Adaptation in Wetlands Areas (CAWA), and the Lower Mekong Basin Wetland Management and Conservation Project (MRWP). Particular emphasis will be placed on ensuring cooperation, coordination and exchange of information and lessons with the new GEF/IFAD projects on peatlands which are about to start in Malaysia (“Sustainable Management of Peatland Ecosystems in Malaysia”) and Indonesia (“Sustainable Management of Peatland Ecosystems in Indonesia”).

The Global Environment Centre (GEC) will be a key executing partner for the project, providing technical support and facilitating linkages with ASEAN frameworks such as the ASEAN Peatland Management Strategy and ASEAN Programme on Sustainable Management of Peatland Ecosystems (APSMPE). GEC is also closely involved with the execution of the GEF/IFAD peatland projects in Malaysia and Indonesia, and will therefore have a central role to play in ensuring linkages among the peatland initiatives in the region.

Other organizations, including IFAD, GIZ and BMUB, will play important roles as co-financers. In addition, there are a host of relevant INGOs and international organizations that will provide additional opportunities for important collaborations throughout the project, such as the Wildlife Conservation Society (WCS) and Wetlands International (WI) in Cambodia, the World Wildlife Fund (WWF) in Lao PDR, and UNESCO, ICIMOD and UNDP in Myanmar.

## Baseline analysis and gaps

While significant challenges exist with regard to sustainable peatland management in the target countries, there has been considerable progress made within the ASEAN framework to begin to address some of these challenges on a regional scale. A number of key milestones provide a solid basis for the project to build upon:

1. Adoption by the ten ASEAN Member States in 2013 of revisions to the ASEAN Peatland Management Strategy (2006-2020) (APMS) and establishment of an ASEAN Task Force on Peatlands (ATFP) to oversee its implementation.
2. Endorsement by Ministers from the ten ASEAN Member States of the ASEAN Programme on Sustainable Management of Peatland Ecosystems 2014-2020 (APSMPE) in 2013 to guide and support implementation of the APMS through multi-stakeholder partnerships.
3. Regular high-level meetings of ASEAN Member States at Ministerial level under the framework of the AATHP to review and monitor implementation of the APSMPE to prevent peatland degradation and fires.
4. Excellent results from regional projects to address peatland management challenges such as the GEF-IFAD funded ASEAN Peatland Forests Project and the EU funded SEApeat project, which have generated highly satisfactory outcomes and identified key options for scaling up and enhancing efforts.
5. Commitment of significant financing by government, private sector, and donors to support actions to address peatland degradation in the region.

Prior to 2009, peatlands were not officially identified in Cambodia, nor Lao PDR or Myanmar. Following the adoption of the APMS in 2006, the three countries requested assistance from the ASEAN Secretariat for surveys to be undertaken to confirm the presence and nature of peatlands in the countries. In 2008-2009, a rapid assessment was undertaken by the ASEAN Secretariat and Global Environment Centre (GEC) in partnership with the respective governments and supported by the ASEAN-Australia Development Cooperation program. This resulted in the initial identification of two peatland sites in Myanmar and three possible sites in Lao PDR.

Subsequently, in 2011 additional resources were secured from the European Union through GEC (the SEApeat project) and further surveys were undertaken in partnership with government agencies in the three countries. Surveys supported by the SEApeat project between 2011 and 2015 have been responsible for the identification of more than 20 sites covering more than 25,000 ha in the three countries. Significant sites identified include more than 9,500 ha of peatlands around Inle Lake in Myanmar, 10,000 ha of peatlands in coastal mangroves in Peam Krasop Wildlife Sanctuary and Botum Sakor National Park in Cambodia, and more than 500 ha of peatlands in Beung Kiat Ngong Ramsar site in Lao PDR. In addition, more than 15 smaller sites have been identified in the three countries. A further 50 locations have been identified for further survey. Many of the sites identified have unique and important biodiversity with many rare, endangered, and endemic species being recorded. The peatlands documented vary from: coastal mangrove peatlands in Cambodia; lake basin and freshwater swamp peatlands in Lao PDR; as well as peat swamp forest, floating peatlands and lake basin peatlands in Myanmar. In addition to the surveys, considerable progress has been made in training and awareness with training courses on peatland assessment provided to more than 200 people in the three countries and awareness programs being organized for nearly 1,000 local stakeholders.

The ASEAN framework is likely to be continued and extended after 2020. Therefore, the outcomes of this project will directly contribute to its implementation even beyond 2020.

### **Past and planned national actions and projects**

Despite the initial efforts to build awareness around the importance of peatlands conservation through projects such as SEApeat, specific government policies and plans that promote such conservation have yet to be developed in the three countries. Some work has been undertaken within existing protected areas through management approaches that happen to capture peatlands appropriately. However, in the business as usual case, it is unlikely that targeted peatland management approaches will be incorporated into the management plans for the protected areas and degradation of peatlands is likely to continue within the reserves. For the peatlands outside of reserves, the degradation is likely to proceed at a faster rate.

**Cambodia**

In Koh Kong Province, the Peam Krasop mangrove areas were designated in 1993 as a Wildlife Sanctuary within which Koh Kapik (southern part of PKWS) and adjacent areas were further designated as a Ramsar Site in 1999. However, at that time, it was not recognized that a large portion of the mangroves included peat up to two meters deep. In 2011, in the most recent management plan that was prepared – prior to peatland survey/identification – most of the peatland areas were designated to fall within Sustainable Use and Community zones. These zones allow the government to permit development and investment activities, as well as to issue land titles. Knowing the importance of peatlands and the ecosystem services they provide, this zoning layout may need to be reconsidered for PKWS in order to adequately protect important functions and values. Botum Sakor National Park, which also contains significant coastal mangrove peatlands, was established in 1993. To date, there is no management plan for this national park, and as such no proactive conservation approaches around peatlands.

Peatland management is partly addressed in Koh Kong Province as part of several recent and ongoing projects on nature conservation, forest management, and socio-economic development for communities living in and around peatland areas. Specifically, there have been some international activities in the coastal peatland mangrove areas, particularly in the Peam Krasop Wildlife Sanctuary. These projects concern preserving and rehabilitating the mangrove forest ecosystems and biodiversity, particularly species of fishing cat and dolphin.

In 2014, IUCN led the Building Resilience to Climate Change Impacts in Coastal Southeast Asia (BCR) project. This involved building the capacity of managers and local government staff at PKWS and initiating community livelihood projects for those living in and around the coastal mangrove areas.

Recently, Research and Human Resource Development (RHRD) also carried out a project related to the mangroves in Peam Krasop. This project focused on sustainable livelihood development and on improving the integrity of the mangrove ecosystem area. The project also contributed to improving the living conditions of the Toul Kouki Community Protected Area (CPA) (within PKWS) as well as to the sustainable management of the mangrove ecosystem.

The following table summarizes relevant projects related to the mangrove peatlands in Koh Kong Province, Cambodia.

*Table 2: List of projects related to mangrove peatlands in Koh Kong Province*

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name of projects** | **Donors** | **Duration** |
| 1 | Mangrove plantings in Koh Kong in cooperation with the Cambodian Government:  Reforestation of about 30 hectares of coastal area within the Peam Krasop Wildlife Sanctuary | Cambodia Government and OISCA Cambodia | 2005 - 2007 |
| 2 | Livelihoods and Landscapes Strategies (LLS) project (zoning of PKWS) | IUCN | 2007-2011 |
| 3 | Mangrove Resource Conservation and Coastal Environment Protection for Enhancing Local Community Livelihoods | GEF - Small Grants Programme | 2009 - 2010 |
| 4 | Mangroves for the Future (MFF) small grants | IUCN | 2010 - present |
| 5 | Mangrove Rehabilitation in Asia: conservation of coastal resources and mangrove restoration in Koh Kong Province | MAP Asia | 2011 |
| 6 | Building Resilience to Climate Change Impacts in Coastal Southeast Asia (BCR) | IUCN | 2011 - 2014 |
| 7 | Conservation of a newly recorded population of Fishing Cat (*Prionailurus viverrinus*) at Peam Krasop Wildlife Sanctuary | KLA TREY | 2015 |
| 8 | Transboundary dolphin conservation along the coastline of Thailand and Cambodia | Swedish Postcode Lottery Foundation, IUCN | 2015 - 2016 |
| 9 | Sustainable livelihoods through improving mangrove ecosystems  The project contributed to improving the living conditions of the Toul Kouki Community Protected Area (CPA), as well as to the sustainable management of mangrove ecosystems | Research and Human Resource Development (RHRD) | May 2015 to April 2016 |
| 11 | ADB Biodiversity Conservation Corridor Project (BCC) – includes livelihood improvement projects in communities near to peatlands in Andong Teuk (Botum Sakor National Park) and Boeung Kachhang (Peak Krasop Wildlife Sanctuary) | ADB in partnership with WCS and WWF | 2017-2019 |
| 10 | Mekong WET: Building Resilience of Wetlands in the Lower Mekong Region | IUCN (funded by BMUB IKI) | 2017-2020 |

**Lao PDR**

In Lao PDR, parts of Beung Kiat Ngong were designated as protected areas within the Xe Pian and the Dong Hua Sao National Protected Areas in 1993. In 2010, it was further recognized as a Ramsar site. IUCN worked with the local government to develop a management plan for the site in 2013, which refers to the issue of peat extraction from the site but does not prescribe specific peatland management or rehabilitation measures. As mentioned above, there have been various projects that have focused on improving wetlands management in the Ramsar Site, and also more generally throughout Lao PDR.

The following table summarizes relevant projects related more broadly to conserving wetlands within Lao PDR.

*Table 3: List of projects related to peatlands in Lao PDR/Beung Kiat Ngong*

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name of projects** | **Donors** | **Duration** |
| 1 | Mekong Wetland Biodiversity Programme | UNDP-IUCN | 2003-2005 |
| 2 | The project "Integrating Wetland Economic Values into River Basin Management” | IUCN | 2005 |
| 3 | Sustainable Management of Peatland Forest in Southeast Asia | EU | 2010 - 2014 |
| 4 | Mekong Integrated Water Resources Management Project | MRC | 2013 |
| 5 | Mekong Water Dialogues Project | IUCN | 2013 -2015 |
| 6 | Project to develop capacity and knowledge around wetland conservation in Lao PDR | Water and Wetlands Programme of IUCN | 2014 |
| 7 | Promoting Forest Landscape Restoration (FLR) in Selected Southeast Asian Countries | FAO | 2015 - 2017 |
| 8 | Climate Adaptation in Wetlands Areas (CAWA) in Lao PDR | FAO | 2016-2017 |
| 9 | Lower Mekong Basin Wetland Management and Conservation Project | KFW | 2016 - 2020 |
| 10 | ADB Biodiversity Conservation Corridor Project (BCC) – includes livelihood improvement projects in communities near the Ramsar site (in particular, Ban Thongxay and Ban Saming)\* | ADB | 2012-2019 |
| 11 | Mekong WET: Building Resilience of Wetlands in the Lower Mekong Region | IUCN (funded by BMUB IKI) | 2017-2020 |

\*The BCC activities undertaken since 2012 are:

Ban Thongxay

1. Preparation of Participatory Land Use Plan (PLUP) – 2014
2. Demarcation of forest land – signs and boundary posts
3. Issue of forest area Land Use Certificates (LUC) – in progress 2017
4. Established village forest patrolling in 2013
5. Set up Village Development Fund (VDF) of USD 5,000 in 2014 – monitoring responsibility recently transferred to LWU
6. Livelihood extension activities – pig raising group (5 HH) and fish raising (5 HH) established in 2016
7. Infrastructure – construction of 3 classroom kindergarten / school – currently under construction

Ban Saming

1. Preparation of Participatory Land Use Plan (PLUP) – 2013
2. Demarcation of forest land – signs and boundary posts
3. Issue of forest area Land Use Certificates (LUC) – 4 areas in 2014
4. Issue of individual and agriculture LUC – 279 plots – in 2013/2014
5. Established village forest patrolling in 2013
6. Set up Village Development Fund (VDF) of USD 5,000 in 2014 – monitoring responsibility recently transferred to LWU
7. Livelihood extension activities – pig raising group (5 HH) established in 2016
8. Infrastructure – improvement of village access road – completed pending installation of 1 culvert

**Myanmar**

Inle Lake in Myanmar was designated as a Wildlife Sanctuary in 1985, as an ASEAN Heritage Park in 2003, and a Man and Biosphere Reserve in June 2015. There has been ongoing work to manage the site – but since it was not recognized that more than half of the core area of the Wildlife Sanctuary was peatlands – the management measures did not take this into account and some had a negative impact on the peatlands as described in more detail above within Section 3.3.

During the project preparation grant (PPG) phase, the PPG team contacted numerous stakeholders including government officials, CSO representatives, and national consultants to research existing, past and planned projects in and around Inle Lake within Nyaung Shwe Township of southern Shan State. The following table summarizes the results of this information gathering effort.

*Table 4: Previous, existing and planned projects around Inle Lake.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Activity** | **Institution** | **Remarks** |
| 1915 | Introducing Cropping Design | Agriculture Department (AD) | British Colonial days |
| 1937 | Soil erosion control by Soil Erosion Control Division | Forest Department (FD) | This division disbanded in 1962 |
| 1947-49 | Formation of Soil Conservation Committee in 1949, and awareness raising events for erosion | FD, Government of Myanmar |  |
| 1951 | Shan State Soil Protection Act 1 enacted | Government of Myanmar | Not effectively implemented mainly for lack of funds, and integration |
| 1993-2002 | Watershed management for 3 critical areas of Shan region under HDI (Human Development Initiative project) | Government/ UNDP/FAO | Kalaw, Pway Hla/Aung Ban areas. The project completed 3 phases, after 2002 it changed names to ICDP. Project sites locate at Inle, Pintaya, Pinlong, Ywa Ngan, and Kalaw townships. |
| 1990s | Community Water Supply and Sanitation, also under HDI | UNDP | Villages around Inle lake |
| 2000-05 | 1st 5-year rolling plan | MONREC (formerly MOECAF) | Implementation by MONREC (fewer foreign aids available) |
| 2006-10 | 2nd 5-year rolling plan | MONREC (formerly MOECAF) | Implementation by MONREC (fewer foreign aids available) |
| 2010-15 | Comprehensive Action Plan for environmental conservation and sustainable management of Inle Lake | Government of Myanmar | Spurred by the critically low water levels at Inle Lake in 2010 |
| 2011 | The Central Steering Committee for Environmental Conservation and Sustainability of Inle Lake | Government of Myanmar | Union Minister as chair |
| 2011 | Formation of Supervisory Committee for the lake | Government of Myanmar | Shan Premier as Chair |
| 2011 | Providing loans to villagers in 11 villages of Nyaung Shwe | Ministry of Cooperatives | 21.4 million MMK at 2.5%/month interest rate |
| 2012-16 | Community forestry, agroforestry, trainings for nursery, road construction | UNDP & Government of Norway | Locations in Kalaw, Pintaya, Nyaung Shwe through EcoDev, |
|  | Water pond, nursery establishment | Ditto | ECCDI, EGG, Inn Sarpay, DLCDA, ILCDA, Golden Plain, |
|  | Seed bank, pest protection, horticulture, organic farming | Ditto | Dear Myanmar, Evergreen Group, Thitimay Women |
|  | Efficient cooking stoves, sewing training, bank erosion control | Ditto | Association, Inle Fresh Drinking Water Association, |
|  | Under Inlay lake rehabilitation and conservation project | Ditto | Business Dev. Technical Group, Do Taung Thu group, |
|  |  | Ditto | Pway Hla Environment Conservation Group, |
| 2013-2017 | Tree/bamboo planting, nursery practices | EU funding for pilot activities on climate change adaptation | Through ICIMOD and MIID and it is still an ongoing project in the village tract of Let Maung Kway |
| 2014-15 | Socio-economic survey, developing watershed plan, extension activities, trainings and workshops on tourism under “Eco-tourism Linked with Watershed Management in Myanmar” project | ASEAN-ROK Forest Cooperation (RFOCO) | Taunggyi, Pintaya and Pway Hla townships |
| 2014-16 | Study on plants to enhance local livelihoods on ethno-botany, conduct trainings under “Program on sustainable use of plant resources” with particular emphasis on the medicinal plants of Shan State and on botanical inventory and subsequent evaluation | JICA/MBK (Makino Botany) | TCP-Technical Cooperation Program, Pinlong and Pintay townships of Shan State |
| 2015-20 | Tree/bamboo planting and freshwater issues | EU funding/ Norway | MIID, 5 yr plan (2015-20) plan |
| 2015-17 | Current status, evolutionary origins, and conservation of freshwater fishes in Inle Lake, Myanmar | Kyoto, Kasetsart Universities & NWCD, FD | Ongoing project at 5 villages in the lake |
| 2017-22 | Study on Comprehensive Aquatic Conservation and Improvement of Inle Lake | CTI Engineering Co., Ltd., JAPAN | Under discussion with NWC Division, FD |
| 2014-17 | Resource management and land tenure for CC adaptation and mitigation | Tetra Tech ARD | One township in southern Myanmar and Let Maung Kway village tract of Nyaung Shwe |
| 2016-17 | GAP (Good Agriculture Practice) | AD, UNA | Ongoing project at Inle lake |
| 2015-18 | Water chemistry, water plants/macrophytes, phytoplankton, siltation, chemical residue measurement in water, Aqua monitor Si Database, Integrated Water Resources Management – institution building and training project | NIVA (Norway) | Ongoing project at Inle lake |
| 2016-18 | Developing and using experience in implementing REDD+ in the Himalayas | ICIMOD | Ongoing project |
|  | Community involved tourism project | GIZ | Ongoing project at 4 villages in Inle Lake |
|  | Community based tourism project | GIZ | Ongoing project at Pindaya township |
|  | Mango and tea value change project | GIZ | Taunggyi District |
| 2017-22 | Eastern States Agribusiness Project; focus on sloping agricultural land technology (SALT) to reduce erosion | IFAD | One of the goals of the project is to reduce sediment inputs into Inle Lake |
| Proposed Project | The project will focus on improving governance mechanisms within the Inle Lake watershed | UNDP supported by Government of Norway | The project is currently being finalized |
| Proposed Project | Capacity building, water quality monitoring, evaluation methodologies | Under discussion with IAEA | To be implemented at Inle lake |

Notes for abbreviations:

1. DLCDA: Danu Literature and Culture Development Association (Local Civil Society)
2. ECCDI: Ecosystem Conservation and Community Development Initiative (Local NGO)
3. EcoDev: Economically progressive ecosystem development (Local NGO)
4. EGG: Evergreen Group (Local NGO)
5. ICDP: Integrated Community Development Project
6. ICIMOD: The International Centre for Integrated Mountain Development (Intergovernmental Organization)
7. ILCDA: Inn-tha Literature and Culture Development Association (Local Civil Society)
8. MIID: Myanmar Institute of Integrated Development (Local NGO)
9. UNA: United Nilar Agribusiness (local private company)

In addition to the project activities mentioned in the table above, the Irrigation Department of Nyaung Shwe has been carrying out the following routine activities in and around Inle Lake within its government budget allocation:

1. Investigation and surveying works
2. Construction of silt traps and check dams (at the end of 2016, a total of 231 dams had been installed by the department)
3. Maintaining the constructed silt traps and check dams
4. Dredging activities
5. Demarcations along the main waterway
6. Collection of floating (unused) islands
7. Clearing aquatic weeds, and
8. Miscellaneous works

Similarly, the Inle Lake Wildlife Sanctuary office (located in Nyaung Shwe) under the Nature and Wildlife Conservation Division of the Forest Department and the local FD office has been carrying out the following routine activities within the Wildlife Sanctuary using its government budget allocation:

1. Regular inspection of the lake
2. Measuring water depth of the lake
3. Inspection of lake boundary
4. Inspection of the land use situation (related to encroachment)
5. Participation in eco-tourism enhancement
6. Capacity building of staff
7. Implementing activities of Inle Lake Biosphere Reserve
8. Establishment of forest plantations/distribution of tree seedlings to local people
9. Making silt trap dams
10. Protection of forests/organizing community and protected forests (e.g., West Inle Lake Protected Forest)

### **GEF interventions**

There have been numerous GEF interventions both in the three target countries as well as the wider region that are relevant to the project. Lessons from these have been considered in the project design. The following table summarises the most important past and ongoing projects of relevance to the Mekong Peatlands Project. The project will ensure coordination with ongoing initiatives through its Executing Partners and the Project Steering Committee. The regular meetings under ASEAN (i.e., ASEAN Task Force on Peatlands, but also its working groups on biodiversity and climate change) will provide a platform for collaboration with other GEF projects in the region and in the target countries. Furthermore, IUCN and GEC are involved in several of these projects and will ensure cooperation and coordination with these. The Terms of Reference of the National Project Directors and the Chief Technical Advisor include reference to coordination with other interventions and to exploring opportunities for collaboration with other regional and national projects.

*Table 5: GEF projects relevant to the Mekong Peatlands Project.*

| **Project title** | **Countries** | **GEF Agency** | **Dates** | **Budget** | **Project objectives and primary activities** | **Coordination measures** |
| --- | --- | --- | --- | --- | --- | --- |
| SFM Rehabilitation and Sustainable Use of Peatland Forests in South-East Asia (APFP project)  [https://www.thegef.org/project/sfm-rehabilitation-and-sustainable-use-peatland-forests-south-east-asia](https://opendevelopmentcambodia.net/topics/energy/) | Singapore, Vietnam, Indonesia, Thailand, Brunei Darussalam, Malaysia | IFAD | Approved in 2008, Aug 2008-Dec 2014 | USD 4,200,000 from GEF, USD 10,000,000 from co-financing | The goal of the project, which ended in 2014, was to reverse the loss and degradation of peatlands in South East Asian countries to avoid negative impacts on socio-economy, health and environment through capacity building and sustainable peatland management practices. | The project builds on the outcomes and lessons learned of this project. |
| GMS Forest and Biodiversity Program (GMS- FBP) - Creating Transboundary Links Through a Regional Support  [https://www.thegef.org/project/gms-forest-and-biodiversity-program-gms-fbp-creating-transboundary-links-through-regional](https://www.thegef.org/project/sustainable-management-peatland-ecosystems-malaysia-smpem) | Thailand, Vietnam, Lao PDR, Cambodia, China, Myanmar | ADB | Approved in 2014, May 2014 – Current | USD 917,431 From GEF, USD 30,738,000 from co- financing | To strengthen transboundary cooperation for the sustainable management of a network of priority conservation landscapes in the Greater Mekong Subregion (GMS) | Lessons learned helped inform the project. |
| Tonle Sap Conservation Project  [https://www.thegef.org/project/tonle-sap-conservation-project](https://www.iucn.org/sites/dev/files/gef_peatlands_sia_report_final.pdf) | Cambodia | UNDP | Approved 2002, April 2014 – Dec 2011 | USD 3,200,000 from GEF, USD 15,500,000 from co-financing | The project assisted the Government of Cambodia to conserve and sustainably manage biodiversity and natural resources in one of the world's most important biodiversity sites. Objectives were: (i) to support economic development and natural resources management; (ii) to strengthen community-based natural resources management systems for rural development; and (iii) to conserve globally significant biodiversity through protection and/or sustainable use of resources in threatened components of the ecosystem and critical habitats. The project worked to strengthen institutional capacity at key levels such as government and local communities and long-term management of the core and buffer areas of the Tonle Sap. | Lessons learned from project. |
| Promoting Climate-Resilient Water Management and Agricultural Practices  [https://www.thegef.org/project/promoting-climate-resilient-water-management-and-agricultural-practices](http://data.worldbank.org/country/cambodia) | Cambodia | UNDP | Approved 2007, April 2009 – June 2013 | USD 1,800,000 from GEF, USD 2,200,000 from co-financing | To reduce the vulnerability of Cambodia’s agricultural sector to climate–induced changes in water resources availability. | Lessons learned from project. |
| Collaborative Management for Watershed and Ecosystem Service Protection and Rehabilitation in the Cardamom Mountains, Upper Prek Thnot River Basin  [https://www.thegef.org/project/collaborative-management-watershed-and-ecosystem-service-protection-and-rehabilitation](https://opendevelopmentcambodia.net/topics/mining/) | Cambodia | UNDP | Approved 2012, July 2014 - Current | USD 1,100,000 from GEF, USD 4,900,000 from co-financers | To restore and maintain forest cover and watershed stability functions while providing for sustainable livelihoods and ecosystem services in the Upper Prek Thnot Watershed | Lessons learned from project. |
| Strengthening the Adaptive Capacity and Resilience of Rural Communities Using Micro Watershed Approaches to Climate Change and Variability to Attain Sustainable Food Security  [https://www.thegef.org/project/strengthening-adaptive-capacity-and-resilience-rural-communities-using-micro-watershed](http://www.ramsar.org/) | Cambodia | FAO | Approved 2011, March 2014 - Current | USD 5,000,000 from GEF, USD 25,700,000 from co-financing | To build adaptive capacity of rural communities and reduce their vulnerability to climate change and variability through integrated micro watershed management and climate resilient agriculture practices to ensure food security in Cambodia. | Lessons learned from project. |
| Reducing the Vulnerability of Cambodian Rural Livelihoods through Enhanced sub-national Climate Change Planning and Execution of Priority Action  [https://www.thegef.org/project/reducing-vulnerability-cambodian-rural-livelihoods-through-enhanced-sub-national-climate](https://www.iucn.org/gef-iucn-partnership/about/iucn-and-gef) | Cambodia | UNDP | Approved 2015, March 2015 - Current | USD 6,000,000 from GEF, USD 16,000,000 from co-financing. | Sub-national administration systems affecting investments in rural livelihoods are improved through climate sensitive planning, budgeting and execution | Lessons learned from project. |
| Strengthening National Biodiversity and Forest Carbon Stock Conservation through Landscape-based Collaborative Management of Cambodia’s Protected Area System as Demonstrated in the Eastern Plains Landscape (CAMPAS Project)  [https://www.thegef.org/project/strengthening-national-biodiversity-and-forest-carbon-stock-conservation-through-landscape](https://www.iucn.org/what/global_programme/resources/) | Cambodia | UNEP | Approved 2012, Aug 2015 – Current | USD 4,700,000 from GEF, USD 15,000,000 from co-financers | To enhance Cambodia’s PA management effectiveness and secure forest carbon through improving inter-sectoral collaboration, landscape connectivity and sustainable forest management; works in Mondulkiri Conservation Landscape | Lessons learned from project. |
| GMS-FBP: Strengthening Protection and Management Effectiveness for Wildlife and Protected Areas  [https://www.thegef.org/project/gms-fbp-strengthening-protection-and-management-effectiveness-wildlife-and-protected-areas](https://www.thegef.org/project/sfm-rehabilitation-and-sustainable-use-peatland-forests-south-east-asia) | Lao PDR | World Bank | Approved 2014, Feb 2014 - Current | USD 6,900,000 from GEF, 27,500,000 from co-financing | To strengthen the management systems for national protected areas conservation and for enforcement of wildlife laws. | Lessons learned from project. |
| Climate Adaption in Wetland Areas (CAWA)  [https://www.thegef.org/project/climate-adaptation-wetlands-areas-cawa](https://www.thegef.org/project/development-national-biodiversity-strategy-and-action-plan-nbsap) | Lao PDR | FAO | Approved 2014, Oct 2015 - Current | USD 4,700,000 from GEF, co-financing USD 15,000,000 | To reduce climate change (CC) vulnerability of communities and the fragile wetland eco-systems upon which they depend. | The project will coordinate closely with this project. |
| Sustainable Forest and Land Management in the Dry Dipterocarp Forest Ecosystems of Southern Lao PDR  [https://www.thegef.org/project/sustainable-forest-and-land-management-dry-dipterocarp-forest-ecosystems-southern-lao-pdr](https://www.thegef.org/project/strengthening-national-biodiversity-and-forest-carbon-stock-conservation-through-landscape) | Lao PDR | UNDP | Approved 2014, March 2016 - Current | USD 11,000,000 from GEF, USD 89,000,000 from co-financing | To facilitate a transformative shift towards sustainable land and forest management in the forested landscape of Savannakhet Province in order to secure the critical wildlife habitats, conserve biodiversity and maintain a continuous flow of multiple services including quality water provision and flood prevention. | Lessons learned from project. |
| Strengthening Agro-climatic Monitoring and Information Systems to Improve Adaptation to Climate Change and Food Security in Lao PDR  [https://www.thegef.org/project/strengthening-agro-climatic-monitoring-and-information-systems-improve-adaptation-climate](https://www.iucn.org/sites/dev/files/gef_peatlands_sia_report_final.pdf) | Lao PDR | FAO | Approved 2014, July 2016 - Current | USD 5,400,000 from GEF, co-financing USD 16,000,000 | To enhance monitoring, analysis, communication and use of agro-meteorological data and information for decision making in relation to agriculture and food security at national and provincial levels. To improve monitoring and analysis of agricultural production systems by strengthening Land Resources Information Management System (LRIMS) and Agro-Ecological Zoning (AEZ) to support agriculture policies and adaptation to climate change in agriculture. | Lessons learned from project. |
| Adapting Community Forestry Landscapes and Associated Community Livelihoods to a Changing Climate, in particular an Increase in the Frequency and Intensity of Extreme Weather Events  [https://www.thegef.org/project/adapting-community-forestry-landscapes-and-associated-community-livelihoods-changing-climate](https://www.thegef.org/project/collaborative-management-watershed-and-ecosystem-service-protection-and-rehabilitation) | Myanmar | UNEP | Approved in 2013, Dec 2013 - Current | USD 5,087,500 from GEF, USD 19,211,000 from co- financing | To increase the resilience of Community Forestry and associated local community livelihoods to climate change-induced risks in the Central Dry Zone, Rakhine Coastal State, and Ayeyarwady Region. | Lessons learned from project |
| Mitigation-focused Rural Productivity and Ecosystems Services Enhanced in Central Dry Zone Forest Reserves  [https://www.thegef.org/project/rural-productivity-and-ecosystems-services-enhanced-central-dry-zone-forest-reserves](https://www.thegef.org/project/strengthening-adaptive-capacity-and-resilience-rural-communities-using-micro-watershed) | Myanmar | ADB | Approved in 2016, Aug 2016 - Current | USD 4,787,000 from GEF, USD 45,700,000 from co-financing | To enhance rural productivity and ecosystems services in the Central Dry Zone forest reserves through integrated approaches to natural resources management (NRM) | Lessons learned will be used in the project and opportunities explored for regional collaboration. |
| Development of the National Biodiversity Strategy and Action Plan (NBSAP)  [https://www.thegef.org/project/development-national-biodiversity-strategy-and-action-plan-nbsap](https://www.thegef.org/project/gms-forest-and-biodiversity-program-gms-fbp-creating-transboundary-links-through-regional) | Myanmar | UNEP | Approved in 2008,  March 2008 - Current | USD 200,000 from GEF, USD 50,000 from co- financing | The goal of the project is to enable Myanmar to better meet its immediate obligations under the Convention on Biological Diversity, especially in relation to Article 6: General measures for conservation and sustainable use. | The NBSAP helped inform the proposed investment. |
| Support to GEF Eligible Parties (LDCs & SIDs) for the Revision of the NBSAPs and Development of Fifth National Report to the CBD - Phase II  [https://www.thegef.org/project/support-gef-eligible-parties-ldcs-sids-revision-nbsaps-and-development-fifth-national-0](https://www.thegef.org/project/tonle-sap-conservation-project) | Myanmar, among 26 others world wide | UNEP | Approved in 2012, Feb 2010 – July 2015 | USD 6,118,200 from GEF, USD 5,513,640 from co- financing | The overarching goal of integrating CBD Obligations into National Planning Processes through Enabling Activities was to enable GEF eligible LDCs and SIDs to revise the National Biodiversity Strategies and Action Plans (NBSAPs) and to develop the Fifth National Report to the CBD. | The NBSAP helped inform the proposed investment. |
| Strengthening Sustainability of Protected Area Management  [https://www.thegef.org/project/strengthening-sustainability-protected-area-management](https://www.thegef.org/project/promoting-climate-resilient-water-management-and-agricultural-practices) | Myanmar | UNDP | Approved in 2013, Sept 2014 – Current | USD 6,127,850 from GEF, USD 17,896,300 from co-financing | Strengthen the terrestrial system of national protected areas for biodiversity conservation through enhanced representation, management effectiveness, monitoring, enforcement and financing | Lessons learned from project. |
| Fish Adapt: Strengthening the Adaptive Capacity and Resilience of Fisheries and Aquaculture-dependent Livelihoods in Myanmar  [https://www.thegef.org/project/fishadapt-strengthening-adaptive-capacity-and-resilience-fisheries-and-aquaculture-dependent](http://data.worldbank.org/country/myanmar) | Myanmar | FAO | Approved in 2015, Aug 2016 – Current | USD 6,000,000 from GEF, USD 12,885,000 from co-financing | To enable inland and coastal fisheries and aquaculture stakeholders to adapt to climate change by understanding and reducing vulnerabilities, piloting new practices and technologies, and sharing information. | Lessons learned from project. |
| Sustainable cropland and forest management in priority agro-ecosystems of Myanmar  [https://www.thegef.org/project/sustainable-cropland-and-forest-management-priority-agro-ecosystems-myanmar](https://www.thegef.org/project/sustainable-forest-and-land-management-dry-dipterocarp-forest-ecosystems-southern-lao-pdr) | Myanmar | FAO | Approved in 2015, Apr 2015 – Current | USD 6.183 mil $ from GEF, USD 13.611 mil $ from co-financing | To build the capacity of farming and forestry stakeholders to mitigate climate change and improve land condition by adopting climate smart agriculture and sustainable forest management policies and practices. | Lessons learned will be considered. |
| Sustainable Management of Peatland Ecosystems in Malaysia (SMPEM)  [https://www.thegef.org/project/sustainable-management-peatland-ecosystems-malaysia-smpem](http://www.worldbank.org/en/country/myanmar/overview) | Malaysia | IFAD | Concept approved in 2016 | USD 9,433,027 from GEF, co-financing USD 47,850,000 | To strengthen national policy and institutional capacity for implementing peatland related strategies and plans and to enhance integrated sustainable peatland management in targeted landscapes. | Lessons learned will be considered. |
| Sustainable Management of Peatland Ecosystems in Indonesia (SMPEI)  [https://www.thegef.org/project/sustainable-management-peatland-ecosystems-indonesia-smpei](https://www.thegef.org/project/fishadapt-strengthening-adaptive-capacity-and-resilience-fisheries-and-aquaculture-dependent) | Indonesia | IFAD | Project approved in 2016 | USD 4,766,756 from GEF, co-financing USD 21,745,000 | To conserve and significantly reduce GHG emissions from peatlands through sustainably managing peatlands and meeting the livelihood needs of adjacent communities. | Lessons learned will be considered. |
| Maximizing Carbon Sink Capacity and Conserving Biodiversity through Sustainable Conservation, Restoration, and Management of Peat-swamp Ecosystems  [https://www.thegef.org/project/maximizing-carbon-sink-capacity-and-conserving-biodiversity-through-sustainable-conservation](https://www.thegef.org/project/gms-fbp-strengthening-protection-and-management-effectiveness-wildlife-and-protected-areas) | Thailand | UNDP | Approved in 2014, 2014 – Current | USD 3,224,400, from GEF, co-financing USD 13,382,711 | To conserve and restore peatlands to increase their capacities to act as carbon sinks, as habitats for globally important species, and as sources of ecosystem services for improved livelihoods. | Lessons learned will be considered. |

### **Gaps to be filled**

Despite the positive progress from the preliminary surveys and trainings via SEApeat and other earlier projects, there remain significant challenges for long-lasting peatlands preservation and their sustainable use in the target countries. Substantial areas still need to be surveyed to identify peatland areas and those areas that have been identified need to be conserved and managed in an appropriate manner. Existing protected areas that comprise peatlands (e.g., Peam Krasop Wildlife Sanctuary and Botum Sakor National Park in Cambodia, Beung Kiat Ngong Ramsar Site in Lao PDR, and Inle Lake Wildlife Sanctuary in Myanmar) need to update their management plans to proactively address the unique threats and required management measures to protect these fragile ecosystems.

In response to the APMS and the initial work on peatland assessments, the Mekong countries have yet to prepare peatland-related national strategies and national action plans. Such policies and plans are a critical piece to achieving sustainable peatland conservation measures in each of the three countries. The following table summarizes where each country is in this process.

*Table 6: Status of National Action Plans on Peatlands of participating countries*

|  |  |  |
| --- | --- | --- |
| **Country** | **Status** | **Remarks** |
| Cambodia | Peatland assessment initiated under SEApeat Project | Significant coastal peatlands identified in 2014 and 2015 and a further five potential peatlands identified for further surveys. Additional assessments are needed to finish a comprehensive, nation-wide peatland survey before plan preparation. |
| Lao PDR | Preliminary peatland assessment initiated under SEApeat Project | National consultations were conducted in August 2012 and July 2015. Field assessments were conducted that identified peatlands scattered in central and southern parts of the country. Additional assessments are needed to finish a comprehensive, nation-wide peatland survey before plan preparation. |
| Myanmar | Peatland assessment initiated under SEApeat Project | NAPP is planned after nation-wide assessment is completed. Significant peatlands have been identified at more than seven sites in five regions/states and a further 30 sites have been identified for further surveys. |

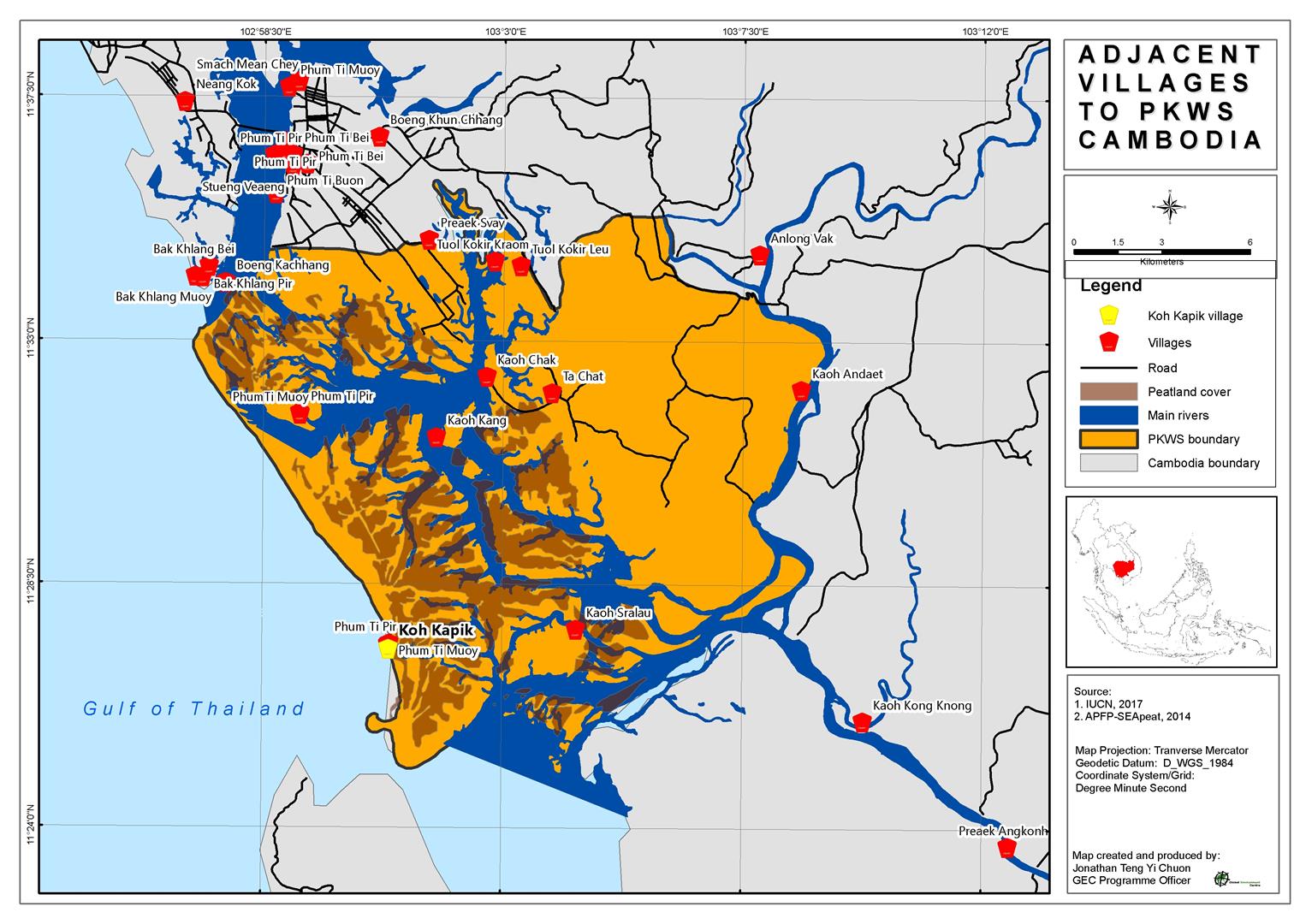
In addition to updating relevant protected area management plans to incorporate peatlands and the development of the country NAPPs, revisions to additional polices, strategies and action plans that impact on peatlands such as national guidelines on wetlands or climate change mitigation/adaptation plans, are also urgently needed in the target countries.

Finally, while the ASEAN framework for peatlands initiatives (listed above) has provided a good starting place for regional exchanges, continued support for such cross-country knowledge sharing is essential to confront the issues of peatland degradation and loss of associated environmental benefits from a regional platform.

# Biophysical and Socio-economic Characteristics of the Field Sites

## Peam Krasop Wildlife Sanctuary, Cambodia

A total of 4,976 ha of peatlands have been documented within Peam Krasop Wildlife Sanctuary (PKWS) as shown in the map below.



***Figure 8: Peatlands in Peam Krasop Wildlife Sanctuary***

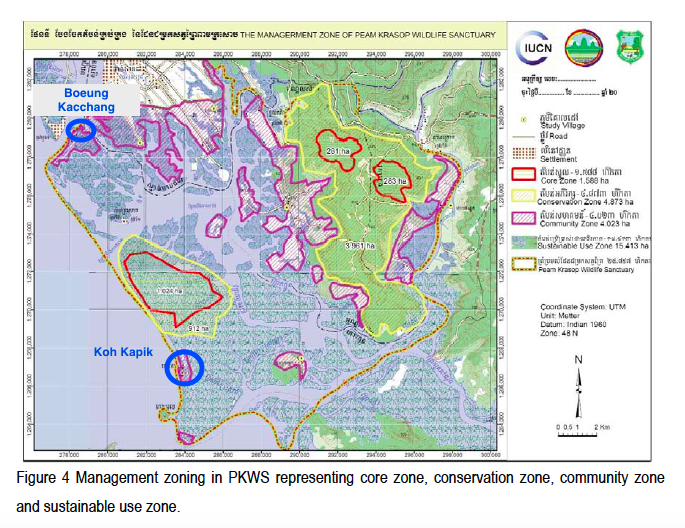
The peatlands of PKWS are unique in Southeast Asia for occurring in mangroves; there is only one other known place where this occurs in the region (Botum Sakor National Park, also in Cambodia). These important areas provide for significant carbon storage and associated climate change mitigation as well as essential habitat for unique species of flora and fauna. In PKWS, apart from considerable floral biodiversity, twenty-four species of mammals, at least twenty-eight species of birds, and a large number of marine species have been identified in the sanctuary (Dara *et al*., 2009). A number of the identified species are globally threatened.

The following table summarizes data collected on the peatlands of PKWS demonstrating the unique ecology and critical importance of this site.

**Peam Krasop Wildlife Sanctuary**

|  |  |
| --- | --- |
| **Name of site:** | Peam Krasop Wildlife Sanctuary/ Koh Kapik and Associated Islets Ramsar Site |
| **Category:** | Protected Area |
| **Country** | Cambodia |
| **GPS point:** | 11o26-34’, 102o59’-103o04’ |
| **Location:** | Koh Kong Province, Cambodia |
| **Total area of peatland:** | **4,976 ha** |
| **Site description:** | Peam Krasop Wildlife Sanctuary (PKWS), which is located in Koh Kong Province, is one of the 23 protected areas under the management of the Ministry of Environment in Cambodia. PKWS was established by Royal Decree on 1 November 1993 and covers an area of 25,897 hectares. A majority of PKWS is also designated as a Ramsar Site (Koh Kapik and Associated Islets Ramsar Site). PKWS includes two forest types: mangrove forest to the west and evergreen forest to the east.  The mangroves of Peam Krasop Wildlife Sanctuary consist of four types of vegetation: 1) stunted *Rhizophora apiculata* only; *2)* stunted *Ceriops tagal* only; 3) stunted *Ceriops tagal* or *Rhizophora apiculata* withtall *Lumnitzera littorae;* and 4) mixed species of *Hibiscus tliaceus, Xylocarpus granatum* and *Melaleuca cajuputi.* |
| **Significant value of the sites:** | Peatland was discovered within mangrove areas of PKWS and is one of only two peatlands in SE Asia in mangroves.  Carbon storage: 32 locations were assessed with gauge auger, where peat depth was found to be in the range of 44cm to 200cm, with an average depth of 115cm. Carbon storage is likely to be in excess of 1000tC/ha or a total of more than 5 million tonnes of carbon.    Apart from considerable floral biodiversity, twenty-four species of mammals, at least twenty-eight species of birds and a large number of marine species have been identified in the sanctuary (Dara *et al.,* 2009). A number of the identified species are globally threatened.  The following rare and threatened species have been recorded:  **Birds:**  Nordmann’s Greenshank *Tringa guttifer* EN  Giant Ibis *Thaumatibis gigantea* CR  Sarus Crane *Grus antigone* VU  Green Peafowl *Pavo muticus* EN  **Mammals:**  Dhole *Cuon alpinus* EN  Sambar Deer *Rusa unicolor* VU  Sunda Pangolin *Manis javanica* EN  Pig-tailed Macaque *Macaca leonina* VU  Clouded Leopard *Neofelis nebulosa* VU  Indochinese silvered Langur *Trachypithecus germaini* EN  Fishing cat *Prionailurus viverrinus* EN  Irrawaddy Dolphin *Orcaella brevirostris* VU |
| **Major issues:** | Aquaculture, mangrove harvesting and other land clearing activities within the protected area and sand mining activities adjacent to the wildlife sanctuary. |

During the PPG phase mission to Cambodia in December 2016, the PPG team held stakeholder consultations with key representatives from national government, Koh Kong Province government, and PKWS (including commune officials, WS managers, and local villagers). Based on these consultations, the communities of Boeung Kachhang and Koh Kapik were selected as pilot site locations. (An additional community in Botum Sakor National Park was also selected but subsequently determined to be outside the scope of this project; although it will be the focus of some of the project’s awareness-raising activities.)

******

*Figure 9: Management zoning in PKWS representing core zone, conservation zone, community zone and sustainable use zone*

Stakeholder consultations provided important information on common threats to peatlands in Koh Kong Province, which included both local-level impacts (e.g., small-scale peat extraction for organic fertilizer, small-scale agricultural encroachments and aquatic species collection), along with industry-related impacts from external sources such as sand mining and land concessions for larger-scale agricultural uses that impact peatlands.

Suggested project activity options generally fell into four broad categories: increased regulation/planning and enforcement; awareness-raising programs; aquaculture development for livelihood improvement; and investment in ecotourism services, again for livelihood improvement.

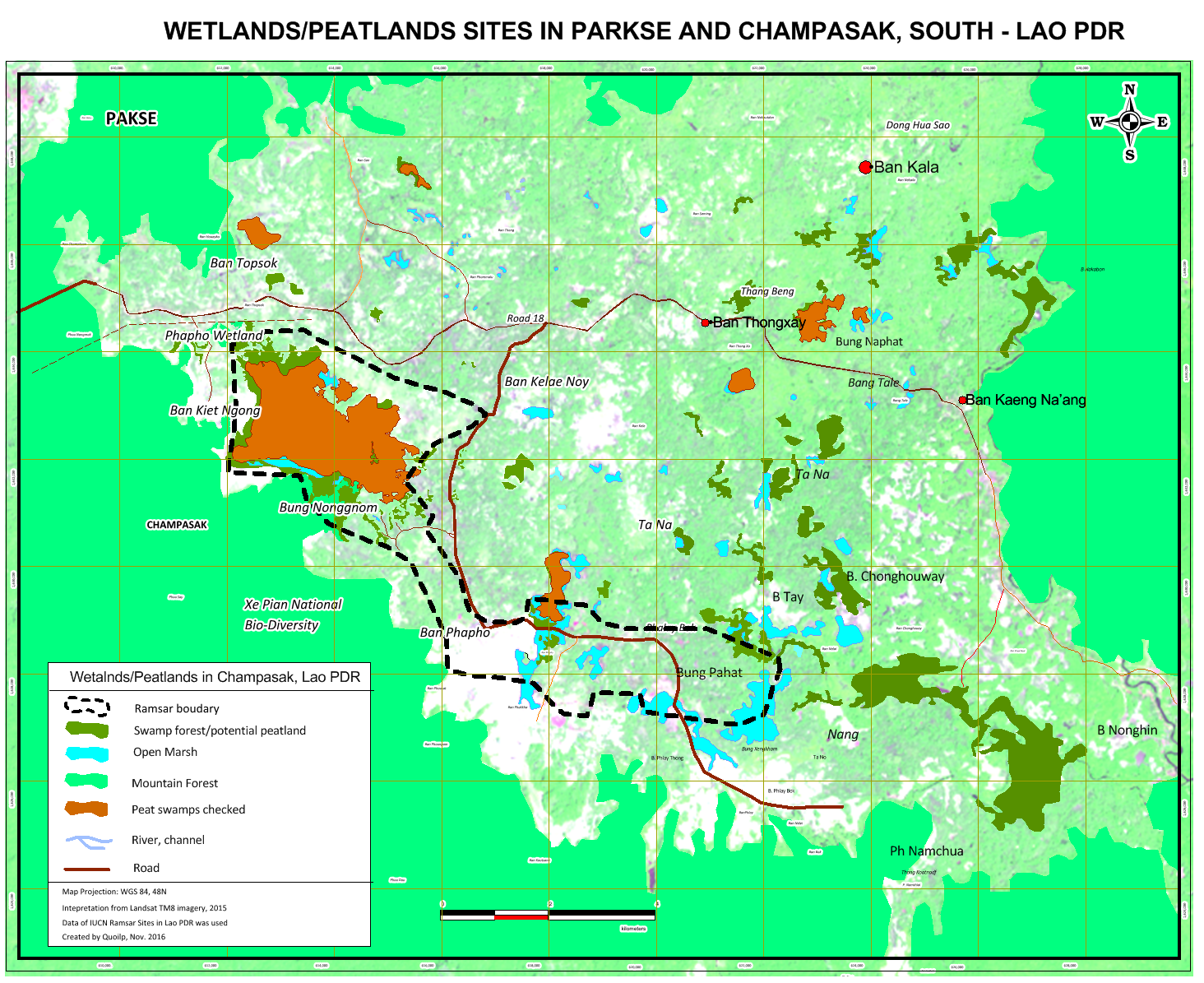
Key stakeholders targeted both Boeung Kachhang and Koh Kapik within PKWS as viable sites due to various reasons. First, these particular villages are surrounded by peatland mangrove ecosystems, and the community members frequent these areas for small-scale aquaculture activities and collection of NTFPs. Some villagers may also be extracting peat for use as organic fertilizer along with conducting some minor agricultural encroachments. Second, the communities have been involved with other projects in the past related to dolphin conservation, ecotourism and other types of livelihood development. Stakeholders felt this would be a good opportunity to build on work that has been started but that would benefit from additional support and awareness raising around peatlands (which have not been a focus of past projects, so would be a value-added activity). The project will also enable incorporation of peatland-specific management actions into the PKWS management plan; this is currently lacking in the present plan for PKWS. Finally, Koh Kapik falls within the Koh Kapik Ramsar Site and as such has been identified as an internationally important wetland site. The location of one of the pilot communities within the Ramsar Site proper will help support efforts to enhance sustainable management of globally unique resources.

A mission was carried out in May 2017 to consult communities, gather further data on the socio-economic context of the two villages, and assess potential social impacts. The resulting report is available at Appendix 9 and describes the communities’ use of the peatland resources, potential threats to the ecosystem as well as the concerns and needs of particular stakeholder groups.

## Beung Kiat Ngong Ramsar Site, Lao PDR

The Beung Kiat Ngong wetlands are located in a large floodplain in Champasak Province of southern Lao PDR. They are made up of a large freshwater marsh and a seasonal wetland with a number of scattered ponds and paddy fields. The site is especially important for fish, which rely on the permanent wetlands for survival during the dry season. It is also important for fish spawning, which takes place both inside the wetlands, and outside during the wet season when some of the fish migrate to upstream tributaries to spawn. Fish species identified from the site include walking catfish (*Clarias* spp.), snakehead (*Channa striata*), and swamp eels (*Monopterus albus*). The site supports vulnerable and endangered species (e.g., the Malayan snail-eating turtle and the yellow-headed temple turtle). The wetlands support some 11,500 villagers who live in close proximity and are primarily reliant for their income on wild-capture fisheries, subsistence agriculture and non-timber forest products.

In 2015, the SEApeat project conducted surveys and confirmed that roughly 500 ha of the Beung Kiat Ngong Ramsar Site are peatlands, comprising the largest peatland area identified in Lao PDR to date. In addition, numerous smaller areas have been identified as “potential peatlands” scattered throughout the landscape and in close proximity to the Ramsar site. While smaller, these areas have the potential for providing significant functions and values unique to peatland ecosystems when considered cumulatively as part of an overall landscape mosaic. The map below depicts the areas that have been confirmed peatland within and near to the Ramsar site, and those areas that are considered potential peatland and require further investigation. The three villages labelled Ban Thongxay, Ban Kala, and Ban Kaeng Na’ang in the map have been selected as pilot sites by the project and will be discussed in more detail further below.



***Figure 10: Wetland/peatland sites in Pakse and Champasak, Lao PDR***

The following table summarizes data collected on the peatlands of Beung Kiat Ngong:

**Site profile Ban Kiat Ngong, Beung Kiat Ngong, Pathoumphone District**

|  |  |
| --- | --- |
| **Name of the site:** | Beung Kiat Ngong at Kiat Ngong village, Pathoumphone District, Champasak Province. |
| **Category:** | Protected Area and High Conservation Value Area (HCVA) |
| **Country:** | Lao PDR |
| **GPS point** | Geographic coordinates: latitude from 14° 45' 7.6" to 14° 46' 36" N, and longitude from 106° 2' 29" to 106° 4' 27" N. |
| **Location & access:** | Ban Kiat Ngong, Pathoumphone District, Champasak Province. Accessible by car, tractor, motorbike, and by foot. |
| **Total area (ha):** | 482.9 ha |
| **Background of the site:** | Across the entire site, the elevation ranges from 164 to 165 m (above mean sea level). Plants are dominated by species of seasonal grasses. Shrubs (e.g., *Sesbania sp.*) and wood trees can be found scattered in the grassland. Additional plant species include *Nephrolepis falcata, Imperata cylindrica*, *Hydrilla verticillata, Monochoria hastata, etc.*  Peat materials can be found in the surface horizon of the wetlands in the northeastern part of the site. The thickness of peat is about 100 cm. From 0 to 52 cm, the materials contain high organic carbon content and plant residues, and the peat is brown in colour. Below 50 cm, the amount of plant residue is reduced, and most of the peat is very dark brown. This part of the profile shows high organic carbon content and low content of plant residues.  Similar to other areas of peatlands surveyed in the country, a portion of the Kiat Ngong peatland has been exploited in the past for production of organic fertilizers.  In the southwestern part of the site, the peatlands are covered by a clay-silt horizon. The peat layer begins to present itself at a depth of 90 cm from the soil surface. The thickness of the peat layer is 140 cm. |
| **Significant value of the site** | *Notes: Beung Kiat Ngong at Pathoumphone District, Champasak Province falls within the Ramsar site which has international importance*  Biodiversity ( ✓ )  Hydrology ( ✓ )  Soil ( ✓ )  Socio-economic ( ✓ ) |
| **Designated use (status):** | ( ✓ ) International recognition (e.g. RAMSAR, MBR, etc.)  ( ✓ ) HCVA  ( ✓ ) Community Conservation Area/Forest |
| **Major issues:** | - Peatland areas are unknown by the local government and communities;  - Peat soil has been extracted in the past for organic fertilizer production;  - There is no peatland management plan;  - Economic values of peatland ecosystem services are unknown. |
| **Site jurisdiction and administration (ownership):** | - Beung Kiat Ngong is a Ramsar site; therefore, this area has received a fair amount of attention by national and provincial level government, as well as village authorities. A Ramsar committee provides additional oversight. |
| **Facilities & activities available on site:** | Currently, facilities are limited on site. Activities conducted include: fish capture, tourism, paddy field practice, and livestock grazing. |
| **Institution responsible:** | Natural Resources and Environment Office of Pathoumphone District, Champasak Province in coordination with Kiat Ngong village authority. |

During the PPG inception mission in Vientiane in December 2016, key stakeholders from central government indicated an interest in selecting pilot sites outside of the Ramsar site to avoid overlap with other donor-funded projects already focused there. The PPG team and government officials travelled to Champasak Province in January 2017 to investigate alternative areas for demonstration sites. The team explored areas in both Paksong District (Bolaven Plateau) of Champasak Province (where there had been reports of yet-to-be-surveyed peatlands) as well as other areas within Pathoumphone District that were adjacent to but outside of the Ramsar site (falling within the wider contiguous area of potential peatlands).

The results of this additional investigation indicate that there are indeed peatlands that require more comprehensive survey in both Paksong and Pathoumphone Districts, and that these should be incorporated into the nation-wide survey that will be undertaken by the project. However, due to the known importance and relative size of the Beung Kiat Ngong peatlands coupled with the financial constraints of the project, it was decided to keep the focus on areas around the Ramsar site. However, the specific communities selected for livelihood development activities would be ones that were not in the direct vicinity of the Ramsar site and therefore had received less attention from other donor-funded projects in the past.

The ultimate selection of the three villages - Ban Thongxay, Ban Kala and Ban Na’ang - as demonstration sites resulted from the community consultations carried out during the Social Impact Assessment. These communities are connected with one of the peripheral peatlands to Beung Kiat Ngong, known as Bung Naphat (or Bung Paphat) complex (including about 12 separate peatland sites). Bung Naphat falls outside of the Ramsar site, which affords the opportunity to further explore the importance and value of these peripheral peatlands and their contribution to landscape-level ecosystem services. Other issues of importance will be explored such as whether it makes sense to widen the Ramsar boundary to include these smaller but potentially critical areas. The villagers of the selected communities frequent Bung Naphat for fishing and other uses. They have also expressed interest in developing alternative livelihood options to support their community development.

The Social Impact Assessment report in Appendix 9 provides further details on the socio-economic context of the three villages, the ways in which they use the peatland areas and potential threats to the ecosystem. The report also highlights the concerns, needs and aspirations of social groups within the communities, including women, youth and vulnerable groups. The report is publicly accessible at: [https://www.iucn.org/sites/dev/files/gef\_peatlands\_sia\_report\_final.pdf](https://www.thegef.org/project/adapting-community-forestry-landscapes-and-associated-community-livelihoods-changing-climate)

## Inle Lake Wildlife Sanctuary, Myanmar

Inle Lake in Myanmar was designated as a Wildlife Sanctuary in 1985, as an ASEAN Heritage Park in 2003, and as a Man and Biosphere Reserve in June 2015. The lake combines rich historic and cultural values with significant environmental values, as a result of its high biodiversity and its provision of ecosystem services. It would qualify as a wetland of international importance for migratory water birds. It contains the largest area of peatland so far described in Myanmar. Peat and sediment from the lakebed are used to construct floating gardens by spreading them on top of portions of floating mats of vegetation. Data from the Nyaung Shwe Agricultural Department indicate that 132 villages are engaged in this floating garden cultivation, covering a total area of some 3,640 ha. Tomatoes are the principal crop, but beans and a variety of other vegetable are also grown.



The flora of the lake is very diverse and has a very high biomass. There are a variety of water birds including the endangered Sarus Crane. Estimates of fish diversity range from 23 to 42 species with 16 endemic species. Thus, there is roughly 50% specific endemism in Inle Lake, making it one of the most important lakes in Southeast Asia for fish endemism.

Despite its unique cultural and natural heritage, the lake has been degrading over time due to numerous and complex factors including: heavy chemical inputs to floating garden beds leading to eutrophication, siltation from unsustainable agricultural practices in the surrounding watershed, and rapid development of the tourism industry. There have been substantial efforts to manage and restore Inle Lake and extensive planning such as through the development of the Long Term Restoration and Conservation Plan of Inle Lake (MOECAF 2014). However, since it was not recognized during earlier planning phases that over half of the core area of the Wildlife Sanctuary is peatlands, the management measures have not taken this into account, with some negative impacts on peatlands as a result.

The following table summarizes data collected on the peatlands of Inle Lake:

**Inle Lake Wildlife Sanctuary, ASEAN Heritage Park, Man and Biosphere Reserve**

|  |  |
| --- | --- |
| **Name of the site:** | Inle Lake |
| **Category:** | Protected Area/High Conservation Value Area (HCVA) |
| **Country:** | Myanmar |
| **GPS point** | N 20° 39.573'; E 96° 55.136' |
| **Location & access:** | On the Shan plateau of east Myanmar (Southern Shan State), in the Thanlwin River Basin. Located more than 884m above sea level, Inle Lake is situated between two limestone mountain ranges around 1,500m high. |
| **Total area (ha):** | 9,100ha of peatland and 7,500ha of lake in a lake basin of about 300,000ha |
| **Background of the site:** | Inle Lake is the second largest freshwater lake in Myanmar.  The local people are from the indigenous Intha ethnic group who are world renowned for their skills in rowing their boats with their feet and making floating gardens from peat. |
| **Designated use (status):**  ( \* ) National Park/State Park ( \* ) International recognition (ASEAN Heritage site)  ( \* ) HCVA ( \* ) Watershed/Water Catchment  ( \* ) Wildlife Reserve/Forest Reserve ( \* ) Community Conservation Area/Forest | |
| **Major issues:** | Degradation of the surrounding catchment is leading to increased silt loads affecting peat and lake water quality. Expansion of farming practice leading to drainage and burning of peatlands. Intensification of agriculture is leading to increased pollution from agrochemicals. Increasing tourism adds pressure but also opportunities. Sustaining the lake is essential to sustaining local community’s livelihoods and sources of income, as well as maintaining a globally significant peatland. |
| **Site jurisdiction and administration (ownership):** | The lake forms part of the Inle Lake Wildlife Sanctuary, declared in 1985, primarily for the protection of bird fauna. There is a committee to oversee developments around the lake. The environmental and rural development plan for Inle Lake and the catchment area has been developed by the divisional management committee (main committee). Under that committee, 11 township wise management committees have been formed. Each management committee consists of representatives from the General Administration Department, Forest Department, Irrigation Department, Myanmar Agriculture Enterprise, Department of Fisheries, Department of Agricultural Land Management and Statistics, Department of Agriculture Mechanization, Basic Education Department, People’s Health Department, and NGOs.  The peatlands, lake and portions of the surrounding catchment were declared as Myanmar’s first Man and Biosphere Reserve in June 2015. |
| **Institution responsible for the site:** | Nature and Wildlife Conservation Division of the Ministry of Natural Resources and Environmental Conservation (MONREC), Nyaung Shwe Township, Shan State, Myanmar |

Based on the PPG phase inception mission spanning January and February 2017 including extensive cross-sectoral stakeholder consultation with national, subnational, and local representatives, the following sites were chosen for pilot site activities:

* Taung Po Gyi Village
* Let Maung Kway Village Tract
* Five communities that work with floating gardens within Inle Lake

***Taung Po Gyi Village*** is situated in the western part of Inle Lake. The village is located between Khaung Taing Road and Inle Lake. Taung Poe Gyi is composed of two villages called Taung Poe Kyi (South) and Taung Poe Kyi (North). During the flooding season stretching from September to November, villagers from this village are unable to do farming. The number of households is 200 with a total population of 570. The village has an elementary school and a village health care centre. Almost all the villagers from Taung Poe Gyi have experience in growing tomatoes, cauliflowers, cabbages, pepper and flowers. There are two main sources of water for the village. One is from the mound spring peatland and another one is a natural water source that flows from the nearest mountains.

Taung Poe Gyi is unique in that it has a substantial mound spring peatland in its center that the community members revere and consider sacred. The size of the mound spring peatland of Taung Poe Gyi has been estimated at 1.8 ha during the project design mission and is part of a larger area of peatlands yet to be determined in detail. Over time, the peat has subsided, in large part due to water withdrawal; the villagers are quite concerned with the trend and would like to preserve and restore the area. Threats identified during the mission based on consultation with villagers at Taung Po Gyi are as follows:

* Water extraction on the community’s large mound spring peatland; over the years, the dome has been subsiding and becoming drier and harder
* Many separate wells were observed on the dome for village water supply
* As it becomes drier and harder, people can drive on it with their motorbikes and animals walk across it and compact it further
* Small-scale peat extraction occurs on land adjacent to the dome for farmers to sell for fertilizer when they need the extra income
* Larger-scale peat extraction may be occurring on land to the north of Taung Po Gyi that is owned by a fertilizer company
* Community members also mentioned that fire is a problem, and can burn for an extended period on the peatlands around Taung Po Gyi (outside of the mound spring peatland itself)

Due to the significance of the mound spring peatland of Taung Po Gyi, and the high level of interest from the community members to work with the project, the village has been selected as a focal area to help develop a restoration and sustainable management plan for the dome and surrounding peatlands. The project will also help develop alternative livelihood practices in collaboration with the community members’ inputs. These activities are described in more detail under Section 5 on the project’s intervention strategy.

***Let Maung Kway*** is located in Heho area at 1,200–1,500 m asl in the upper watershed above Taung Po Gyi. It is comprised of some 400 households (approximately 2,000 individuals), divided among five sub-villages: Pan Tin; Thayet Pin; Kyaung Taung; Kyaung Nar; and Ann Pat. In addition, Zeyar village is closely associated with Let Maung Kway, although it is not formally part of the village-tract.

Agriculture is the principal land-use. Major crops include: cereals (upland rice, wheat and maize); oil seeds (groundnut and niger); pulses (pigeon pea and rice bean); spices (ginger and turmeric); and vegetables (butterfly bean, cucumber, cauliflower, chillies, tomato and mustard). All farmers are small-holders, farming areas less than 2 ha in size.

In response to market demands as well as a number of different project interventions, there is an increasing trend toward perennial crops such as avocados. Bamboo is an important non-timber forest product, and has the potential both to ameliorate ecological stress and to alleviate poverty by providing a source of alternative income.

Some of the agricultural practices used by villagers on the hillslopes in Let Maung Kway result in erosion and sedimentation of downslope areas, affecting both peatlands and Inle Lake. Because of the critical importance to address this widespread problem throughout the Inle Basin, the project has selected Let Maung Kway as a focal area to experiment with sustainable management practices that minimize impacts to downslope peatlands. Many of the villagers use a clan-wise land tenure system in Let Maung Kway. However, pilot demonstration areas will likely be implemented on land that is under Forest Department jurisdiction. Any pilot established on private/clan-owned land would occur only after consultation with and authorization by the local villagers.

***The floating village sites*** were selected based on their current participation in a short-term Good Agriculture Practice pilot project, which is promoting the reduced use of chemical inputs to grow vegetables on floating peat gardens. The five villages are:

(1) Pay Pin Inn: 46 households (218 individuals)

(2) Zayat Gyi: 153 households (534 individuals)

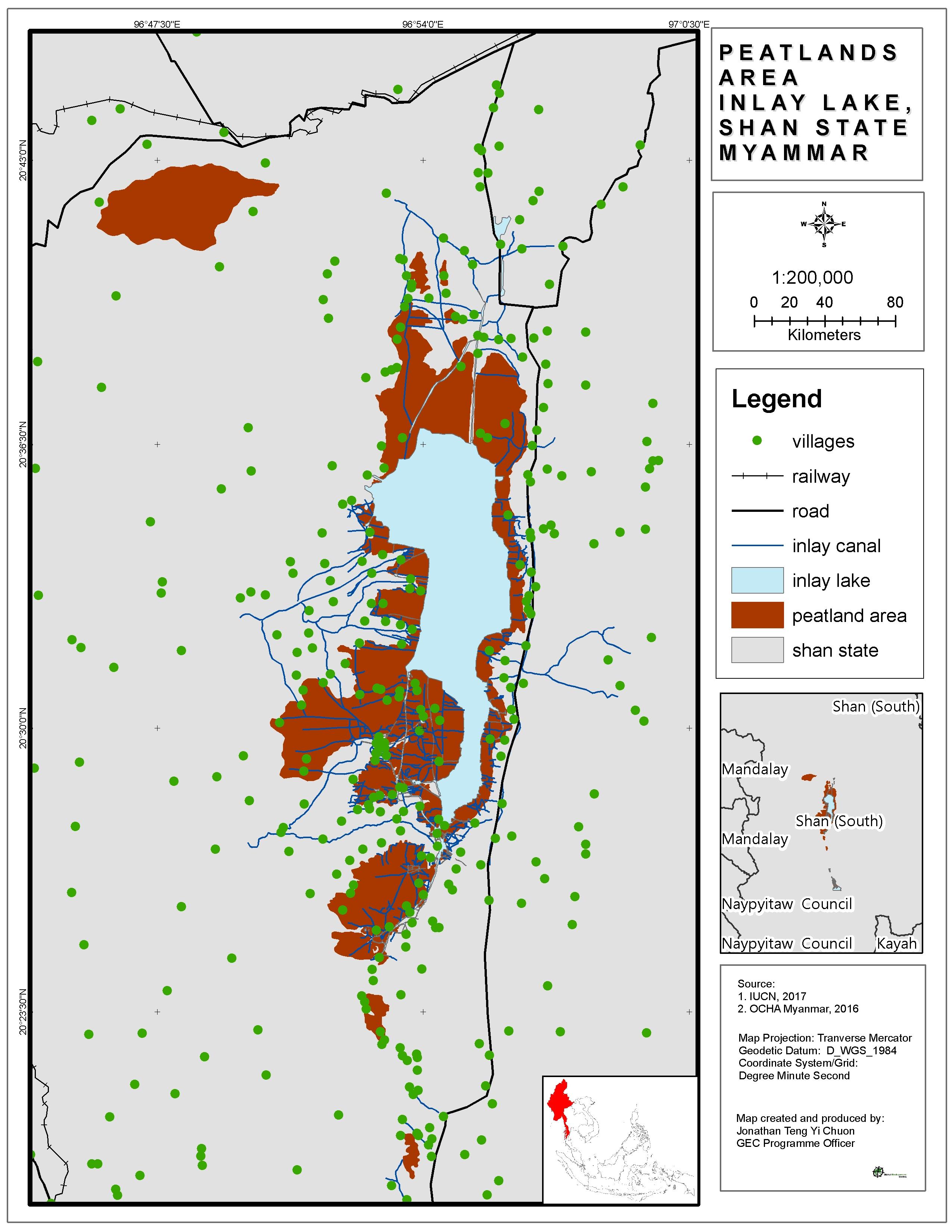
(3) Kyay Sar Myout: 448 households (1,859 individuals)

(4) Kay Lar: 613 households (2,723 individuals)

(5) Nga Phal Chaung: 69 households (287 individuals)

During the PPG mission, the team observed the participants’ progress and enthusiasm for continuing their work with bio-fertilizers and bio-insecticides. The Department of Agriculture indicated that additional funding and technical support would be needed to carry out the pilot project effectively and to develop aspects related to market development and further experimentation with growing techniques. These efforts on reducing chemical inputs into floating garden production on the lake are critical to addressing a range of threats, including:

* Heavy use of fertilizers and pesticides on floating vegetable gardens;
* Eutrophication of the lake, driven by excess fertilizer use;
* Negative health effects on farmers using excessive chemical inputs.



*Figure 11: Peatlands and villages of Inle Lake and surrounding areas*

# Intervention Strategy (alternative)

## Project rationale and expected global environmental benefits

The project will contribute to the protection of globally significant peatlands and associated carbon stocks and biodiversity. The key global environmental benefits will arise from the protection, rehabilitation and sustainable management of key peatland areas. The project will support the implementation of the Aichi Biodiversity Targets, in particular Target 11 on protected areas and Target 15 on the conservation and restoration of degraded ecosystems.

Enhanced management of peatlands through the project (through fire prevention, avoided mining, aquaculture and other developments on peat, and reduced forest and peatland degradation) will reduce net GHG emissions. The project is expected to mitigate approximately 874,980 metric tons of CO2eq from the targeted peatlands and countries. In order to be conservative, the project has only targeted direct emissions during the project period rather than direct/indirect emissions over a 20-year period. Without the project interventions, 874,980 tons of CO2eq would be released into the atmosphere in the business-as-usual scenario from the areas described below.

The GHG emission reduction for the project has been calculated through application of the IPCC 2013 Supplement to the 2006 Guidelines for National Greenhouse Gas Inventories: Wetlands (the Wetlands Supplement). The Wetlands Supplement was developed upon the request of UNFCCC to undertake further methodological work on wetlands, focusing on the rewetting and restoration of peatland.

The selection of GHG emission assessment methodology for the project followed the GEF Guidelines for GHG emissions accounting and reporting (May 2015). As a project that develops policy, and capacity development for peatland management, and that influences conservation area and land management areas in peatlands in targeted countries, the project incorporated the methodologies from the Wetlands Supplement for CO2 and non-CO2 emissions from fires on drained inland organic soils.

The following assumptions were applied to the GHG emissions reduction assessment of the project:

* The methodology is based on the IPCC 2013 Wetlands Supplement.
* All GHG emissions are converted to tons of CO2e for the project.
* The CO2e reductions reported are cumulative reductions, estimated for the project period only and not the lifetime of the investments.
* There is no discounting for future risks and changes in GHG emissions.

Given the characteristics of the soil type in the project areas (i.e. organic/wet soil, non-flooded land, not constructed for wastewater treatment, non-coastal land), the assessment refers to Drained Inland Organic Soils (Chapter 2) and Rewetted Organic Soils (Chapter 3) of the Wetlands Supplement. The land-use categories applied are thus organic wet soil and organic drained soil.

These calculations are based on the following assumptions and detailed methodologies

1. Fire prevention emission reduction[[1]](#footnote-1) is based on an estimated reduction, for the duration of the project, in fire covering 150 ha of peatlands (out of 9000 ha) in the Inle Lake Basin in Myanmar and 30 ha in Beung Kiat Ngong and associated wetlands in Lao PDR. This will be avoided, through interventions aimed at reducing fire risk and discouraging land clearing by burning by local communities. Reductions will be determined compared to a baseline established in the assessment at the beginning of the project period. The calculation assumes avoidance of fires affecting surface vegetation on semi-open peatlands with estimated emission reduction of 125 tons CO2/ha (through burning of 4cm peat depth/ha or burning of forest/reed carbon stock of 34[[2]](#footnote-2) tons of C/ha or combination of the two). The emission reduction factor of 103 tCO2/ha is based on i) the default values for peatland carbon stock of 11.37 tC/cm[[3]](#footnote-3) of peat depth over an area of one ha multiplied by ii) the carbon to carbon dioxide conversion factor of 3.67 tCO2/tC multiplied by iii) an estimated burning depth of 4 cm[[4]](#footnote-4). ***Summary:*** *11.37 tC/cm depth/ha x 3.67 tCO2/tC x 3 cm depth burnt =* ***125 tCO2/ha or*** *34 tC/ha x 3.67 tCO2/tC =* ***125 tCO2/ha****.*
2. The emissions reduced from avoided mining of peat is based on an estimated reduction in area mined of 30 ha in Lao PDR and 50 ha in Myanmar over the duration of the project, through interventions aimed at improving management and awareness around peatlands and the negative impacts of mining and alternative organic fertiliser sources and through the implementation of national level regulations. The emission reduction factor is based on avoided emission from mined peat for fertilizer and other uses. It assumes that the entire amount of peat mined is released to the atmosphere as CO2. It assumes avoided mining in peatlands with depth of 200cm[[5]](#footnote-5) multiplied by i) carbon stock of 11.37 tC/ha/cm depth multiplied by ii) the carbon to carbon dioxide conversion factor of 3.67 tCO2/tC = 8,346 tCO2/ha. ***Summary:*** *200cm x 11.37 tC/cm depth/ha x 3.67 tCO2/tC =****8,346 tCO2/ha***.
3. It is estimated that 60 ha of conversion of mangrove peatlands in coastal Cambodia for aquaculture, sand mining and other developments will be avoided for the duration of the project, through interventions aimed at improving management and awareness on peatlands; and through the implementation of national level regulations. It assumes that avoided aquaculture ponds and other developments would have been in mangrove peatland deposits with average depth of 110 cm and carbon stock of 7.63[[6]](#footnote-6) tons of carbon per ha per cm depth multiplied by ii) the carbon to carbon dioxide conversion factor of 3.67 tCO2/tC = 3,080 tCO2/ha. ***Summary****:* *110cm x 7.63 tCO2/cm/ha x 3.67 tCO2/tC =* ***3,080 tCO2/ha***.

The estimated reduction of CO2eq through the project activities in the targeted sites and countries is shown in the table below.

*Table 7: Estimated emission reduction linked to project activities\**

| **Mitigation measures** |  | | **Country or site (ha)** | | | | | **Total Ha** | **Emission reduction factor tCO2eq/ha** | **Total**  **Emission reduction tCO2eq** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BKN** | **Inle Lake** | | **Peam Krasop** | **Cambodia** | **Lao PDR** | **Myanmar** |
| Fire prevention | 30 | 150 | |  |  |  |  | 180 | 125 | 22,500 |
| Reduced peat mining |  |  | |  |  | 30 | 50 | 80 | 8,346 | 667,680 |
| Reduced conversion for aquaculture and other developments |  |  | |  | 60 |  |  | 60 | 3,080 | 184,800 |
| **TOTAL** | **30** | **150** | |  | **60** | **30** | **50** | **320** |  | **874,980** |

\*updated during project design, based on confirmed site-based activities and revised emission factors

## Project goal and expected impact

The project objective is to sustainably manage peatland ecosystems in targeted countries and to conserve biodiversity and reduce GHG emissions. To achieve this objective, the project has been structured into four components. These are described below in the context of their specific outcomes and outputs, as well as the proposed activities relevant to each project output.

## Project components, their expected outcomes and outputs and planned activities

**Component 1: Assessment and documentation of peatlands in targeted countries**

**Outcome 1. Peatland ecosystems are better documented in the three target countries supporting enhanced recognition and management**

Under Component 1 of the project, peatlands will be identified, and nation-wide peatlands maps will be prepared for each of the three countries. Field-based surveys to fine-tune peatland boundaries in targeted geographic areas will be conducted, and assessments of selected peatlands in each country will also be completed. The project estimates that, upon completion of this component, 28,000 ha of peatlands will be identified and assessed.

**Output 1.1 Surveys to identify peatland ecosystems in Cambodia, Lao PDR and Myanmar undertaken**

Surveys will be conducted within targeted regions of the three countries (Cambodia, Lao PDR, Myanmar). These will generally follow a three-step approach: (1) Remote sensing-based analysis to identify potential peatlands in the three countries and prioritization of key geographic areas for on-the-ground survey; (2) field surveys with participation of related stakeholders; and (3) on-the-ground surveys in the targeted geographic areas to assess peatlands in further detail. Local communities (men and women) will be involved in the surveys in order to ensure an inclusive process and the use of local knowledge.

Activities will include:

* + 1. Develop training modules on peatlands survey and assessment at the regional level for stakeholders at different levels and translate these into national languages

This activity will involve the following sub-tasks:

* + 1. *Review and update existing training modules that have been developed in the region through prior peatland projects (e.g., SEApeat) and update as appropriate*
    2. *Translate and adapt as appropriate for use in selected countries*
    3. Prepare maps of targeted regions of selected countries (Cambodia, Lao PDR, and Myanmar) at a scale of 1:1,000,000 (Cambodia and Lao PDR) and 1:1,250,000 (Myanmar) displaying potential peatlands

This activity will involve the following sub-tasks:

* 1. *Conduct national training on remote sensing and GIS analysis, incorporating newly available technologies and data, in order to build capacity at the national level*
  2. *Acquire satellite imagery for each of the three countries in collaboration with identified partners such as the Mekong SERVIR project*
  3. *Analyse satellite imagery and review other related data sets to identify potential peatland areas*
  4. *Produce a preliminary indicative peatlands map for each country*
  5. *Where needed (particularly in less known areas of Myanmar), conduct rapid ground-truthing surveys*
  6. *Based on the results of the remote sensing-based analysis, prioritize areas for on-the-ground survey in each of the three countries*
     1. Conduct on-the-ground surveys in Cambodia, likely to target areas not surveyed before including those in: (1) coastal areas within Peam Krasop Wildlife Sanctuary, Botum Sakor National Park and areas further to the east; (2) Tonle Sap swamp forests; and (3) selected areas along the Mekong River

This activity will involve the following sub-tasks:

1. *Conduct training for the teams to be involved in field assessments*
2. *Conduct on-the-ground surveys to confirm and refine peatland boundaries and confirm the nature and characteristics of the peatland system. It is estimated that 30 days of field time will be required for the Cambodia survey for a team of 5-7 people (2-3 project staff, and 3-4 district and commune level support staff).*
3. *Produce short reports and maps at an anticipated scale of 1:50,000 for the areas subject to the field survey*
   * 1. Conduct on-the-ground surveys in Lao PDR, likely to target: (1) Vientiane Province; (2) areas in the Beung Kiat Ngong landscape; and (3) other areas within Paksong District of Champasak Province or the central part of Lao PDR

This activity will involve the following sub-tasks:

* 1. *Conduct training, as necessary, for the survey team*
  2. *Conduct on-the-ground surveys to confirm and refine peatland boundaries and confirm the nature and characteristics of the peatland system. It is estimated that 35 days of field time will be required for the Lao survey for a team of 5-7 people (2-3 project staff/specialists, and 3-4 district and commune level support staff).*
  3. *Produce short reports and detailed maps at a scale of 1:50,000 for the areas subject to the field survey*
     1. Conduct on-the ground surveys in Myanmar, likely to target: (1) remaining areas in the Inle Lake Watershed that were not previously surveyed under prior assessments; (2) Pyin Oo Lwin Township of Mandalay Region; (3) Bokpin and Palaw Townships of the Thanintharyi Region (southern Myanmar); (4) Indawgyi Lake in Kachin State (northern Myanmar); and (5) Kyaukme Township of Northern Shan State

This activity will involve the following sub-tasks:

* 1. *Conduct a nation-wide training session for field survey personnel in Nay Pyi Taw or at Inle area in Nyaung Shwe Township*
  2. *Conduct on-the-ground surveys to confirm and refine peatland boundaries and confirm the nature and characteristics of peatland system. It is estimated that 80 days of field time will be required for the Myanmar survey for a team of 5-7 people (2-3 project staff/specialists, and 3-4 township/local level support staff).*
  3. *Produce short reports and maps at a scale of 1:250,000 for the areas subject to the field survey*

**Output 1.2 Important peatland sites assessed and documented**

The project will conduct a rapid functions and values assessment for seven sites across the three countries. The sites to be assessed will include the three sites selected for management actions under Component 3, as well as four other sites (two for Myanmar and one each for Cambodia and Lao PDR), which will be selected from the newly documented peatlands identified in the surveys under Output 1.1 (based on their size, value, and function). The assessments will include evaluation of biophysical condition, ecosystem services (flood control, water supply, climate change mitigation, NTFPs) and relevance to local communities. Local communities (men and women) will be involved in the surveys in order to ensure an inclusive process and the use of local knowledge.

Activities will include:

* + 1. Undertake assessments of the three sites selected for management actions under Component 3

This activity will involve the following sub-tasks:

* 1. *Undertake surveys to assess the functions and values related to habitats, biodiversity, carbon storage, and climate change mitigation for each site (PKWS, Beung Kiat Ngong and Inle Basin)*
  2. *Document the findings*
     1. Undertake assessments of four other important peatland sites selected based on the surveys under Output 1.1

This activity will involve the following sub-tasks:

* 1. *Undertake surveys to assess the functions and values related to habitats, biodiversity, carbon storage, and climate change mitigation for each site (four sites in total)*
  2. *Document the findings*
     1. Produce one report per country summarizing the results of the national peatlands functions and values assessments, and identifying priorities for conservation and restoration

This activity will involve the following sub-tasks:

* 1. *Prepare report and recommendations based on assessments for each site*
  2. *Organize meetings at the national level to finalize reports*

**Component 2: Capacity development and policy and legal frameworks**

**Outcome 2. Capacity and policy/legal frameworks for sustainable peatland management strengthened**

The project intends to increase the capacity of key stakeholders in the assessment and sustainable management of peatlands, through training workshops at national and sub-national levels. It also aims to increase awareness and understanding of the values and functions of peatland ecosystems, by preparing and disseminating information and awareness-raising materials. Moreover, the project will seek to strengthen policy and legal frameworks for the sustainable management of peatlands through national strategies, action plans and national and sub-national policies and regulations.

**Output 2.1 Key stakeholders at various levels trained on peatland assessment, rehabilitation and management and their awareness and understanding of functions and importance of peatland ecosystems enhanced**

Currently there is limited knowledge around peatlands, including what they are exactly, how they are distinguished from the larger ecosystem category of wetlands, and why they are important. This lack of awareness occurs across all three target countries and at multiple levels including at the national, sub-national, and community levels. Building capacity and awareness will be important not only among government officials and local communities, but also within the private sector, civil society and the donor community at large.

Prior trainings on peatlands assessment and management were conducted under SEApeat in all three of the target countries. More trainings are needed to include additional stakeholders, particularly at the district, commune and township levels in key geographic areas. An estimated 50 stakeholders each will be trained in Cambodia and Lao PDR, and an estimated 125 stakeholders in Myanmar. Stakeholders will be targeted from the primary governmental offices that work most consistently in the field with agricultural producers and other local land managers, as well as the private sector and civil society.

Activities will include:

* + 1. Collate and develop information and training materials related to peatlands

This activity will involve the following sub-tasks:

* 1. *Review and update existing training modules that have been developed in the region through prior peatland projects (e.g., SEApeat) and update as appropriate*
  2. *Collate and review information and awareness materials on peatland use and management produced at country or regional level*
  3. *Organise a regional workshop to compile, review and update materials suitable for use in the Mekong countries*
  4. *Share the materials with countries for further adaptation or translation*
     1. Conduct training and awareness-raising activities to improve understanding of peatlands and their sustainable management in Cambodia

This activity will involve the following sub-tasks:

1. *Produce training and awareness materials in Khmer language suitable for both the national and sub-national governance level regarding peatlands functions and values and their importance for conservation (for both areas that are protected and areas that are under agricultural use)*
2. *Disseminate to national and sub-national level stakeholders via a national workshop / training (and through other events/activities in collaboration with other platforms and projects)*
3. *Produce awareness materials in Khmer language suitable for the commune official and local villager level to present in community workshops under Component 3. Awareness raising materials should be tested with communities before being finalised in order to ensure that they are culturally appropriate.*
   * 1. Conduct training and awareness-raising activities to improve understanding of peatlands and their sustainable management in Lao PDR

This activity will involve the following sub-tasks:

* 1. *Produce training and awareness materials in Lao language suitable for both the national and sub-national governance level regarding peatlands functions and values and their importance for conservation*
  2. *Disseminate to national and sub-national level stakeholders via a national workshop / training (and through other events/activities in collaboration with other platforms and projects)*
  3. *Produce awareness materials in Lao language suitable for the local villager level to present in community workshops under Component 3. Awareness raising materials should be tested with communities before being finalised in order to ensure that they are culturally appropriate.*
     1. Conduct training and awareness-raising activities to improve understanding of peatlands and their sustainable management in Myanmar

This activity will involve the following sub-tasks:

1. *Produce training and awareness materials in Myanmar language suitable for both the national and sub-national governance level regarding peatlands functions and values and their importance for conservation*
2. *Disseminate to national and sub-national level stakeholders via a national workshop / training (and through other events/activities in collaboration with other platforms and projects)*
3. *Produce awareness materials in Myanmar language suitable for township level officials and local villagers to present in community workshops in and around Inle Basin (under Component 3) as well as other areas in Myanmar where there are known significant peatland resources. Awareness raising materials should be tested with communities before being finalised in order to ensure that they are culturally appropriate.*
4. *Organize sub-national awareness-raising workshops targeting township officials and local communities in important peatland areas of Myanmar*

**Output 2.2 National strategies and/or action plans for protection and sustainable use of peatland ecosystems prepared and peatlands mainstreamed into national and sub-national policies and regulations**

All three target countries have endorsed the ASEAN Peatland Management Strategy 2006-2020 (APMS), requiring each member country to produce a National Action Plan on Peatlands (NAPP) by 2020. The project directly supports these efforts in developing country-specific NAPPs. While all three countries are in draft stage of developing wetland guidelines, strategies and/or action plans, to date there is limited consideration of peatlands specifically in these documents. Therefore (as with other ASEAN countries like the Philippines), the national action plan on peatlands could be integrated within the framework of the national wetland plan or strategy where appropriate.

In addition, peatlands are not currently included in regulatory frameworks in the target countries; there is limited protection of these ecosystems and, in some cases, industry-level impacts are overlooked or sanctioned by government (e.g., sand mining in Cambodia, peat extraction in both Lao PDR and Myanmar). The project will therefore support the mainstreaming of peatlands into other sectoral policies as appropriate.

Activities will include:

* + 1. Develop guidance for mainstreaming peatlands into national policies and plans suitable for the Mekong regionbased on the ASEAN framework and experiences of other countries in the region

This activity will involve the following sub-tasks:

1. *Review National Action Plan on Peatland (NAPP) preparation process in other ASEAN countries and identify experiences and lessons learned that can assist Mekong countries in preparing their plans*
2. *Collate information on possible policy gaps or conflicts related to peatland management in the Mekong region or other similar ASEAN countries*
3. *Develop guidance for mainstreaming peatlands into national policies and plans suitable for the Mekong region*
   * 1. Mainstream peatlands into policies and plans and develop NAPP in Cambodia

This activity will involve the following sub-tasks:

* 1. *Based on the results produced through the peatland survey and assessments related to Outputs 1.1-1.2, identify the key regions and ecosystem types where peatlands occur and the main management requirements and threats to their integrity*
  2. *Identify the major sectors and types of activities which may impact peatlands in Cambodia (including mining, environment, agriculture, forestry, nature conservation, water resource management and fishery) and analyse the degree to which current regulations and policies incorporate (or not) peatland management issues*
  3. *Organise consultations of appropriate stakeholders to review the needs, constraints and opportunities for peatland management in Cambodia*
  4. *Identify and review key strategies and plans in Cambodia and develop recommendations for strengthening their peatland conservation provisions*
  5. *Develop National Action Plan on Peatlands in Cambodia and support the mainstreaming of peatlands into other policies and regulations*
     1. Mainstream peatlands into policies and plans and develop NAPP in Lao PDR

This activity will involve the following sub-tasks:

* 1. *Based on the results produced through the peatland survey and assessments related to Outputs 1.1-1.2, identify the key regions and ecosystem types where peatlands occur and the main management requirements and threats to their integrity*
  2. *Identify the major sectors and types of activities which may impact peatlands in Lao PDR (including agriculture, forestry, livestock, nature conservation, water resource management and fishery) and analyse the degree to which current regulations and policies incorporate (or not) peatland management issues*
  3. *Organise consultations of appropriate stakeholders to review the needs, constraints and opportunities for peatland management in Lao PDR*
  4. *Identify and review key strategies and plans in Lao PDR and develop recommendations for strengthening their peatland conservation provisions*
  5. *Develop National Action Plan on Peatlands in Lao PDR and support the mainstreaming of peatlands into other policies and regulations*
     1. Mainstream peatlands into policies and plans and develop NAPP in Myanmar

This activity will involve the following sub-tasks:

* 1. *Based on the results produced through the peatland survey and assessments related to Outputs 1.1-1.2, identify the key regions and ecosystem types where peatlands occur and the main management requirements and threats to their integrity*
  2. *Identify the major sectors and types of activities which may impact peatlands in Myanmar (including mining, environment, agriculture, forestry, livestock, nature conservation, water resource management and fishery) and analyse the degree to which current regulations and policies incorporate (or not) peatland management issues.*
  3. *Organise consultations of appropriate stakeholders to review the needs, constraints and opportunities for peatland management in Myanmar*
  4. *Identify and review key strategies and plans in Myanmar and develop recommendations for strengthening their peatland conservation provisions.*
  5. *Develop National Action Plan on Peatlands in Myanmar and support the mainstreaming of peatlands into other policies and regulations*

**Component 3: Development and Demonstration of Best Management Practices**

**Outcome 3. Integrated sustainable management of peatland ecosystems in the targeted countries demonstrated, with an emphasis on conserving biodiversity, reducing GHG emissions and strengthening sustainable livelihoods for local communities**

To work toward this outcome, the project will establish pilot sites in Peam Krasop Wildlife Sanctuary in Cambodia, in the Beung Kiat Ngong landscape in Lao PDR, and within and surrounding Inle Lake in Myanmar. Activities within an estimated 10 sites across the three countries will be promoted, reaching 500 villagers (at least 250 women) across communities directly relevant to peatland conservation initiatives in the Mekong countries. A total of 14,600 ha of peatlands will be under improved management.

**Output 3.1 Protection and sustainable use of the peatlands in the Peam Krasop Wildlife Sanctuary enhanced**

The project will focus its pilot activities on the two villages of Boeung Kachhang and Koh Kapik, both of which are located amidst peatland ecosystems. Both villages are contained within the Peam Krasop Wildlife Sanctuary (Boeung Kachhang to the north and Koh Kapik to the south); and Koh Kapik also falls within the Koh Kapik Ramsar Site. Due to the limited budget and in consultation with stakeholders, it was decided during the project design phase not to include Botum Sakor National Park (BSNP) in the pilot activities of Component 3. However, surveys and outreach/awareness raising activities can be conducted in BSNP under Components 1 and 2.

Activities will include:

* + 1. Carry out participatory identification and demarcation of important peatland areas within PKWS

This activity involves the following sub-tasks:

1. *Using the results of the peatlands survey and functions and values assessment under Component 1, determine priority areas within PKWS for peatlands conservation and restoration. In a participatory process involving local communities, identify potential threats to peatland from human use, demarcate these areas, and design separate “regulations” for their sustainable management. If necessary, work to modify the current zoning system within the PKWS management plan to incorporate the peatlands of high conservation priority.[[7]](#footnote-7)*
2. *Organize activities (using materials developed under Output 2.1) to raise awareness of local communities about the values and functions of peatlands, and particularly the ecosystems and biodiversity of peatland mangroves in Koh Kong coastal areas. Include awareness-raising around the livelihood activities of local people that could cause impacts to peatland ecosystems and their biodiversity, e.g., mangrove cutting, illegal fishing and wildlife hunting, excavation and extraction of peat for other purposes (e.g., fish ponds, making raised garden beds, use for crop cultivation in other areas, etc.).*

*Priority will be given to the two target villages of Boeung Kachhang and Koh Kapik. The awareness-raising activities will then extend to other peatland areas within PKWS and possibly BSNP in order to share lessons learned.*

1. *Organize training for local officials in the communes about the sustainable management of peatland ecosystems, the involvement of local communities in sustainable management and use, and important functions such as the mitigation of sea level rise and other climate change impacts*
   * 1. Develop sustainable livelihood practices related to sustainable use of peatlands

The project will engage households (HH) in the two PKWS target communities in developing and implementing sustainable livelihood practices related to sustainable use of peatlands. In particular, the project will:

* 1. *Conduct a rapid socio-economic survey to identify households that are dependent on mangrove forest resources and other natural resources in the peatlands for their livelihoods. Prior socio-economic data, in particular, the Social Impact Assessment report, will be reviewed along with focus group discussions with village chiefs, community leaders and women representatives to identify potential project beneficiaries.*
  2. *Prioritize households (including female-headed households) that will be supported for livelihood development activities based on their use of peatland resources and vulnerability. The SIA report provides further recommendations for prioritization. Conduct interviews with these households. Identify the role and seek agreement regarding the responsibilities of the households participating in the project activities in the protection and restoration of ecosystems and biodiversity of coastal peatland forests.*
  3. *Develop livelihood improvement models linked to sustainable management of peatlands* *for the participating households/villagers (women/men) based on data and suggestions gathered during the SIA and through the additional interview process on their interests and capacity for developing new strategies. Likely models will include ecotourism activities, small-scale aquaculture development, improvement in the processing of fish products (e.g., shrimp paste and dried shrimp) and NTFPs for souvenirs, and/or livestock raising, with the aim of reducing/eliminating the impacts on the peatlands by providing sustainable alternatives to the extraction of peat. Other activities may be identified and developed during the household consultation process; they should target in particular the needs and capacities of women household members.*
  4. *Implement livelihood improvement activities. This process will involve training villagers around the selected livelihood improvement models, support for purchase of materials, technical support during implementation, monitoring and evaluating the process and outcomes, and adjustment of the approaches as necessary. Special provisions will be made to tailor the delivery of training to the needs of women.*
  5. *Form user groups to better manage the use of the natural resources of peatland ecosystems within the two target villages of Boeung Kachhang and Koh Kapik (managed resources will include fish resources and other non-timber products/ecosystem services).* 
     1. Incorporate peatland conservation into the PKWS management plan

The PKWS management plan does not currently incorporate strategies specific to peatlands. In collaboration with Mekong WET and other relevant projects, this project will work to revise the plan to incorporate awareness and recommended management actions related to peatland conservation throughout the sanctuary. These inputs will be based largely on the results of the survey and functions and values assessments, in addition to information gathered during the socio-economic survey of the communities.

This activity involves the following sub-task:

1. *Organize multi-stakeholder meetings to discuss and revise the management plan in order to incorporate provisions related to peatlands*

**Output 3.2 Protection and sustainable use of peatlands in the Beung Kiat Ngong landscape enhanced**

For the demonstration of best management practices, the project will focus on the peatlands in and around Beung Kiat Ngong Ramsar site, which appears to be the most significant peatland area in Lao PDR. Tentatively, three villages situated near to but outside of the Beung Kiat Ngong Ramsar boundary have been selected for pilot interventions: Ban Thongsay, Na’ang, and Kala. These villages are adjacent to “Bung Naphat”, which is one of the peripheral peatlands that are situated within the surrounding landscape of Beung Kiat Ngong. These smaller but clustered peatlands appear to provide significant functions, both from a biodiversity as well as a carbon storage standpoint, when considered cumulatively and at a landscape level. This matter will be investigated in more detail under the survey and assessment tasks associated with Outputs 1.1-1.2. The three target villages also utilize the peatlands within the Ramsar site for subsistence livelihood activities, although they have not been the focus of other Ramsar-related projects because they are technically outside the boundaries of what has been considered as the core area. With Bung Naphat falling just outside the Ramsar site, it affords the opportunity to further explore the importance and value of these peripheral peatlands and their contribution to landscape-level ecosystem services. Working with these communities would also raise wider awareness of conservation and Ramsar and potential for building justification for extending the Ramsar boundary. However, the selection of the target villages will be reviewed and, if necessary, adjusted following the assessments carried out under Component 1.

Activities will include:

* + 1. Carry out participatory identification and demarcation of important peatland areas surrounding Beung Kiat Ngong; create signs and awareness around these areas

This activity involves the following sub-tasks:

* 1. *Using the results of the peatlands survey and functions and values assessment under Component 1, determine the priority areas within and around Beung Kiat Ngong for peatlands conservation and restoration. In a participatory process involving local communities, demarcate these areas, identify potential threats stemming from human use and design voluntary practices for their sustainable management. The Access Restriction Mitigation Process described in Appendix D of the Social Impact Assessment report will be applied in the case that access restrictions are required.[[8]](#footnote-8)*
  2. *Organize activities (using materials developed under Output 2.1) to raise awareness of local communities about the values and functions of peatlands in and around Beung Kiat Ngong. Include awareness-raising around the livelihood activities of local people that could cause impacts to peatland ecosystems and their biodiversity, e.g., fires, illegal fishing and wildlife hunting, excavation and extraction of peat for other purposes (e.g., fish ponds, making raised garden beds, use for crop cultivation in other areas, etc.).*

*Priority will be given to the three target villages of Ban Thongsay, Na’ang, and Kala. However, lessons learned will be shared with adjacent villages, in particular the villages located within Beung Kiat Ngong Ramsar site.*

* 1. *Organize training for local officials about the sustainable management of peatland ecosystems, the involvement of local communities in sustainable management and use, and important functions such as the protection of biodiversity and mitigation of climate change impacts.*
     1. Develop sustainable livelihood practices related to sustainable use of peatlands

The project will engage households in the three target villages around Bung Naphat in developing and implementing sustainable livelihood practices related to sustainable use of peatlands. In particular, the project will:

* 1. *Conduct a rapid socio-economic survey to identify households that are dependent on the peatlands in and around Bung Naphat for their livelihoods. Prior socio-economic data, in particular the Social Impact Assessment report, will be reviewed along with focus group discussions with village chiefs, other community leaders and women representatives to identify potential project beneficiaries.*
  2. *Prioritize households (including female-headed households) that will be supported for livelihood development activities based on their use of peatland resources and vulnerability. Conduct interviews with these households. Identify the role and seek agreement regarding the responsibilities of the households participating in the project activities in the protection and restoration of peatlands, both in Bung Naphat and in the Beung Kiat Ngong Ramsar site.*
  3. *Develop livelihood improvement models for the participating households (women/men) based on data and suggestions gathered during the Social Impact Assessment and the additional interview process on their interests and capacity for developing new strategies. Likely models will include livestock raising, agricultural improvement technologies, fish farming and vegetable farming production, with the aim of reducing/eliminating the impacts on the peatlands. Other activities may be identified and developed during the household consultation process. The selection of livelihood practices should ensure that the needs and capacities of women household members are particularly targeted. The gender mainstreaming process applied in the CAWA project will provide a good starting point.*
  4. *Implement livelihood improvement activities. This process will involve training villagers around the selected livelihood improvement models, support for purchase of materials, technical support during implementation, monitoring and evaluating the process and outcomes, and adjustment of the approaches as necessary. Special provisions will be made to tailor the delivery of training to the needs of women.*
  5. *Form user groups to better manage their uses of the natural resources of peatland ecosystems within the three target villages (managed resources will include fish resources and other non-timber products/ecosystem services).* 
     1. Incorporate peatland conservation into the Beung Kiat Ngong Ramsar Site management plan

The Beung Kiat Ngong management plan does not currently incorporate strategies specific to peatlands. In collaboration with Mekong WET and other relevant projects, the project will work to revise the plan to incorporate awareness and recommended management actions related to peatland conservation throughout the Ramsar Site and buffer area. These inputs will be based largely on the results of the survey and functions and values assessments, in addition to information gathered during the socio-economic survey of the communities.

This activity involves the following sub-task:

1. *Organize multi-stakeholder meetings to discuss and revise the current Beung Kiat Ngong management plan in order to incorporate provisions related to peatlands and, if necessary, extend the boundary of the site to include adjacent peatland areas of high conservation priority*

**Output 3.3 Protection and sustainable use of the peatlands in Inle Lake Watershed enhanced**

The project activities will support improved management of peatlands within Inle Lake and its drainage basin. The village of Taung Po Gyi (northwestern shore of Inle Lake) and its community-managed mound spring peatland will serve as a primary pilot site for the development of best management practices along with improved livelihood options. Additional Inle Lake pilot communities whose livelihoods revolve around in-lake tomato production will be selected to help maintain and further develop a new, Department of Agriculture project on reduced-chemical farming of floating peat gardens. At the basin level, project resources will also be devoted toward improving management/oversight of peatlands and impactful upslope land use practices by incorporating appropriate regulations and relevant approaches into existing policies, strategies, and action plans. Pilot activities will also be established within the upland village tract of Let Maung Kway, along with villages yet to be selected under IFAD’s Eastern States Agribusiness Project, to demonstrate improved agricultural practices that mitigate soil erosion into the peatlands of Inle Lake.

Specific activities will include:

* + 1. Conduct education and awareness raising around the importance of peatlands

This activity will involve the following sub-tasks:

* 1. *Organize training for staff from relevant governmental departments (e.g., agriculture, forestry, irrigation) and local CSOs working in the Inle Lake Watershed about the sustainable management of peatland ecosystems, the involvement of local communities in sustainable management and use, and important functions such as the protection of biodiversity and mitigation of climate change impacts*
  2. *Organise workshops on peatlands functions and values and sustainable management targeted toward the local, community level.* 
     1. Improve community water management and protection of mound spring peatland in Taung Po Gyi pilot site

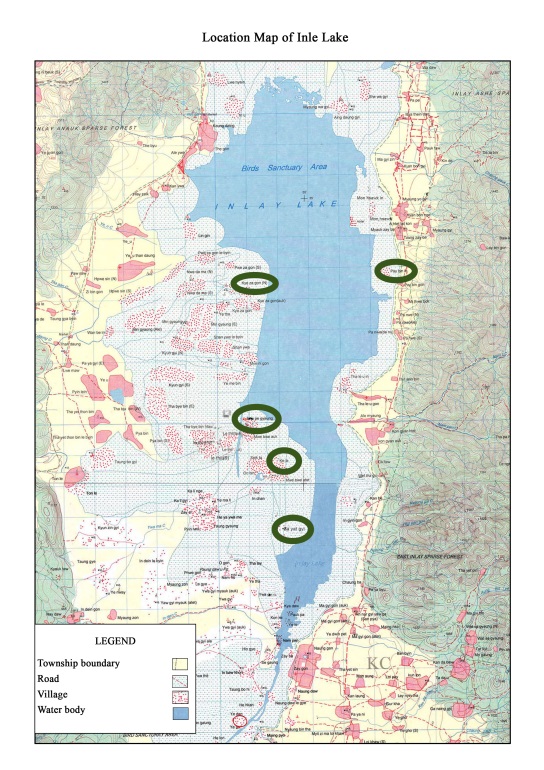
This activity will involve the following sub-tasks:

* 1. *Using Taung Po Gyi as a pilot site, assess the community’s current situation in terms of their existing water supply usage and how existing resources match that need; determine the amount that is currently extracted from the mound spring peatland* *through the village wells; and determine if there is a threshold amount that can be sustainably extracted without further subsiding the dome*
  2. *With community input, explore and assess alternative water supply options for Taung Po Gyi considering the likelihood of changing conditions in the future due to shifting rainfall patterns and other potential effects of climate change and/or changes in upslope land use patterns*
  3. *Establish a water management committee of Taung Po Gyi, and develop a water supply and management plan based on the results of activities 3.3.2 a) and b). Conservation measures may be introduced, along with a limit on the amount of water that can be sustainably extracted from the dome. Community members (women and men, youth) will be instrumental in developing this guidance. Any regulations will be voluntary (i.e., adopted and enforced by the community) and will build on current attempts by the community to manage their mound spring peatland* *and water supply.*
  4. *Develop alternative water supply options if necessary. This may require additional co-financing depending on the extent of the proposed development.*
  5. *Report on lessons learned through a meeting with the Forestry Department at both the State and the Township level including Naung Shwe and Hopon. Outreach will target villages where there are other mound spring peatlands* *being used as community water supplies (such communities will be identified more comprehensively during the survey conducted under Component 1). The focus of this meeting will be awareness raising for sustainable management of groundwater resources in mound spring peatlands.*
     1. Develop alternative livelihood strategies that minimize impacts to peatlands while raising income for villagers in Taung Po Gyi

The project will engage community members from both Taung Po Gyi North village and Taung Po Gyi South village (situated to either side of the central peat dome) with a target of roughly 50% or a total of 100 households (HH) across both north and south villages in developing and implementing alternative livelihood strategies that minimize impacts to peatlands. This will include the following sub-tasks:

* 1. *Conduct a rapid socio-economic survey to identify households that are dependent on adjacent peatlands for their livelihoods. Prior socio-economic data will be reviewed along with focus group discussions with village chiefs, community leaders and women representatives to identify potential project beneficiaries.*
  2. *Prioritize households (including female-headed households) that will be supported for livelihood development activities based on their use of peatland resources and vulnerability. Conduct interviews with these households. Identify the role and seek agreement regarding the responsibilities of the households participating in the project activities in the protection and restoration of peatland ecosystems and biodiversity*
  3. *Develop livelihood improvement models for the participating households based on data gathered during the interview process on their interests and capacity for developing new strategies. Likely models will include handicraft making to sell to ecotourism market, technical support around building natural soil fertility and reducing chemical insecticide use, crop diversification, and livestock raising and breeding. Other activities may be identified and developed during the household consultation process. The selection of livelihood models should ensure that these reflect, in particular, the needs and capacities of women household members.*
  4. *Implement livelihood improvement activities. This process will involve training villagers around the selected livelihood improvement models, support for purchase of materials, technical support during implementation, monitoring and evaluating the process and outcomes, and adjustment of the approaches as necessary.*
     1. Reduce chemical inputs to farmed floating peat areas in Inle Lake

The intent for this activity is to involve farmers already initiated in the Good Agriculture Practice (GAP) method through which they employ reduced-chemical approaches in collaboration with the Department of Agriculture Naung Shwe office in their floating vegetable gardens. There are five villages currently participating and approximately 50 farmers. The villages are shown in the adjacent map and include (from the northern-most location on the west shore, moving south and counter-clockwise): (1) Kye za gon, (2) Nga pe gyaung, (3) Ke ta, (4) Za yat gyi, and (5) Pay bin in.



This activity will involve the following sub-tasks:

* 1. *At the onset of the project, consult with the Department of Agriculture (with officials from both the State and Town level) and participating farmers to discuss lessons learned and identify gaps and needs based on the results of their initial GAP pilot project. Through these consultations, select farmers to continue working on GAP practices based on their interest and commitment to the initial project. Develop a work plan that further develops and strengthens the original initiative.*
  2. *Just as important as developing the technology to successfully grow GAP vegetables in Inle Lake is developing the market for the GAP product. The project will work with the Department of Small and Medium Enterprises (SME) Development along with the hotel zone network of Inle Lake and explore opportunities to build relationships for exporting abroad (e.g., as tomato sauce or tomato juice). This sub-task is critically important for building a sustainable GAP practice in Inle Lake.*
     1. Develop appropriate guidance and good management practices to control or reduce impacts of basin-level management issues affecting peatlands such as peat extraction, fire management and canal construction/maintenance, including review of the Inle Lake Management Plan

In order to find a sustainable strategy for peatlands management in the Inle Basin, multiple levels of government must be brought on board to develop good management practices and enforceable regulations around peat extraction, fire prevention, waterway construction, and management of invasive alien species.

As such, this activity will involve the following sub-tasks:

* 1. *Form an Inle Lake Peatlands Task Force (or Technical Working Group) involving the Inle Lake Wildlife Sanctuary Office (located in Naung Shwe under the Nature and Wildlife Conservation Division of the Forest Department) and the Committee on Inle Lake Sustainability (formerly called the Inle Lake Authority) as the entities in charge of day-to-day management of the lake and surrounding areas, as well as other departments of the Ministry of Natural Resources and Conservation (MONREC), the Ministry of Agriculture, Livestock, and Irrigation (MALI), and civil society.*
  2. *Conduct targeted stakeholder consultation approach across multiple relevant departments in MONREC and MALI as well as civil society. Build consensus on issues such as the prevention of and enforcement around peat extraction, fires and waterway construction on the lake, and management of invasive alien species. Build necessary regulations and recommendations into existing frameworks including the Long Term Restoration and Conservation Plan for Inle Lake and the Inle Lake Management Plan. Provide minimum water table recommendations for agricultural areas.*
  3. *Working with State and Township-level Agriculture Department officials, experiment with and develop alternative, cost-effective biofertilizer options that can be produced at a large scale. Note that the Agriculture Department has experimented to a certain degree with such technologies, so the project would aim to build off lessons already learned and to support further growth in this area. Also, there are local experts (e.g., through the NGO, “Save the Inle Lake”) who have had international training in compost making and are active in the local agricultural sector. The project will involve and collaborate with existing CSOs/local experts/initiatives to the extent possible to maximize benefits gained through additional experimentation and problem-solving around biofertilizer development and distribution.*
  4. *The project will support trainings with local agriculture, conservation, fisheries and fire department officials to raise communities’ awareness around peat fires and strategies for prevention and mitigation. The project will also engage with the Departments of Agriculture and Fisheries to raise awareness of the impacts on peatlands of dry-season burning for agriculture and/or burning for access to fisheries.*
  5. *The Irrigation Department has expressed need for assistance to develop and maintain waterways such that impacts to peatlands are minimized. The project aims to support the Irrigation Department to develop guidance on an appropriate strategy and best management practices for waterway construction within Inle Lake.* *This would eventually be incorporated into existing frameworks such as the Inle Lake Management Plan.*
     1. Support basin-level initiatives to promote agroforestry and reduce siltation of peatlands around Inle Lake, in particular through IFAD’s Eastern States Agribusiness Project; demonstration of relevant agroforestry practices in upland areas of Let Maung Kway village tract

The control of soil erosion through the promotion of agroforestry practices in Inle Basin has been considered a priority for more than twenty years. The driving force for mitigating the impacts of soil erosion in prior years has been related to the lowering water level of Inle Lake. The project aims to bring awareness to the additional impacts on peatlands, which are buried by sediment transported from upland erosive soil practices into the lowlands in and around the lake. In particular, the project will work with IFAD’s Eastern States Agribusiness Project, which focuses in part on the reversal of environmental degradation in sloping areas in southern Shan State, with a goal of reducing siltation into Inle Lake by 20%. The project will coordinate with IFAD to bring awareness and focus to peatlands in particular as they develop their strategies for reducing siltation within the Inle Lake watershed. Additionally, the project will work with the Forestry Department to develop demonstration plots within the village tract of Let Maung Kway that directly influence the lowland peatlands.

As such, this activity will involve the following sub-tasks:

* 1. *Collaborate with the Forestry Department (both State and Township levels) and IFAD’s Eastern States Agribusiness Project to raise awareness around the importance of peatlands and to encourage prioritization of agroforestry sites that mitigate the impacts of soil erosion on peatland ecosystems*
  2. *Within the pilot site of Let Maung Kway village tract, establish experimental/demonstration agroforestry plots to evaluate technologies for reducing siltation into the lower-lying peatlands. These technologies will ideally also enhance income-earning potential through higher-value products such as avocado, which local villagers have indicated high interest in growing through preliminary consultations. The demonstration plots and monitoring and evaluation protocol will be developed in consultation with Naung Shwe Forest Department officials and community members. The demonstration plots will potentially influence future agricultural practices in the Let Maung Kway village tract. Short-term income opportunities will also need to be considered when introducing agroforestry.*
  3. *Share lessons learned with government officials from the Forestry and Agriculture Departments (both State and Township levels) in addition to local CSOs and partner organizations*

**Component 4: Regional cooperation**

**Outcome 4. Regional cooperation among countries in peatlands sustainable management is enhanced**

Regional cooperation will take the form of the development of common guidelines for conservation and sustainable use of peatland resources, and the sharing of lessons learned across the three countries and with other ASEAN Member States. Approximately 40 key stakeholders (10 each from Lao PDR and Cambodia, and 20 from Myanmar) will participate in cross-country exchanges, and 18 key stakeholders will participate in regional workshops on the overall management and implementation of the project. At least four regional meetings and exchanges will be held during the course of the project. Links will be made with the ASEAN Task Force on Peatlands and the ASEAN–IFAD project Measurable Action for Haze Free Southeast Asia (MAHFSA), as well as with the new GEF/IFAD peatland projects that are starting in Malaysia and Indonesia.

**Output 4.1 Experiences and best practices for peatland assessment and management in Mekong countries documented and shared**

Specific activities will include:

* + 1. Develop and translate guidelines for conservation, rehabilitation and sustainable use of peatlands (value and functions of peatlands, conservation and rehabilitation of ecosystems, biodiversity and sustainable use of peatlands). This will include agreeing on a common regional definition of peatlands that can be consistently applied across assessments

This activity will involve the following sub-tasks:

* 1. *Review existing guidelines that have been developed in the region through prior peatland projects (e.g., SEApeat) and update as appropriate*
  2. *Organise workshop to share experience and best practices*
  3. *Develop and translate guidelines*
     1. Produce at least one lessons learned document per country and share at the regional level

This activity will involve the following sub-tasks:

* 1. *Identify key lessons, based on the findings of the national peatland surveys and assessments, and the monitoring and evaluation of the pilot site activities*
  2. *Use the lessons from each country to prepare a concise summary document*
  3. *Make use of the project’s regional workshops and cross-country exchanges to share and disseminate the lessons learned*
     1. Ten key stakeholders from Cambodia, 10 from Lao PDR, and 20 from Myanmar participate in exchange visit to other Mekong country (e.g., site with similar conditions in Vietnam or Thailand where management planning/implementation is further developed; and/or to a project site in one of the target countries)

This activity will involve the following sub-tasks:

1. *Identify key stakeholders to participate in the exchanges*
2. *Identify appropriate sites for exchange visits, based on the potential for learning about peatland conservation and management, as well as other considerations (such as logistical feasibility, time and costs). Consider combining the annual PSC meetings with field visits.*
3. *Organise exchange visits and document experience and lessons learned*

**Output 4.2 Technical project implementation support and coordination provided**

Specific activities will include:

* + 1. Key stakeholders participate in regional project inception and coordination workshops (including PSC meetings)

This activity will involve the following sub-tasks:

* 1. *Identify key stakeholders at national, sub-national and site levels who should participate in the project inception workshop and annual PSC meetings*
  2. *Organise and hold the inception workshop. Use the meeting to clarify the scope of the project, timelines, deliverables, approach and methods. Discuss potential challenges and solutions, and how to coordinate and seek support at the regional level.*
  3. *Organise the annual PSC meetings; these could perhaps be held back to back with the ASEAN Task Force on Peatlands meeting that is held every year, and/or linked with a field visit to a relevant site in the respective country.*
     1. Key stakeholders participate in regional workshop on peatlands management

This activity will involve the following sub-tasks:

* 1. *Conduct workshop during the last year of the project cycle*
  2. *Share findings from lessons learned reports produced under Output 4.1*
  3. *Identify project successes, and how to foster sustainability*
  4. *Identify gaps and needs, and future project ideas*
  5. *Discuss financing mechanisms and ways to maintain sustainability*
     1. Hold at least two annual project coordination and monitoring meetings per country (including inception meetings, NSC meetings)

This activity will involve the following sub-tasks:

* 1. *Identify the key stakeholders at national level*
  2. *Organise and hold at least two meetings per country per year*
     1. Carry out project M&E and project closure according to project plan

M&E activities will be carried out in accordance with Appendix 2. The project will regularly report progress at meetings of the ASEAN Task Force on Peatlands and other relevant meetings at the ASEAN level. In addition, the project will seek collaboration with other global and regional platforms and projects, such as the meetings of the Ramsar Convention, meetings of the Indo-Burma Regional Ramsar Initiative (IBRRI), the Mekong River Commission (MRC), etc.

This activity will involve the following sub-tasks:

* 1. *Conduct six-monthly progress monitoring and annual Project Implementation Review*
  2. *Conduct Mid-Term Evaluation*
  3. *Complete project closure and conduct End-of-Project Evaluation*

## Risk analysis and risk management measures

Potential risks include factors related to governance and technical capacity of human resources, land ownership and security issues, and climate change. The following table describes the risks, the level of severity, and the project’s mitigation measures in more detail.

*Table 8: Risk analysis and mitigation measures*

|  |  |  |
| --- | --- | --- |
| **Risk Description** | **Level** | **Mitigation measure(s)** |
| Lack of political will or poor governance | Moderate | * Linking project activities closely with national policies and regulations and addressing issues prioritized by the countries/provinces/regions including those in the respective national plans related to UNFCCC, CBD, UNCCD, and the commitments under ASEAN |
| Potentially slow implementation of multi-stakeholder integrated management strategies | Moderate – High | * Careful selection of project partners (this will include local government agencies with demonstrated commitment to addressing peatland issues and sufficient staff to take responsibility) and through close monitoring and guidance of project activities |
| Lack of skilled workforce to conduct the highly technical remote sensing (RS) tasks (e.g., satellite image processing and data interpretation) necessary for the nation-wide peatland surveys | Low | * Rather than relying on country representatives, the project will engage a regional expert who has demonstrated success on similar RS tasks, such as through the SEApeat project; the regional expert will help all three countries in completing this RS task and provide capacity building to national representatives at the same time |
| Limited land access to peatlands of importance due to land tenure issues; and risk of land concessions in areas selected for pilot demonstration | Moderate | * For the nation-wide survey, the project anticipates not all areas will be accessible due to private ownership in combination with some owners not amenable to the project mission, and also due to security issues, for example, in some of the regions in Myanmar. In such cases, the areas will be evaluated to the extent possible through the remote sensing stage and collaboration of land owners will be sought. Land owners will also be involved in awareness raising and capacity building activities. * In terms of the pilot activities, sites will be selected that fall under public ownership such as within existing protected areas and coordination with government will ensure to minimize the risk of concessions. |
| Climate change risk including impacts of extended droughts, floods or extreme events during the project period | Moderate | * Enhanced peatland management will enhance resilience to climate change * The project will adopt a river basin approach to Inle Lake management issues in Myanmar which will consider potential climate change risks * The project will collaborate with and draw on the experiences of the CAWA project (Lao PDR) as well as Mekong WET (Cambodia and Lao PDR) to consider climate change adaptation in peatlands management * The project will work closely with the ASEAN Specialized Meteorological Centre (ASMC) to detect any early warning signs of El Niño to adjust the planning of activities especially in the drought/flood prone regions to minimize disruption |
| Potential financial challenges are present in terms of being able to carry out all tasks as proposed | Moderate | * In Cambodia, Mekong WET will provide support in revising the Peam Krasop Wildlife Sanctuary Management Plan to incorporate recommendations and guidelines around sustainable use of peatlands * In Lao PDR, the project will work similarly with the CAWA project to update the Beung Kiat Ngong Management Plan to better protect and manage peatlands. * In Myanmar, the project expects IFAD to play an important role in developing and supporting basin-level practices that mitigate impacts to downstream peatlands. * The project will seek collaboration with ASEAN and the EU-SUPA project |

## Consistency with national priorities and plans

### Cambodia

**Cambodia National Environmental Action Plan (1998-2002) and Cambodia’s DRAFT National Environmental Strategy and Action Plan (2015-2023)**

The intent of the Cambodia National Environmental Action Plan (NEAP) is to “develop and implement guidelines for policy makers, private sector interests, and the general public to assist these groups in integrating environmental concerns into national and local development policies, economic decision-making, and investment planning”. There are six priority issues of which the first four are most relevant to peatlands management: (1) forestry policy, (2) fisheries and floodplain agriculture in Tonle Sap, (3) coastal fisheries management, (4) biodiversity and protected areas, (5) energy development and the environment, and (6) urban waste management.

While the NEAP does not specifically focus on peatlands, the protection of “critical habitats” is mentioned throughout. For example, under the Tonle Sap section, conservation of inundated forests around the lake is included as a key action point. Similarly, under the biodiversity and protected areas section, wetlands are highlighted as critical resources in Cambodia, specifically related to Tonle Sap and surrounding areas, along with coastal wetlands. While peatlands were largely not known about yet as important ecosystems in Cambodia at the time of the NEAP’s preparation, we know that some of the critical habitats mentioned in the plan (e.g., the Tonle Sap area and the mangrove forests along the coast) contain some of the more unique and important peatland areas of Cambodia.

While the NEAP is meant to be a living document, updated every five years, this has not occurred until the recent drafting of the National Environmental Strategy and Action Plan (NESAP). The time period this covers is 2015-2023 to align with the country’s Rectangular Strategy and National Strategic Development Plan. The NESAP takes stock of Cambodia’s natural resources, measures the economic benefits of environmental sustainability, and introduces financial incentives for green business development. These broad goals are in line with the overall mission of the project in promoting the conservation and sustainable use of peatlands, as they are one of Cambodia’s critical ecosystems with clear social and economic benefits. The NESAP is currently in its final review and approval stage by the Government of Cambodia.

**Kingdom of Cambodia Protected Areas Law (2008)**

Per Article 1, “This law defines the framework of management, conservation and development of protected areas. The objectives of this law are to ensure the management, conservation of biodiversity, and sustainable use of natural resources in protected areas.”

The law establishes the Nature Protection and Conservation Administration (NPCA) under the Ministry of the Environment (MoE) as the primary overseer of protected areas in Cambodia. Its roles include the development of guidelines and management plans specific to individual Protected Areas (PAs); the research into and proposal of new PAs and/or modification of boundaries of existing PAs; the enforcement of laws surrounding the conservation of PAs; educational activities to promote the protection and restoration of PAs; and the involvement of local communities.

The law designates 8 unique categories of PAs. It also establishes a zoning system within individual PAs that involves four categories depending on their significance and afforded level of protection. The zones consist of: the *core zone*, the *conservation zone*, the *sustainable use zone*, and the *community zone*. The law also recognizes the rights of local and indigenous communities and promotes participatory processes to develop management guidelines.

As the project will work within the Peam Krasop Wildlife Sanctuary, and more specifically within the Koh Kapik Ramsar Site, the Protected Areas Law is quite relevant for any proposed activities within these areas. Specifically, the project will endeavour to update the existing PKWS management plan to account for management actions related to peatlands and their unique requirements. In addition, the project may recommend zoning modifications to enhance their protection. Participatory processes will be invoked to ensure local communities are involved and supportive of any proposed modifications.

**Cambodia Climate Change Strategic Plan (2014-2023)**

The goals of the Cambodia Climate Change Strategic Plan (CCCSP) are threefold:

* Reducing vulnerability to climate change impacts of people, in particular the most vulnerable, and critical systems (natural and societal);
* Shifting towards a green development path by promoting low-carbon development and technologies;
* Promoting public awareness and participation in climate change response actions.

There are eight strategic objectives within the CCCSP, many of which align well with the objectives of the peatlands project:

1. Promote climate resilience through improving food, water and energy security.
2. Reduce sectoral, regional, gender vulnerability and health risks to climate change impacts.
3. Ensure climate resilience of critical ecosystems (Tonle Sap Lake, Mekong River, coastal ecosystems, highlands, etc.), biodiversity, protected areas and cultural heritage sites.
4. Promote low-carbon planning and technologies to support sustainable development.
5. Improve capacities, knowledge and awareness for climate change responses.
6. Promote adaptive social protection and participatory approaches in reducing loss and damage due to climate change.
7. Strengthen institutions and coordination frameworks for national climate change responses.
8. Strengthen collaboration and active participation in regional and global climate change processes.

The project will strengthen Cambodia’s understanding of the role peatland conservation plays in terms of the reduction of GHG emissions and the building of climate resilience through the maintenance and restoration of healthy ecosystems. The increased understanding and related capacity building will occur at multiple levels: national, sub-national and local. In particular, the protection of peatlands helps to conserve water supplies and mitigates flooding, services that will only become more critical as the climate continues to change and extreme events (including both droughts and floods) become more frequent in the region.

**Cambodia’s Intended Nationally Determined Contribution (2015)**

Cambodia is party to the United Nations Framework Convention on Climate Change (UNFCCC) and as such prepared an Intended Nationally Determined Contribution (INDC) ahead of COP 21 in Paris, December 2015. The INDC outlines Cambodia’s intended contributions to the reduction of global GHG emissions as well as their plan for adapting to the impacts of climate change. Cambodia is and has been a low GHG emitter, and is considered an overall net carbon sink. However, the country has been experiencing significant economic growth and will continue to do that along with its intent to combat poverty through its development goals. The country’s INDC recognizes that its continued economic growth must be balanced with a green growth policy in order to maintain its low emissions. The INDC includes specific priority actions related to both adaptation and mitigation.

Adaptation priority actions generally fall into the categories of infrastructure improvements and the development of climate smart agricultural practices. But, there is also focus on building community resilience including the restoration of natural ecology. For example, the first priority action listed under adaptation in Cambodia’s INDC is as follows:

“Promoting and improving the adaptive capacity of communities, especially through community based adaptation actions, and restoring the natural ecology system to respond to climate change”.

The project directly supports this adaptation priority action through the establishment of best management practices to conserve and sustainably manage peatlands within community contexts.

In terms of mitigation priority actions, the INDC includes both the reduction of industry-related emissions, but also the increase in forest cover from 57% to 60% of national land area by 2030. Again, the project will directly support this target through strengthening management recommendations and awareness-raising around the importance of preserving mangrove peatland areas for the reduction of GHG emissions.

**Cambodia National Biodiversity Strategy and Action Plan (2016)**

Cambodia’s current National Biodiversity Strategy and Action Plan (NBSAP) was published in 2016 and represents a revision to the original NBSAP that was produced in 2002. Both efforts fulfilled obligations to the Convention on Biological Diversity (CBD), of which Cambodia is a party. Cambodia’s vision for biodiversity that holds the core of this strategy and action plan is that, “by 2050, Cambodia’s biodiversity and its ecosystem services are valued, conserved, restored where necessary, wisely used and managed so as to ensure equitable economic prosperity and improved quality of life for all in the country”.

There are four overall strategic objectives of the NBSAP, as listed below.

*Strategic objective A*: Identify, inventory, monitor and enhance awareness about genetic resources, species, habitats or ecosystems and related ecosystem services that are important for sustainable development and poverty eradication in Cambodia, as a priority for conservation and sustainable use;

*Strategic objective B*: Identify and describe the direct and indirect factors and processes that are negatively impacting Cambodia’s priority biodiversity components; and apply, as appropriate, preventive and corrective measures;

*Strategic objective C*: Maintain or strengthen measures that have a positive impact on biodiversity and thus enhance the benefits to all in Cambodia from biodiversity and associated ecosystem services, for an equitable economic prosperity and improved quality of life;

*Strategic objective D*: Strengthen the enabling environment for the implementation of the strategy.

The peatlands survey under Component 1 of the project is directly supportive of Strategic objective A by inventorying the extent and quality of this important ecosystem throughout Cambodia. Through this process, there will be extensive awareness-raising on the functions and values of peatlands including their role in the country’s biodiversity. The development of Cambodia’s National Action Plan on Peatlands (Component 2 of the project) will directly support Strategic objective B, while the demonstration of best management practices (Component 3 of the project) will support Strategic objective C. Overall the project is well aligned with the recent update to Cambodia’s NBSAP.

### **Lao PDR**

**Water and Water Resources Law (1996, revised version approved in May 2017)**

The Water and Water Resources Law was first adopted in October 1996 with a revised version recently approved in May 2017.

The law “provides principles, regulations, and measures governing the management, exploitation, development and use of water and water resources within Lao PDR; with the aim to protect and sustain water resources and water particularly with regard to the assurance of water in sufficient quantity and of sufficient quality to satisfy the national needs in terms of domestic, agricultural, industrial uses and the uses of other sectors in such manner as to protect the natural environment”.

Wetlands (including peatlands) are considered under the law, as the term water resources is broadly defined to include “natural resources, living and non-living, which are in the water and include aquatic reeds, sand, gravel, fish, minerals, etc.”.

The law provides a structure for uses of water within Lao PDR, categorizing activities into small, medium, and large scale uses. Small-scale uses, primarily at the community-use level such as small-scale fishing and harvesting of aquatic plants, etc. do not necessitate permits. Medium- and large-scale uses do require permits and in the case of large-scale uses (e.g., industry level withdrawals, etc.) they also require feasibility studies. The general principles of the law necessitate that any development is undertaken such that important natural resources are preserved and harmful effects on water are avoided.

Regarding protection, Article 29 states: “Individuals and organizations are required to protect water and water resources from drying up or becoming spoilt or polluted”. Water and water resources must be used in the most economical way and in such way as not to adversely affect the environment or scenic beauty of the countryside. Furthermore, forest and land resources within the watershed must be protected in accordance with water resource, forest and land allocation plans.”

The project’s objectives related to the conservation and sustainable use of peatlands are directly aligned with the Water and Water Resources Law, as through the conservation of peatlands, key ecosystem services related to water storage are also protected. Not only do peatlands store water that is slowly released during periods of lower water levels, but they also provide critical flood mitigation potential, minimizing the erosive nature of water during high flow events. In this way, peatland conservation supports the maintenance of both water quantity and water quality.

**The Forestry Law (2007)**

The original version of the Forestry Law was adopted in 1996, and then subsequently revised and re-adopted in 2007. The objective of the law is to determine “the basic principles, regulations and measures on sustainable management, preservation, development, utilization and inspection of forest resources and forestland, promotion of regeneration and tree planting, and increase of forest resources in the Lao People’s Democratic Republic aiming at maintaining a balance of nature, making forest and forestland stable sources of living and use for the people, ensuring a sustainable condition and protection of the environment, water resources, protection from soil erosion and maintenance of soil quality, protecting plants, tree species, wildlife and aquatic life, as well as contributing gradually to national socio-economic development.”

While peatlands in Lao PDR cover a range of ecosystem structures including both grasslands and forested areas, they generally fall within a broader forested landscape and as such are captured under the definition of “forest resources” per the law.

Per Article 6, one of the key principles for the protection, development, and utilization of forests and forestlands is “ensuring protection, regeneration, development of forests and forestlands, water resources, biodiversity and the environment to abundance with people’s participation.” And, furthermore, it is the duty of all citizens, households, and organizations of Lao PDR to protect and restore the country’s forest resources according to the law.

The law also allows for differing uses according to the category of forest, which includes protection, conservation, and production forests.

The project is aligned with the law, as it will support the protection and maintenance of key ecosystem services that peatlands provide within forested landscapes of Lao PDR. It may also contribute to re-categorizing certain forestlands based on the results of the nation-wide peatland survey to offer more protections of critical habitats and biodiversity should that be required to adequately conserve peatland and associated forest resources.

**Lao PDR National Biodiversity Strategy and Action Plan (NBSAP) 2016-2025 (2015)**

This NBSAP represents a second version of this plan to be more aligned with the strategic goals of the Convention on Biological Diversity, covering the period 2016-2025. The plan consists of three parts: an assessment of the current situation of biodiversity in Lao PDR, a description of the guiding strategy, and the details of the national action plan. Participatory processes were involved to develop the plan including national, subnational, and community-level stakeholders.

While peatlands are not discussed specifically within the NBSAP, wetlands are considered in relation to important aquatic resources within the country of Lao PDR.

The goal of the NBSAP for the period 2016-2025 is to: “Enhance the role of biodiversity as a national heritage and as a substantial contributor to poverty alleviation, as well as sustainable and resilient economic growth.” Five key strategies are included to support the goals and objectives of the plan:

1. Protect the country’s diverse and economically important ecosystems
2. Integrate the value of biodiversity to socio-economic decision making to ensure sustainable use and funding
3. Strengthen the knowledge base for strategic decision making
4. Inspire and enable actions through better communication, education and public awareness
5. Enable effective preparation and implementation of plans and programs

This project will directly support the key strategies included in the NBSAP 2016-2025. The project’s focus on involving communities to develop sustainable strategies for managing peatlands, and its efforts on public awareness raising around the importance of peatlands including biodiversity overlap well with the NBSAP strategies. The project will also support the development of Lao’s National Action Plan on Peatlands, further promoting overall efforts on conserving the nation’s biodiversity.

**Lao PDR Intended Nationally Determined Contribution (INDC) (2015)**

As a party to the UN Framework Convention on Climate Change (UNFCCC), Lao PDR developed its INDC in 2015 in preparation for the Paris Climate Change Conference (COP 21). The document includes both mitigation and adaptation initiatives to meet its target of reducing GHG emissions while enabling the country to adapt to the unavoidable effects of global climate change.

Key activities include implementation of the “Forestry Strategy to 2020”, which includes a primary target of increasing the country’s forest coverage to 70% (16.58 million hectares) by 2020. Other activities enable the development of renewable energy and improving rural electrification and road transport systems that currently are lacking and require fossil fuel expenditures to mitigate.

For adaptation, the INDC supports primary goals outlined in Lao’s National Strategy on Climate Change (2010), specifically to:

* Increase resilience of key economic sectors and natural resources to climate change and its impacts
* Enhance cooperation, strong alliances and partnerships with national stakeholders and international partners to achieve national development goals
* Improve public awareness and understanding of various stakeholders about climate change, vulnerabilities and impacts in order to increase stakeholder willingness to take actions

The project directly contributes to both mitigation efforts and adaptation to climate change within Lao PDR. Through the conservation of peatlands, important carbon sequestration services will be protected and will reduce the likelihood of converting stored carbon in peatland ecosystems into GHG emissions (e.g., by reducing drainage, extraction, and other degrading activities). Conservation of peatlands will also directly benefit adaptation efforts. Maintaining important functions such as the high water absorption capacity of peatlands will help build resilience as communities deal with the negative impacts of climate change including increasing severity of drought, and larger storm events.

### **Myanmar**

**Myanmar National Water Policy 2014 (MNWP-2014)**

The over-arching vision of the MNWP-2014 is for Myanmar to become a water efficient country. Additionally, as described within Chapter II, paragraph 6 (2-6), the protection of all water resources in Myanmar is also a primary objective. As peatlands are important freshwater resources in Myanmar, they can be considered to be directly relevant to this policy. The policy also puts forth the enforcement of “the polluter pays system” (2-10).

Inle Lake has been recognized as the Inle Lake Wildlife Sanctuary by the government of Myanmar, and it is a source of freshwater for the area. Inle Lake and associated peatlands are thus protected through MNWP-2014 and other regulations associated with its status as a Wildlife Sanctuary such as the Protection of Wildlife and Conservation of Natural Areas Law (1994). MNWP-2014 (9-3) strictly prohibits destructive activities within the catchment per the following statement, “Urban settlements, encroachments and any developmental activities in the protected up-streams areas of reservoirs/water bodies and (potential) key aquifer recharge areas that pose a potential threat of contamination, pollution, reduced recharge and those that endanger wild and human life should be strictly regulated”.

The freshwater source areas must be considered in planning according to MNWP-2014. “Environmental needs of aquatic systems, wetlands and embanked flood plains need to be recognized and taken into consideration while planning”. MNWP-2014 (9-5) further stipulates taking action against those responsible for water pollution as follows, “Sources of water and water-bodies including marine water should not be allowed to become polluted. A system of third party periodic inspection should be evolved and stringent punitive actions taken against the persons responsible for pollution”.

**DRAFT National Wetlands Policy**

In August 2016, a National Wetlands Committee was formed and tasked with the development of the National Wetlands Policy. The committee is cross-sectoral and includes representatives from nine different government departments. The National Wetlands Policy is currently in draft stage. It includes nine policy measures all of which are relevant to the conservation and sustainable management of peatlands in Myanmar. These measures are: *conservation of wetlands*, *sustainable use of wetlands*, *restoration of degraded wetlands*, *implementation of policy*, *capacity building*, *research and inventory*, *environmental impact assessment and monitoring*, *awareness raising*, and *collaboration with international and regional wetlands programs*.

Peatlands, as one category of wetland, are briefly introduced within the draft policy. However, one of the objectives of the project is to work with the committee to incorporate important revision suggestions including the definition of peatlands and their role in providing important ecosystem services such as biodiversity and climate change mitigation. Also, specific threats to peatlands, e.g., extraction and fire, are not currently mentioned under the broader discussion of threats to wetlands in general. Addressing these threats is critical to the sustainable management and wise use of peatlands, so should be acknowledged within the policy document.

In addition to the Draft National Wetlands Policy, there is also a National Wetlands Action Plan as well as a National Wetlands Inventory that are currently under development in Myanmar. The project will also collaborate with these efforts to ensure synergy with the findings from the nation-wide peatlands survey and development of Myanmar’s National Action Plan on Peatlands.

**National Biodiversity Strategy and Action Plan 2015-2020**

The overall vision of Myanmar’s National Biodiversity Strategy and Action Plan (NBSAP) is, “Conservation, management and utilization of biodiversity in a sustainable manner for sound and resilient ecosystems and national posterity”. Myanmar’s NBSAP has been organized to be aligned with *The Strategic Plan for Biodiversity 2011-2020* adopted by the Convention on Biodiversity, which is the principal global treaty on biodiversity. There are five strategic goals along with 20 Aichi Biodiversity Targets that the NBSAP is organized around. The five overarching goals are as follows:

* Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
* Reduce the direct pressures on biodiversity and promote sustainable use
* Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
* Enhance the benefits to all from biodiversity and ecosystem services
* Enhance the implementation through participatory planning, knowledge management and capacity building

The project will work directly toward meeting these goals through the promotion of the conservation and sustainable management of peatland ecosystems.

**Myanmar Forestry Policy (1995)**

There are 6 imperatives in the Myanmar Forestry Policy adopted in 1995. They are *protection*, *sustainability*, *basic needs*, *efficiency*, *people participation* and *public awareness*. Under the protection imperative, focal areas include, “Safeguarding soils, water catchments, ecosystems, biodiversity and plant and animal genetic resources, scenic reserves and national heritage sites”. The project is therefore in line with the Myanmar Forestry Policy as some project activities involve establishing demonstration plots in important catchment areas, restoring (peatland) ecosystems, and safeguarding the national heritage of Inle Lake.

**Myanmar National Comprehensive Development Plan (20 year vision)**

This MNCDP was developed by the Ministry of National Planning and Economic Development and adopted in 2014. There are 6 chapters, 7 strategic frameworks, and 40 sub-strategic elements. Chapter 5, “Conserving the Environment”, focuses on environmental issues and is relevant to the conservation and sustainable management of peatland ecosystems.

Reducing vulnerability to climate change related disasters and impacts is one of the sub-strategic elements for conserving the environment. Through legislations enacted, all fresh water sources including wetland ecosystems must be protected. It also recognizes the importance of protected areas (including wetlands), as they are key resources for the tourism industry, demonstrated by the vast number of tourists who visited Inle Lake in 2013.

**Myanmar National Land Use Policy (2016)**

Myanmar adopted its National Land Use Policy in 2016 after spending many years to develop it. Of the 16 basic principles within the policy statement, some five principles are more related to the sustainable management of peatlands than the others. These are listed below:

* To legally recognize and protect the land tenure rights of local people,
* To promote inclusive public participation and consultation in decision-making processes for land use and land resource management,
* To ensure equal opportunities for men and women over land resources, tenure rights and participatory decision making,
* To permit freedom of crop selection and adoption of cultivation technologies in a way that will not negatively affect the environment, and
* To address the impacts of climate change and natural disasters.

Section (8) sub-para 64 deals with having respect for and recognizing land use rights of the ethnic nationalities. “64. Customary land use tenure systems shall be recognized in the National Land Law in order to ensure awareness, compliance and application of traditional land use practices of ethnic nationalities, formal recognition of customary land use rights, protection of these rights and application of readily available impartial dispute resolution mechanisms”.

Similarly, there is a statement related to the understanding of traditional land use, “Have accurate understanding of information related to land possession, land use, land availability and allocation in the area where ethnic nationalities live or traditionally use land resources for their livelihoods” (sub para 65-a). Traditionally used vacant, fallow, and virgin lands are to be regarded as “customary land” by the policy statement (sub para 68).

Inclusiveness in decision-making processes for land tenure for farmers is mentioned in sub para 67 as, “Ethnic leaders, elders and women shall be involved in decision-making processes related to land tenure rights of individual stakeholders or groups practicing traditional cultivation methods on customary lands, monitoring, and dispute resolution mechanisms”.

These statements are useful for the project and will be applied when working with ethnic groups, for example, in Let Maung Kway village tract within the northwestern portion of Inle’s catchment area, which is populated by the Taung Yoe ethnic group. Shifting cultivation is currently practiced in some cases, leading to sedimentation of downslope peatland areas. Certain areas of the village tract follow traditional land use systems based on clan-wise land ownership (specifically within areas outside of the Forest Department boundary). For this reason, any pilot demonstration areas that are developed in Let Maung Kway through the project’s activities will be voluntary, based on participatory processes, and most likely located on land that falls within the Forest Department’s jurisdiction to avoid any potential access restrictions on clan-owned land.

**Myanmar Ecotourism Policy and Management Strategy 2015-25**

The Myanmar Ecotourism Policy and Management Strategy 2015-25 was developed with technical assistance from the International Centre for Integrated Mountain Development (ICIMOD) and financed by a grant from the European Union.

Carefully planned tourism can bring benefits to important natural areas and surrounding communities. At a global level, ecotourism has long been associated with environmental, social and economic benefits for destination communities. Similarly, the vision of the Myanmar Ecotourism Policy and Management Strategy recognizes the protection of ecosystems, while bringing to the forefront the importance of indigenous groups, “*We intend to use ecotourism as a driving force to strengthen the management of Myanmar’s expanding protected area network. Our aim is to engage all stakeholders to implement ecotourism policies, business models and management approaches that protect the unique ecosystems of our country, and celebrate indigenous groups that have made these special areas their home.”*

Out of the nine policy principles included in the policy statements, the 4th is related specifically to protected areas (PAs) and environmental conservation, “4. Conserve and enhance PAs and environment”.

There are four strategic programs that are directly relevant to the protection and sustainable use of peatland ecosystems, particularly within PAs such as the Inle Lake Wildlife Sanctuary and other PAs that may contain important and extensive peatland systems (e.g., Indawgyi Lake Wildlife Sanctuary).

Strategic Program 2: Strengthen ecotourism planning in and around protected areas

* Build human resource capacity in ecotourism planning and management
* Design ecotourism management plans for protected areas

Strategic Program 3: Engage local communities

* Raise community awareness of ecotourism and protected area issues and opportunities
* Promote business opportunities for protected area communities
* Build private sector knowledge of good practices in engaging protected area communities

Strategic Program 4: Invest in infrastructure and responsible business models

* Improve infrastructure in and around protected areas
* Promote innovative business models for protected areas
* Promote responsible practices in elephant tourism

Strategic Program 5: strengthen research and monitoring frameworks

* Deepen knowledge of the tourism and protected areas relationship

**Small and Medium Enterprise Law (2015)**

The Small and Medium Enterprise Law (2015) was enacted in 2015 and it will be an important instrument for enhancing the local livelihoods of the Inle Lake area. The objectives of the law encourage small and medium enterprise (SME) development in Myanmar, and specifically strive “to have new employment opportunities and increase income of the people through the development of small and medium enterprises” (article 3-c). SME market development in rural areas is a specific focus by **“encouraging and promoting the development of the market of small and medium enterprise in order to reach rural areas”** (article 6-d). The responsibilities of the central working committee of SME are directly relevant to the peatlands project as follows:

* Assisting SME to overcome their obstacles in doing business (8-b), and
* Supporting to connect extensively with the local and foreign economic markets to enable to extend the market (8-c). (Source: Government of Myanmar. 2015. Small and Medium Enterprise Law. 25 pp)

The project will collaborate with the DSMED in project implementation around components related to the enhancement of local livelihoods, including such SME activities as weaving and other handicraft making, agroforestry, reduced-chemical/GAP farming, livestock breeding, etc.

**Myanmar’s Intended Nationally Determined Contribution (2015)**

Currently Myanmar is a net carbon sink with its extensive forest cover absorbing more greenhouse gas emissions than it emits. However, the country is in process of rapid industrialization, so this condition will likely change without mitigation actions. In addition, Myanmar has been ranked for several years in a row as the 2nd most vulnerable country to extreme weather events. In order to avoid significant devastation and loss of lives and infrastructure due to increasing frequency of extremes such as storms and drought, appropriate adaptive measures are also necessary. Myanmar’s INDC lays out both mitigation and adaptation goals contingent on international support through financing mechanisms. The mitigation objectives outlined in the INDC focus on the forestry and energy sectors; while the adaptation actions target agriculture, forestry, water, infrastructure, biodiversity, and reducing the risks of disasters.

The project will provide an important international funding source to support Myanmar’s efforts in addressing the impacts of climate change. It will directly contribute to meeting Myanmar’s related goals and objectives outlined in the INDC. As peatlands represent a significant carbon store, their conservation will help mitigate the unavoidable emissions associated with the rapid socio-economic development the country is currently undergoing. Additionally, by supporting sustainable use of peatlands and associated ecosystem services (e.g., biodiversity, water storage, flood mitigation) the project will support adaptation objectives that promote resilient communities that rely on healthy environments.

**National Adaptation Programme of Action (NAPA)**

Myanmar’s NAPA was prepared in 2012 following guidelines developed by the United Nations Framework Convention on Climate Change (UNFCCC). Following participatory methods spanning government as well as community-based and indigenous groups, 32 priority activities were developed across 8 sectors/themes: agriculture, early warning systems, forest, public health, water resources, coastal zone, energy and industry, and biodiversity. Within the forest sector, the 4th priority is directly relevant to the project. It reads as follows:

*“Enhancing the climate change resilience of rural livelihoods through community-based restoration at the Indawgyi and Inle Lake watershed areas in the Northern Hilly Region.”*

The project will work within the village tract of Let Maung Kway of the Inle Lake basin to enhance community forests and further develop sustainable hillside farming technologies including agroforestry, with co-benefits of water source protection and improving the resilience of rural livelihoods to climate change. As such, the project will help Myanmar reach some of its objectives laid out in their NAPA.

## Project alignment with [IUCN Programme](https://www.thegef.org/project/sustainable-management-peatland-ecosystems-indonesia-smpei)

The IUCN Programme 2017-2020 was approved by its Members Assembly, the IUCN World Conservation Congress, in September 2016.

IUCN works under the principle that nature conservation and human progress are not mutually exclusive. Facing tremendous forces of transformation such as climate change and dramatic socio-economic inequality across the world, there are credible and accessible political, economic, cultural, and technological choices that can promote general welfare in ways that support and even enhance our planet’s natural assets.

The GEF Mekong Peatlands project has strong alignment with IUCN’s Global Results, Sub-Results and 2020 Targets. Updated information on peatland areas in the three countries will help initiate mechanisms for the establishment and effective management of peatland areas, which are of high biodiversity value and important carbon stores, and are also important for people’s livelihoods. The project will therefore also contribute to the Sustainable Development Goals (SDGs), the Aichi Biodiversity Targets and the Land Degradation Neutrality targets.

In addition, the project will build on IUCN’s established work in the target sites in Cambodia and in Lao PDR.

Relevant IUCN Global Results, Sub-Results and 2020 targets are described in the table below, along with the corresponding SDGs and Aichi Targets:

*Table 9: IUCN global results, sub-results and targets relevant to the Mekong Peatlands Project.*

|  |  |  |  |
| --- | --- | --- | --- |
| **IUCN Global Result** | **Sub-Result** | **Target** | **Relevant SDGs and Aichi Targets** |
| **Global Result 1** –The risk facing species and ecosystems is reduced. | **Sub-Result 1.3** – Key drivers of biodiversity loss are addressed through application of conservation measures. | **Target 10.** Protected area networks are expanded to conserve areas of particular importance for biodiversity through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures. | Aichi Targets:  5, 6, 7, 10, 11, 13  SDGs:  2.5; 6.6; 11; 4; 12.2; 13.3; 14.1; 14.2; 14.3; 14.4; 14.5; 14.6; 14.7; 15.a; 15.c; 15.1; 15.4; 15.5; 15.7; 15.8; 15.9 |
| **Global Result 2** – Natural resource governance at all levels enables delivery of effective conservation and equitable social outcomes by integrating good governance principles and rights-based approaches. | **Sub-Result 2.1** – Credible and trusted knowledge for assessing and improving natural resource governance at all levels is available from IUCN. | **Target 15.** Community-led, cultural, grassroots or protected area governance systems that achieve the effective and equitable governance of natural resources are recognised (as best practices/pilot testing), supported and promoted, while respecting the rights of nature. | Aichi Targets:  1, 2, 4, 11, 13, 17,18  SDGs:  5.1; 5.5; 5.a, 5.b and 5.c; 6.6; 11.4; 12.2; 16.6; 16.7; 16.b; 17.14 |
| **Global Result 3** –Societies recognise and enhance the ability of healthy and restored ecosystems to make effective contributions to meeting societal challenges of climate change, food security, human health and well-being, and economic and social development. | **Sub-Result 3.3** – Intact, modified and degraded landscapes, seascapes and watersheds that deliver direct benefits for society are equitably protected, managed and/or restored | **Target 30.** Legal, customary and institutional mechanisms and resourcing are effectively implemented to maintain intact, natural and semi-natural ecosystems that deliver benefits to society, including existing and new protected areas | Aichi Targets:  1, 2, 4, 14, 15, 17, 18  SDGs:  3.9; 6a; 6b; 6.3; 6.4; 6.5; 6.6; 11.4; 15.a, 15.c, 15.1, 15.4, 15.5, 15.7, 15.8 and 15.9; 16.6; 16.7 |

## Incremental cost reasoning (for GEF projects)

### **Baseline or business-as-usual scenario (without the GEF project)**

As stated in previous sections, peatland assessments have been initiated in the three countries mainly through the EU supported SEApeat project between 2011-2015. This has led to the identification of two globally significant peatlands in Cambodia and five other potential peatland sites; one globally significant peatland in Lao PDR and five smaller or potential sites; and two globally significant peatlands in Myanmar and 40 other smaller or potential sites. Additional assessments are needed for these smaller or potential peatland sites to assess their status and global significance and to determine if they should be incorporated into the protected area system or can be managed within a production landscape. The earlier SEApeat project assisted in the initial identification of sites but was closed in mid-2015 and there are no other projects supporting peatland assessment in the three countries concerned. Therefore, it is important that GEF funds and leveraged resources support further work in this regard.

Without GEF support, co-funding and other leveraged assistance the degradation of important identified peatlands within the target countries (including within Peam Krasop Wildlife Sanctuary in Cambodia, within the surrounding landscape of Beung Kiat Ngong Ramsar Site in Lao PDR, and within and surrounding Inle Lake Wildlife Sanctuary in Myanmar) would continue as a result of the existing threats that are ongoing in these areas. For the peatlands that have yet to be assessed and have no protection status, they will continue to degrade as a result of the major threats and drivers elaborated in prior sections. Degradation of the peatlands and their associated landscapes will lead to disrupted hydrology, loss of significant biodiversity and ecosystem services such as water supply, flood control and livelihood support for local communities as well as loss of carbon storage and increased GHG emissions. In the business-as-usual (BAU) scenario, government efforts to manage the peatlands in protected areas would not take the unique nature of peatland ecosystems into consideration. In regard to the non-protected peatlands in the landscape, government programs related to poverty alleviation and community development in peatland areas will likely focus mainly on improving productivity of agricultural products rather than sustainable peatland management. In addition, because the peatland ecosystems have only been recently described and are little known, without the project intervention it is unlikely that they will be considered in broader planning and conservation processes.

At present there are some management measures in the protected areas targeted at the main project sites, but since peatlands have only been identified in these sites in recent years, there are no specific interventions in the baseline related to peatlands management. As a result, some of the baseline activities in Inle Lake in Myanmar, for example (such as clearing of floating vegetation), are actually degrading the peatland ecosystems. In other sites, e.g., Peam Krasop Wildlife Sanctuary in Cambodia, the Sustainable Use and Community zones include significant areas of peatland, but the fragile nature of these ecosystems has not been recognised in the management plan.

### **Incremental reasoning**

The expected value added of the GEF intervention is in terms of securing the global environmental benefits related to the reduction in the rate of peatland degradation leading to improved ecosystem services (water supply, flood control, biodiversity, carbon storage and climate regulation, food security, etc.). Introduction of improved land management approaches as well as the enhancement of community livelihoods linked to sustainable peatland management will benefit the socio-economic status of local people and increase their overall resilience to climate change. It will also help the three countries to identify additional peatland areas and formulate appropriate management strategies and action plans to effectively manage these areas. All three countries are party to the ASEAN Agreement on Transboundary Haze Pollution as well as other regional initiatives related to sustainable management of peatland ecosystems such as the APMS. The project will help the countries meet their obligations to these initiatives such as the development of NAPPs by 2020. Without project support, these obligations would continue to go unmet.

Targeted interventions from the project are expected to significantly enhance knowledge on peatlands management of key stakeholders at national, provincial and local levels from different sectors, communities as well as the private sector. The GEF intervention will enhance the general awareness around the importance of peatlands and their level of recognition in other plans, policies and regulations. This will facilitate the allocation of additional resources to support their management from government and donor sources.

In Myanmar, the project will help to re-orient the government and donor support for management of the Inle Lake Wildlife Sanctuary and will leverage co-funding from IFAD for work to enhance sloping agriculture land technology (SALT) in the lake catchment to reduce sedimentation of the peatlands and the lake at large. The implementation of SALT will also contribute to soil carbon increase in the Inle Basin. In Lao PDR, the project will work in the Beung Kiat Ngong Ramsar Site with co-financing from KfW and Mekong WET to integrate peatland management considerations into the management and rehabilitation of the site. In Cambodia, the project will leverage co-funding from the Mekong WET project, funded by the German International Climate Initiative (IKI).

Moreover, the project will add a regional perspective and will foster regional collaboration among the three target countries, as well as with other countries of ASEAN. In particular, lessons learned will be exchanged with the two large national GEF projects that IFAD will be implementing in Indonesia and Malaysia.

In addition, the project will help leverage funds for the three countries from the EU-funded project, ‘Sustainable Use of Peatlands and Haze Mitigation in ASEAN’ (SUPA). As part of the focal sector for climate change, environment and disaster management of the ASEAN-EU Cooperation Programme 2014-2020, the EU has approved a budget of EUR 20 million for this project. SUPA is being planned with two objectives: i) to strengthen regional co-operation through the provision of technical and material support to regional and national institutions on sustainable management; and ii) to strengthen community’s organization and capacity on sustainable management and use of peatlands through non-state actor participation. It is anticipated that approximately US$3 million will be allocated through a grants facility to support peatland management in Cambodia, Lao PDR and Myanmar.

## Sustainability

### **Institutional sustainability**

The project's endeavour to be part of a broader programmatic approach to peatland management across ASEAN countries by itself builds in a sustainability aspect as it does not just involve working in one country on isolated sites but also focuses on enhancing institutional and financial sustainability measures for peatland management in these countries and across the region. In addition, the countries will share experiences and learn from each other through their membership in the ASEAN Task Force on Peatlands (ATFP) as well as through planned workshops under Component 4 of the project. These workshops and learning exchanges will include not only the three target countries but also other countries with experience such as Vietnam, Thailand and the Philippines.

This project will work to establish a clear understanding of the importance and special management requirements for peatlands in the target countries. The development of National Action Plans on Peatlands (NAPPs) and incorporating peatlands in other related policies, programs and management plans will help secure the sustainability for peatland conservation and sustainable use. Institutional and financing mechanisms for peatland management will also be established and strengthened as appropriate.

At the regional level, exchange of experience between agencies and personnel involved in peatland management and assessment through ASEAN mechanisms will be an efficient and cost-effective option for capacity enhancement and collective action.

In addition, strengthening capacity and raising awareness of relevant government agencies on the importance of peatland management will improve sustainability, along with approaches of engaging local communities in the management of peatlands.

### **Financial and economic sustainability**

With enhanced recognition of the value of peatlands and the impacts from their degradation as well as the identification and assessment of more peatlands in each of the countries, it is hoped that activities can be scaled up and maintained in the future through sustainable financing mechanisms.

The project will help governments in exploring sustainable financing mechanisms for peatland management including through engaging the private sector and the eco-tourism industry. And, there may be opportunities for financing future peatland projects through the REDD+ mechanism.

Opportunities for future financing of peatlands projects include Nationally Appropriate Mitigation Actions (NAMAs), the Clean Development Mechanism (CDM), the REDD+ financing mechanism, the Green Climate Fund (GCF), and the voluntary carbon market through the purchase of carbon offsets. In addition, future GEF financing may also be an option under subsequent programming cycles. Because there is significant mitigation benefit through the conservation of peatland carbon stores along with co-benefits related to climate adaptation and biodiversity, there are various options in this regard.

## Replication

The project has kept the goal of replication throughout its project design. A key output of the nation-wide surveys is the development of a priority list of conservation and rehabilitation sites within each of the three countries. While the project will not have the ability to initiate conservation actions in all of these prioritized areas during its lifetime, it will set the stage for future projects by providing strong guidance on how and where these future activities should take place. These guidance measures will be incorporated into National Action Plans on Peatlands for each of the three countries, also to be developed as a key output of the project, and will provide the basis for future financing around peatland conservation initiatives.

Another key output of the project involves awareness-raising and training. By building capacity across key stakeholders and agencies, each of the target countries will develop its workforce of those who understand peatland related issues and are trained in the technical aspects of their assessment and protection. This will facilitate future implementation of related projects.

The establishment of pilot activities in each of the three countries will provide the opportunity for lateral scaling of successful strategies into adjacent communities. As the focus is not only on peatland management but also the development of sustainable livelihoods, neighbouring communities will be able to observe quality of life improvements that they, in turn, would also benefit from. The project will endeavour to share lessons outward from the pilot sites in order to enhance replication and scaling.

Finally, the project will directly support country fulfilment of regional obligations such as the development of NAPPs per the APMS. It will also facilitate opportunities to exchange information at the regional level. This will undoubtedly open up opportunities for continued regional-level support to implement specific activities outlined in each country’s NAPP.

## Communication and knowledge management

The project will build on the knowledge management experience obtained through the APFP and SEApeat projects, which includes: active documentation of project sites and activities through photos and video records; organization of peer-to-peer learning and exchanges for local communities and government staff; multi-stakeholder workshops; and annual project steering and technical meetings. It will link with the ongoing APSMPE, which will facilitate exchange at regional level. It is envisaged that the progress and results of the project will be shared with annual meetings of the ATFP and will be reported to the Technical Working Group and Ministerial Steering Committee meeting on Transboundary Haze for the Mekong Sub-region – which oversees work on peatlands in the ASEAN region. Relevant aspects will also be reported to the ASEAN working groups on biodiversity and climate change.

There will also be synergies established with the new Indo-Burma Regional Ramsar Initiative (IBRRI) that involves the five Mekong countries, namely, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam and will act as a targeted mechanism for sharing experience on sustainable wetland (including peatland) management in the Mekong Sub-region. In addition, given the pilot peatland sites in Cambodia are in the coastal context, there will be considerable scope for knowledge exchange and learning through the Mangroves for the Future Initiative's Knowledge Platform. The Mekong WET project's regional collaboration focus on Ramsar site management will also provide opportunities for this GEF Project to leverage the knowledge management and experience sharing aspects.

Knowledge management and sharing will also take place at the national and local levels through meetings, workshops, training courses and exchanges. Peer-to-peer learning will be an important mechanism for engagement and knowledge exchange for local communities.

A grievance mechanism for the project community will be created, involving a channel for individuals to express concerns or complaints. The mechanism will be publicised. Any grievances received will be assessed based on IUCN’s established grievance mechanism. To minimise grievances it will be essential that the project implementing partners are highly attuned to community concerns, ideally local or regional NGOs with a track record of successful engagement in the area.

## Environmental and social safeguards

The project has gone through all the required safeguard screening and assessment steps as prescribed by IUCN’s Environmental and Social Management System (ESMS).

The project has been designed and is expected to bring about major positive environmental and social outcomes. However, a few social risks and/or uncertainties were identified by the ESMS screening that suggested the need to undertake a combined social analysis and impact assessment study (SIA) in the project sites in Cambodia and Lao PDR and to carry out extensive consultations with local communities in or near the demonstration sites to discuss benefits and potential social impacts of the project. The main issue was whether peatland management activities might involve the need to put in place restrictions on the access or use of peatland sites or resources; and to what extent this might have negative impacts on peoples’ livelihoods. The study also explored the implications of the presence of indigenous people in some of the demonstration sites and assessed the need for further provisions in the project in order to avoid social impacts. The Screening has classified the project as a moderate risk project.

The findings of the SIA have set some of the concerns at ease, as it was verified that traditional land and resource uses do not seem to present significant threats to the peatland ecosystems or their resources; hence, the measures for improving management practices should not require substantial changes. In addition, the final project design already makes adequate provisions for ensuring inclusive participation of stakeholders when planning the field interventions in detail. The project is still considered a moderate risk project, but towards the lower end of the spectrum. Mild adverse social risks might be expected due to potential restrictions; however, these are expected to be few in number and readily addressed by project activities and with the provided process framework guidance (see Annex D of the SIA). The development of an environmental and social management plan was therefore not deemed necessary.

The project site in Myanmar is inhabited by different ethnic groups, one of which can be considered as indigenous. However, as project activities are not expected to cause negative impacts, there is no need for an Indigenous Peoples Plan. It is also acknowledged that project design provides for inclusive and participatory involvement of these groups when defining and planning the respective sustainable livelihood opportunities.

Further details about the safeguards analysis can be retrieved from the ESMS Clearance Report attached in Appendix 8 and the SIA report provided in Appendix 9. The SIA report is also publicly accessible at: [https://www.iucn.org/sites/dev/files/gef\_peatlands\_sia\_report\_final.pdf](https://www.thegef.org/project/maximizing-carbon-sink-capacity-and-conserving-biodiversity-through-sustainable-conservation)

All IUCN projects are expected to implement the provisions of the IUCN grievance mechanism as explained on the IUCN website ([www.iucn.org/esms](http://www.worldbank.org/en/country/lao/overview)). Upon project start, the grievance procedure will need to be tailored in the form of a project-level grievance mechanism to be disseminated among relevant stakeholders.

# Institutional Framework and Implementation Arrangements

## Regional decision making and planning

The project will establish a Project Steering Committee at the regional level, involving:

1. IUCN as the GEF Implementing Agency
2. Cambodia’s MoE, represented by the Chair of the National Steering Committee
3. Lao PDR’s MoNRE, represented by the Chair of the National Steering Committee
4. Myanmar’s MONREC, represented by the Chair of the National Steering Committee
5. GEC
6. IFAD
7. ASEAN Secretariat
8. EU SUPA project/GIZ

The Regional Project Steering Committee will meet once a year, if possible back-to-back with the annual meeting of the ASEAN Task Force on Peatlands. The responsibilities of the Regional Project Steering Committee will include:

* Provide oversight of project progress and achievement of planned results.
* Review and approve Project Progress and Financial Reports and approve the Annual Work Plan and Budget at the regional level.
* Oversee the organization, coordination, and implementation of the project.
* Facilitate cooperation between the Project Management Unit, the Executing Agencies in each country and other relevant departments and partners.
* Advise the Regional Coordination Unit on other on-going and planned activities facilitating collaboration between the project and other programmes, projects, and initiatives in the three countries and at the ASEAN level.
* Facilitate the provision of co-financing support in a timely and effective manner.

## National decision making and planning

The project will also establish national-level Steering Committees in order to ensure cross-sectoral coordination and implementation. The National Steering Committees will meet at least once a year, and will be composed as follows.

*Cambodia*

|  |  |
| --- | --- |
| **Member** | **Organisational representative** |
| 1. Department of Freshwater Wetlands Conservation, MoE | Director – Chair of NSC |
| 1. Department of Agricultural Land Resources Management, MAFF | Director |
| 1. Department of Marine and Coastal Conservation, MOE | Director |
| 1. Department of Terrestrial Protected Areas Conservation, Southern Tonle Sap, MOE | Director |
| 1. Fisheries Administration, MAFF | Director |
| 1. Peam Krasop Wildlife Sanctuary, MoE | Director |
| 1. Department of Environment, Koh Kong Province | Director |
| 1. IUCN Cambodia | Country Representative |
| 1. NGO | Representative |
| 1. Royal University of Agriculture | Representative |

*Lao PDR*

|  |  |
| --- | --- |
| **Member** | **Organisational representative** |
| 1. Department of Environmental Quality Promotion (DEQP), MoNRE | Director – Chair of NSC |
| 1. Lao National Mekong Committee Secretariat, MoNRE | Director |
| 1. Department of Water Resources (DWR), MoNRE | Director |
| 1. Department of Forest Resource Management (DFRM), MAF | Director |
| 1. Department of Agriculture Land Management and Statistics | Director |
| 1. IUCN Lao PDR | Country Representative |
| 1. NGO | Representative |
| 1. CAWA project | Representative as observer |
| 1. MRWP project | Representative as observer |
| 1. National University of Laos | Representative |
| 1. Lao Women’s Union | Representative |

*Myanmar*

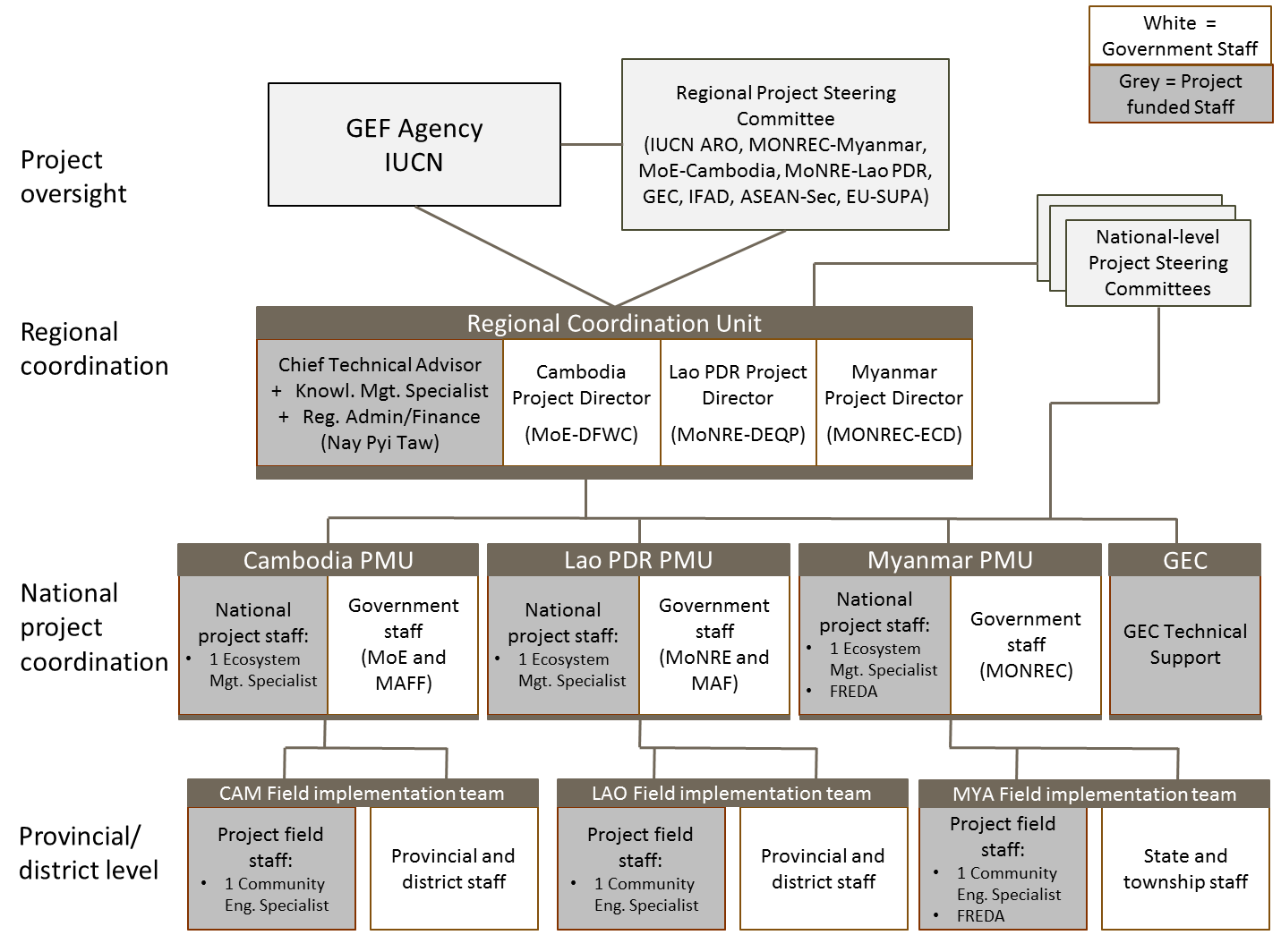
|  |  |
| --- | --- |
| **Member** | **Organisational representative** |
| 1. Environmental Conservation Department (ECD), MONREC | Director – Chair of NSC |
| 1. Shan State Region Government | Representative |
| 1. Nature and Wildlife Conservation Division, FD | Director |
| 1. Watershed Management Division, FD | Director |
| 1. Department of Agriculture, MOAI | Director |
| 1. Department of Irrigation, MOAI | Director |
| 1. General Administration Department | Director |
| 1. Forest Research Institute | Director |
| 1. Department of Agriculture Research | Director |
| 1. IUCN Myanmar | Country Representative |
| 1. FREDA | Representative |
| 1. Local NGO | Representative |

The responsibilities of the National Steering Committees will include:

* Provide oversight of project progress and achievement of planned results at the national level.
* Review and approve Project Progress and Financial Reports and approve the Annual Work Plan and Budget at the national level.
* Oversee the organization, coordination, and implementation of the project at the national level.
* Facilitate cooperation between the Project Management Unit, the Executing Agency in each country and other relevant departments and partners.
* Advise the Project Management Unit on other on-going and planned activities facilitating collaboration between the project and other programmes, projects, and initiatives in-country.

## Project coordination and management

The proposed project management structure is summarised below.



*Figure 12: Project implementation structure*

IUCN will be the GEF Implementing Agency. The Lead Executing Agencies will be the Ministry of Environment (MoE) in Cambodia, the Ministry of Natural Resources and Environment (MoNRE) in Lao PDR, and the Ministry of Natural Resources and Environment Conservation (MONREC) in Myanmar. Based on requests from the Governments of Cambodia, Lao PDR, and Myanmar, IUCN will support the Lead Executing Agencies in the financial and operational execution of the GEF resources, including hiring of project staff, financial management, procurement of goods, and contracting of services following IUCN rules and procedures.

In accordance with the present project document, progress in the financial execution of the project, and the Annual Work Plan and Budget will be approved by the regional Project Steering Committee and the National Steering Committees. A strict firewalling between IUCN’s role as the GEF Agency and its support to the execution will be maintained. All project staff hired by IUCN will report to the relevant National Project Directors and will be independent from the GEF Agency staff.

While government staff time is provided in kind, their travel, accommodation and per diem expenses related to the project activities will be covered from the project budget. Relevant IUCN and/or government rates apply, depending on the regulations in each country.

*Regional Coordination Unit*

The project will be delivered through a Regional Coordination Unit (RCU) and a national Project Management Unit (PMU) in each of the three countries. The RCU will be managed on a day-to-day basis by the Chief Technical Advisor and the three National Project Directors assigned (on a part-time basis) by the lead agencies in the three countries (MoE, MoNRE and MONREC).

The RCU will be responsible for the overall day-to-day project operations. The RCU will operate under the guidance of the Regional Steering Committee, to ensure the effective and efficient coordination and delivery of the project. The RCU is not a physical unit since the three National Project Directors are located in three different countries. Rather, it is an organizational unit that communicates regularly via video calling, email and other means.

In addition to the National Project Directors of the three countries, the RCU is composed of the following project staff:

1. Chief Technical Advisor
2. Knowledge Management Specialist (50%)
3. Regional Finance and Administrative Officer

These RCU staff members will be situated in Nay Pyi Taw, Myanmar at the same location as the national PMU for Myanmar. The Regional Finance/Admin Officer will be supported by part-time national Finance and Administrative staff of IUCN in Cambodia and Lao PDR.

The RCU will:

* Lead the overall coordination of the project in close collaboration with project partners.
* Manage project information and documentation and distribution of project reports, communications products, and training materials to relevant stakeholders.
* Manage project M&E and knowledge management, and prepare biannual Project Progress Reports.
* Liaise with IUCN when preparing financial reports.
* Act as the secretariat to the Regional Project Steering Committee.
* Handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of inter-institutional collaboration, and ensure the timely delivery of inputs and outputs.
* Organize workshops and annual meetings for the project.
* Develop work plans with detailed budgets for the next year to be approved by the Regional Project Steering Committee and the national Steering Committees.
* Develop bi-annual Project Progress and Financial reports and assist in the preparation of the annual Project Implementation Review and midterm and final evaluations.
* Prepare and submit to the Regional Project Steering Committee, the national Steering Committees and IUCN Project Progress Reports on outputs and outcomes achieved, financial statements, Annual Work Plans, and detailed Budgets.

|  |
| --- |
| 1. **The National Project Director** (part time, government staff)will:  * Support the Chief Technical Advisor and the Ecosystem Management Specialist in the overall coordination of the project. * Manage the performance of the Chief Technical Advisor and the Ecosystem Management Specialist. * Oversee the work of the project team. * Oversee project M&E and assist the CTA to prepare biannual Project Progress Reports. * Oversee the development of work plans and budgets to be approved by the NSCs. * Assign other government staff to support the implementation of the project, including technical inputs, logistics and organization of meetings and events. * Coordinate project interventions with other on-going activities and ensure a high degree of inter-institutional collaboration, and the timely delivery of inputs and outputs. * Maintain linkages with other related regional and national projects and identify opportunities for partnership and collaboration with other agencies, organizations and donors. |
| 1. **The Chief Technical Advisor** (project staff) will:  * Lead the tasks of the RCU. * Coordinate the implementation of the project activities with the national PMUs in the three participating countries. * Manage performance of all project staff. * Manage project finances according to the agreed project budget. * Monitor, and regularly report on the progress of the project against annual work plans, and identify issues that need urgent attention by the regional and national Project Steering Committees. * Provide six-monthly and annual written reports on the overall project delivery, including by country, covering issues such as project activities, outputs and outcome delivery, and staffing. * Maintain linkages with other related regional and national projects and identify opportunities for partnership, technical collaboration and knowledge exchange with other agencies, organizations and donors. In particular, this will involve collaboration with other GEF-funded projects on peatland management in the ASEAN countries, as well as other projects relevant to the target sites.   The Chief Technical Advisor will have at least 10-15 years of relevant experience in managing large regional ecosystem-related projects, and will have strong knowledge, qualifications and experience in peatland, wetland and/or mangrove ecology, as well as climate change adaptation and mitigation. |
| 1. **The Knowledge Management Specialist** (project staff) will:  * Lead the project M&E and knowledge management, and prepare biannual Project Progress Reports. * Support the communications, awareness raising and capacity building tasks of the project. * Oversee the planning, coordination and implementation of knowledge management policies, procedures and systems (including compliance with national laws), and ensure these are efficient and effective. * Develop a knowledge management strategy. * Collate information and prepare knowledge management reports including on the use of knowledge products. * Support the Chief Technical Advisor and the Ecosystem Management Specialists to engage effectively with the PSC and NSCs. * Manage and implement capacity building in knowledge management. |
| 1. **A regional Finance and Administrative Officer** (project staff) will:  * Oversee the planning, coordination and implementation of administrative policies, procedures and systems, and ensure these are efficient and effective. * Prepare personnel and services contracts, and procurement documents including submission of documentation to IUCN under the direction of the Chief Technical Advisor. * Support recruitment processes and oversee the induction and training of personnel. * Manage office facilities, including office space, equipment and supplies. * Manage the project’s assets (e.g. vehicles, computers, filed equipment) and asset register. * Oversee the planning, coordination and implementation of financial policies, procedures and systems, (including ant-fraud policies) and ensure these are efficient and effective. * Prepare detailed budgets. * Maintain accounts and financial records. * Prepare monthly, quarterly and annual financial reports. * Prepare relevant documents for internal and external financial audits. * Participate in financial audits. |

*National Project Management Units (PMUs)*

The national PMUs will be overseen by the National Project Director (NPD) in each country, and will be managed on a day-to-day basis by an Ecosystem Management Specialist, who acts as the National Project Coordinator.

The national PMUs will:

* Manage field operations in close collaboration with the lead agencies in each country, FREDA, GEC and other partners.
* Contribute to project M&E and knowledge management, and assist the Chief Technical Advisor to prepare biannual Project Progress Reports.
* Act as the secretariat to the national Steering Committees.
* Handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of inter-institutional collaboration, and ensure the timely delivery of inputs and outputs.
* Organize workshops and annual meetings for the project.
* Develop work plans with detailed budgets for the next year to be approved by the Regional Project Steering Committee and the national Steering Committees.
* Assist in the development of bi-annual Project Progress and Financial reports and assist in the preparation of the annual Project Implementation Review and midterm and final evaluations.

|  |
| --- |
| 1. **The Ecosystem Management Specialist** (project staff) in each country will:  * Act as the National Project Coordinator in the respective country. * Lead the in-country implementation of project activities in close collaboration with the RCU and the national PMU, including technical implementation. * Handle day-to-day project issues and requirements. * Monitor, and regularly report on the progress of the project against annual budget and work plan. * Prepare monthly reporting according to the requirements in each country. * Provide inputs for the six-monthly and annual written reports on the overall project delivery, covering issues such as project activities, outputs and outcome delivery. * Maintain linkages with other national projects dealing with peatland ecosystem and climate change related issues and identify opportunities for partnership, technical collaboration and knowledge exchange with other agencies, organizations and donors.   The Ecosystem Management Specialist will have at least 5 years of relevant experience in facilitating/managing ecosystem-related projects at national and or regional levels, and will have strong knowledge, qualifications and experience in peatland, wetland and/or mangrove ecology. |
| 1. **The Community Engagement Specialist** (project staff) in each country will:  * Coordinate the field activities of the project in close collaboration with the Ecosystem Management Specialist, in particular, but not limited to, activities of component 3. * Ensure the project activities are in line with IUCN’s Environmental and Social Management System (ESMS) and the recommendations of the Social Impact Assessment conducted during the project design phase. * Support the implementation of the project’s field activities in close collaboration with the Project team and Forest Department staff. * Handle day-to-day field operations. * Coordinate project activities with stakeholders within and outside the relevant government agency and with communities at the municipal and local level. * Coordinate the implementation of village and township/district level project activities with the project team. * Provide six-monthly and annual written reports on project delivery, covering issues such as project activities, outputs and outcome delivery, and performance of staff/consultants. * Support the Ecosystem Management Specialist in other tasks of the project.   The Community Engagement Specialist will have at least 5 years of relevant experience in coordinating field activities of ecosystem-related projects, with strong experience in community engagement and participatory planning. |
| 1. **Other government staff assigned to the PMU** will:  * Support the implementation of the field activities in close collaboration with the National Project Coordinator. * Coordinate project activities with stakeholders within and outside the relevant government agency. * Provide technical inputs for project implementation and support logistics and organization of meetings and events. * Coordinate project activities with stakeholders at the local level. |
| 1. **National Finance and Administrative Staff** (project staff) in Cambodia and Myanmar will:  * Oversee the planning, coordination and implementation of administrative policies, procedures and systems in the respective country, and ensure these are efficient and effective. * Manage office facilities, including office space, equipment and supplies. * Manage the project’s assets (e.g. vehicles, computers, filed equipment) and asset register. * Oversee the planning, coordination and implementation of financial policies, procedures and systems, (including ant-fraud policies) and ensure these are efficient and effective. * Prepare detailed budgets at the national level. * Maintain accounts and financial records. * Prepare monthly, quarterly and annual financial reports. * Prepare relevant documents for internal and external financial audits. * Participate in financial audits. |

*Provincial/State and District Field Implementation*

A Provincial/State and District-level field implementation team will be formed in each of the sites (Koh Kong Province, PKWS in Cambodia; Champasak Province, BKN in Lao PDR; and Shan State, Inle Lake in Myanmar), consisting of the main stakeholders of government and civil society.

*FREDA*

In Myanmar, based on their previous experience and involvement under SEApeat and upon request of ECD, the activities implementation for components 1-3 will be supported by FREDA, an IUCN NGO member, in close collaboration with the Ecosystem Management Specialist and the Community Engagement Specialist.

In particular, FREDA will:

* Support field operations in close collaboration with the national PMU and the lead agency in Myanmar (ECD).
* Support the implementation of the field surveys, national workshops, and policy and planning outcomes.
* Lead the implementation of awareness raising and capacity building activities.
* Lead the implementation of best management practices (component 3) in Inle Lake.

*Global Environment Centre (GEC)*

The Global Environment Centre is the technical and operational support partner for the ASEAN Programme on Sustainable Management of Peatland Ecosystems (APSMPE) and has more than 15 years of experience in supporting and facilitating collaboration for peatland assessment and management in the ASEAN region. GEC will provide technical support for the implementation of the project in particular for the implementation of components 1, 2 and 4.

In particular, GEC will:

Component 1

* Support the design and implementation of the peatland inventories and surveys including the development of training modules.
* Lead the development of criteria for prioritizing sites for conservation and rehabilitation and guide work to prioritise peatlands for conservation.

Component 2

* Provide technical support for national action plan development and input to national workshops, and policy and planning outcomes. .

Component 3

* Provide technical input into the proposed management strategies for the peatlands in the targeted project sites.

Component 4

* Lead the development of guidelines for conservation and sustainable use of peatland resources in Mekong region in close collaboration with all stakeholders
* Support the documentation of the lessons learned document of peatlands management and sharing at the regional level.
* Support the organization of regional exchanges.

## Procurement plan

All procurement of goods and services will be made with complete impartiality based solely on the merits of supplier proposals, including such considerations as cost, quality, environmental impact, delivery, and payment terms. All procurement of goods and contracting of services will follow IUCN rules and procedures, and will be done in consultation with the National Project Director from the respective lead government agency. The National Project Directors will be invited to be part of the interview panel for recruitments of relevant project staff and consultants. As a general rule, equipment purchased for the PMUs will remain with the government agencies after the project ends.

A detailed procurement plan is included as Appendix 4.

# 

# Stakeholder Engagement and Participation

Stakeholders have been consulted extensively during the project preparation phase. The outcomes of the consultations are summarised in the table below:

*Table 10: Summary of stakeholder consultations*

| **Stakeholder (SH)** | **Mandate** of SH / **Type of involvement** and Discussion held during **PPG** | **Interest** of SH in the project | **Influence** of SH on the project | **Impact** of the project on SH | **Role of SH in project** or other forms of engagement |
| --- | --- | --- | --- | --- | --- |
| **A. Global/regional** | | | | | |
| *IUCN Asia Regional Office* | IUCN has been overseeing project preparation; links with other IUCN projects in the three countries, in particular Mekong WET; Mangroves of the Future (MFF); CAWA; MRWP | High: Contributes to priorities outlined in IUCN Programme 2017-2020 | High: Strategic directions and planning | Moderate | GEF Agency  Support to execution |
| *Global Environment Centre (GEC)* | Based in Kuala Lumpur, Malaysia; technical and operational support partner of the ASEAN Peatland Management Strategy; involved in previous SEApeat project; extensively consulted and involved during PPG (reviewed draft documents; participated in workshops) | High: Aligns with organization mission | High: Strategic implementation guidance and collaboration with ASEAN | Moderate | Co-financing for activities, Executing partner, providing technical support and facilitate linkage with ASEAN mechanism |
| *ASEAN Secretariat* | Coordinate implementation of ASEAN Programme on Sustainable Management of Peatland Ecosystems (APSMPE) 2014-2020 and ASEAN Peatland Management Strategy; organise meetings of the ASEAN Task Force on Peatlands | High: Contributes to priorities of APSMPE | High: Encourage national commitments | Moderate: The results/lessons learned from the project will support the implementation of the APSMPE | Facilitate linkage of project to ASEAN-supported activities and programmes |
| *IFAD* | GEF Agency for peatlands projects in Indonesia and Malaysia; partner under ASEAN; planned Eastern States Agribusiness Project in Myanmar, which includes component on Sloping Agriculture Land Technology (SALT) in the Inle Lake watershed. Supporting the regional project on Measurable Action for Haze Free Southeast Asia (MAHFSA) which will link to the component 4 of the project. Consulted during PPG. | High: Aligns with organization mission | Moderate: Coordination of activities and lessons learned | Moderate | Co-financing of activities to reduce soil erosion in Inle Lake catchment |
| *Asian Development Bank (ADB) Greater Mekong Sub-region Environment Operations Centre* | Consulted to explore potential linkages with ADB projects (including GEF projects)  Biodiversity Conservation Corridor (BCC) Initiative; used to work in Beung Kiat Ngong through WWF; Forest Investment Program (FIP); activities in Koh Kong Province, Cambodia, through WCS | Moderate: Interested in identifying and promoting linkages with ADB projects | Moderate: Provide lessons learned | Moderate: Opportunity for increased regional collaboration and exchange of best practices | Exchange with ADB programmes and projects |
| *GIZ / EU SUPA project (Sustainable Use of Peatland and Haze Mitigation in ASEAN Programme)* | The EU SUPA project has a budget of 18.6 million Euros over 60 months. GIZ will have the executing role of coordinating the grants that will be channelled directly to the countries. Consulted during PPG. | High: To create synergies between the project and the EU-SUPA project | High: Coordination of activities and strategic implementation guidance | High | Co-financing for activities related to peatland inventory, National Action Plans on Peatlands (NAPPs), disseminating good practices of integrated peatland management, and regional cooperation |
| *Indo-Burma Ramsar Regional Initiative (IBRRI)* | Regional platform under the Ramsar Convention that aims to promote the effective implementation of the Convention in five countries (Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam). IUCN Asia hosts Secretariat. | Moderate: Project supports implementation of sub-regional Ramsar strategic plan | Moderate: Provide lessons learned from other countries | Moderate: Opportunity for increased regional collaboration and exchange of best practices | Dissemination of lessons learned |
| *Mekong River Commission (MRC)* | Intergovernmental body concerned with the Mekong River basin and charged to promote and co-ordinate sustainable management and development of water and related resources for the countries’ mutual benefit and the people’s well-being | High: Interested in sustainable management of wetlands in Mekong countries | Moderate: Exchange of lessons learned | Moderate | Keep informed |
| *Mekong Wetlands University Network (MWUN)* | Provides an annual training on Wetlands Management in the Mekong Basin (usually in June-August). There are 22 university members from the Lower Mekong Region contributing to knowledge sharing efforts. | High: Interested in the ecologically sound management of wetlands | Moderate: Exchange key knowledge products and information | Moderate | Keep informed |
| **B. Cambodia** | | | | | |
| Local villagers (Cambodia) | | | | | |
| *Boeung Kachhang Village (Bak Klong Commune), PKWS* | Two households were interviewed during PPG mission in December 2016. Target area of ADB project implemented by WCS. Participated in previous IUCN projects. Proposed as demonstration site of this project due to their location in peatland area.  During the social impact assessment (SIA) mission in May 2017, 31 people were consulted from Boeung Kachhang during the May SIA, including 2 representatives from the Cham community. Members of the Cham community had not been interviewed previously. In addition, small focus groups were conducted with women and youth.  The consultation confirmed the results obtained from the December 2016 visit by the PPG. | High: Activities directly relate to the daily life of the communities; project aims to support sustainable livelihoods. All community members expressed an interest in learning more about peat and why it is important. | High: The village has a strong and active community protected area (CPA) committee which will help to guarantee implementation and monitoring. They are key to the project’s success. | High:  *Potential positive:* Improved livelihoods and protected ecosystems  *Potential negative:*  Changes to the PKWS management plan in order to protect peat might lead to access restrictions (e.g., on logging, fishing and hunting) | Demonstration site for best management practices |
| *Koh Kapik Villages 1 and 2 (Koh Kapik Commune), PKWS* | Not consulted during PPG mission, but proposed as demonstration site during mission due to extensive peatlands. Participated in previous IUCN projects. Proposed as demonstration site of this project due to their location in peatland area and potential synergies with other projects and initiatives.  During the SIA mission in May 2017, 21 people were consulted from Koh Kapik Villages 1 and 2. This included 2 persons from Koh Sra Laok. | High: Activities directly relate to the daily life of the communities; project aims to support sustainable livelihoods. All community members expressed interest in learning more about peat and why it is important. | High: The villagers are poor, and use mangrove resources extensively. They acknowledge the positive impact of the mangrove restoration project; however, some appear to be using small amounts of peat as fertilizer for their fruit trees. Influencing their behaviour will be key for the project’s success. | High:  *Potential positive:* Villagers see the possibility for improved livelihoods and improved ecosystems.  *Potential negative:*  Changes to the PKWS management plan in order to protect peat might lead to access restrictions (e.g., on logging, fishing and hunting). | Demonstration site for best management practices |
| *Peam Krasop Villages 1 and 2 (Peam Krasop Commune), inside Peam Krasop Wildlife Sanctuary (PKWS)* | There are two villages within Peam Krasop: Peam Krasop 1 and Peam Krasop 2. Consultation meeting during PPG mission in December 2016: Of the 12 from the commune, two were women (one from the Savings Group and one from the community). Representatives included the deputy commune leader, commune policy officer, wildlife sanctuary managers and rangers. | Moderate: Learn about importance of peat | Moderate: Involved in consultation process if changes in management plan are proposed | Moderate:  *Potential positive:* Livelihood benefits through improved health of ecosystems when better protected/ managed  *Potential negative:* Changes of PKWS management plan to protect peat might lead to access restrictions (e.g., logging, fishing and hunting) | Potential beneficiary of upscaling and awareness raising activities. While the village has not been selected as demonstration site, if the survey confirms peatland and the need of use restrictions, the villages will be involved in the participatory process of defining demarcations/ restrictions; where impacts cannot be avoided, they will need to have access to mitigation measures. |
| *Toul Korki Krom and Toul Korki Leu (Toul Korki Commune), PKWS* | Royal Turtle breeding centre of Fisheries Administration and WCS is located in this village. Target site of MFF. Villages are not directly situated within peatlands. | Moderate: Learn about importance of peat | Moderate: Consultation process if changes to management plan are proposed | Moderate:  *Potential positive:* Livelihood benefits and through improved health of ecosystems when better protected/ managed  *Potential negative:* Even if they arenot situated in peatlands, villagers may actually use peatland areas; hence, changes to the PKWS management plan might lead to access restrictions (e.g., on logging, fishing and hunting) | Potential beneficiary of upscaling and awareness raising activities. While the village has not been selected as a demonstration site, if the survey confirms peatland and the need for use restrictions, the villages will be involved in the participatory process of defining demarcations/ restrictions; where impacts cannot be avoided, they will need to have access to mitigation measures. |
| *Andoung Teuk Commune, inside Botum Sakor National Park (BSNP)* | Target area of ADB project implemented by WCS. Consulted during project preparation. The formal consultation meeting included the Andong Teuk Commune leader, national park representatives plus village leaders from the seven villages within the commune. In addition to the meeting, the PPG team informally interviewed two households within the Andong Teuk Community Protected Area. | Moderate: Learn about importance of peat | Moderate: | Low:  *Potential positive:* Improved livelihoods and ecosystems through better protection/management (indirect impact once the WCS/BCC project begins to upscale lessons from the GEF Mekong Peatlands Project) | Potential beneficiary of upscaling and awareness raising activities |
| *Peam Krasop Community Fisheries (CFi)* | Local level institution which has a formal agreement with the Fisheries Administration. This allows communities to organize fishing, aquaculture, fish processing and trade, in accordance with a management plan. Consulted during PPG. | High: Synergies with GEF Mekong Peatlands project can help strengthen enforcement | Moderate: On the ground monitoring and implementation | Moderate: Improved ecosystem biodiversity and human capacity development | Local partner |
| *Peam Krasop Community Protected Area (CPA)* | Communities have created six CPAs in the Sustainable Use Zones within PKWS. The communities set the regulations themselves, but under the supervision of the DoE, and the Director of the PKWS. | High: Interested in conservation efforts, livelihood improvement and educational materials related to peatlands management | Moderate: Involved in consultation process if changes in management plan are proposed | Moderate:  *Potential positive:* Improved ecosystem biodiversity and human capacity development.  *Potential negative*: Changes in the PKWS management plan to protect peat might lead to access restrictions (e.g., on logging, fishing and hunting) | Local partner |
| *Koh Sralao Community Protected Area (CPA)* | Koh Sralao is located in the highlands. | High: Interested in conservation efforts, livelihood improvement and educational materials related to peatlands management | Moderate: Will be involved in consultation process if changes to the management plan are proposed | Moderate: Improved ecosystem biodiversity and human capacity development | Local partner |
| Local CBO/NGOs (Cambodia) | | | | | |
| *Peam Krasop ecotourism-based community committee* |  | High: Peatland management plan and activities could support ecotourism | Moderate: Provide inputs/ key insights for the project’s ecotourism activities | Possibly Moderate: Improved ecotourism credibility and best practices | Potentially inform ecotourism sustainable practices in peatland areas |
| *Tuek* | New local NGO recommended by WCS which has been set up to work with local communities to address threats to waterbirds | High: Peatland management plan and activities could support the minimization of threats to waterbirds | Moderate: Provide inputs/ key insights about local biodiversity threats | Moderate: Improved waterbird habitat conservation and dissemination of relevant information | Potential local partner for species conservation efforts |
| INGOs and international organizations (Cambodia) | | | | | |
| *IUCN Cambodia project office* | Long history of projects in PKWS/Koh Kong Province | High: Continuation of previous conservation efforts | High: Support on the ground implementation | Moderate | Project support and direction |
| *Wildlife Conservation Society (WCS)* | Several conservation projects in Cambodia; implements ADB BCC project in Koh Kong; supports REDD+ process | High: Project alignment to support REDD+ goals; synergies in PKWS and BSNP sites | High: Collaborative information sharing related to the Koh Kong site | Moderate: Increased breadth of impact within site, as well as improved scalability of work | Collaborate in PKWS. Scaling up actions at BSNP |
| *Wetlands International (WI)* | WI supported the Overview of Cambodian Wetlands project and has been over the years involved in a number of wetland projects implemented at local level, including a wetland study in Koh Kapik Ramsar site (inside PKWS). | Moderate | Low | Low | Sharing of information |
| *German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) -German International Climate Initiative (IKI)* | Through IUCN, BMUB is supporting Mekong WET, which is focused on ecosystem-based adaptation and mitigation within Ramsar sites in the Mekong Region. The project was consulted and involved during PPG at various stages. | High: One of the focal areas for Mekong WET is Koh Kapik. As climate change mitigation is one of the goals of Mekong WET, sustainable management of peatlands will be directly relevant. | High: Potential for high synergy with peatlands project including the updating of the PKWS management plan to incorporate peatlands. | Moderate: Increased breadth of impact within site, as well as improved scalability of work | Co-financing for activities related to updating of PKWS management plan |
| Research institutions & universities (Cambodia) | | | | | |
| *Royal University of Agriculture, Cambodia* | Participated in PPG inception meeting; students and young teachers have collaborated with University of Copenhagen | High: Interested in survey results | Moderate: Could improve local ownership of surveys | Moderate | Could be involved in surveys |
| *University of Copenhagen* | Research on rare evergreen swamp forest in Prey Lang (Northern Cambodia); also worked with indigenous group, Prey Lang Community Network (PLCN) to patrol forest | High: Interested in surveys and in sharing results of previous studies | Moderate: Sharing of results | Moderate | Sharing of results |
| *Royal University of Phnom Penh (RUPP), Cambodia* | Botanical students have collaborated with University of Copenhagen | High: Interested in survey results | Moderate: Could improve local ownership of surveys | Moderate | Could be involved in surveys |
| Government agencies (Cambodia) | | | | | |
| *Department of Freshwater Wetlands Conservation, Ministry of Environment (MOE)* | Lead Executing Agency in Cambodia; very involved in PPG mission, including field visits to PKWS and BSNP and local stakeholder consultations | High: Peatlands fall under their mandate for environmental management in Cambodia | High: Key department in the development, training and implementation of key activities | High: Increased education/awareness of staff, improved conservation efforts and knowledge in mapping of peatlands | Lead Executing Agency in Cambodia |
| *Department of Marine and Coastal Conservation, MOE* | In charge of coastal wetlands; participated in inception meeting | High: Overlap between identified demonstration sites and coastal wetlands under their management | High: Partner for effective implementation | High: Improved governing capacity and integrated management strategy of coastal wetlands | Partner |
| *Department of Terrestrial Protected Areas Conservation, MOE* | In charge of terrestrial protected areas, participated in inception meeting | High: Overlap between identified demonstration sites and protected areas under their management | High: Partner for effective implementation | Moderate: Improved governing capacity and integrated management strategy of protected areas | Partner for incorporation of peatlands management into protected areas management plans |
| *Department of Fisheries Conservation, Fisheries Administration (FiA), Ministry of Agriculture, Forestry, and Fisheries (MAFF)* | In charge of community fisheries, participated in inception meeting | High: Project directly affects FiA and MAFF activities in demonstration sites | High: Partner for effective implementation | Moderate: Improved governing capacity and integrated management strategy of coastal fisheries | Partner |
| *Department of Agricultural Land Resources Management, MAFF* | Mandate to establish policy around land use, as well as establishing guidelines on agriculture and soils. Accompanied PPG field mission to PKWS and BSNP.  Current activities relevant to peatlands:  1. Developing ASEAN Soil Guidelines  2. Soil information and land suitability evaluation system  3. Draft on Agricultural Land Law | High: Project can facilitate effective implementation of guidelines and provide educational materials related to peatlands management | High: Support activities related to peatlands management on agricultural land and guide identification of additional sites | Moderate: Improved capacity and awareness on sustainable peatland management | Partner |
| *Forest Carbon Credits and Climate Change Office, Forestry Administration, MAFF* | Leading REDD+ process. After 2020, Cambodia should be able to claim REDD+ payments transferred to MOE under the Council for Sustainable Development. Participated in inception meeting. | Moderate: Project supports REDD+ goals | Moderate: Coordinate future investments and allocation of funds influencing long term sustainability of project goals (after project close-out) | Moderate | Link with REDD+ and national climate change policies |
| *Ministry of Land Management, Urban Planning and Construction* (MLMUPC) | Mandate to strengthen land tenure security, manage land and natural resources, and to promote equitable land distribution | Moderate | Moderate: Could support clarification of land tenure in project sites | Low | Keep informed |
| Provincial government (Cambodia) | | | | | |
| *Koh Kong Provincial Governor and Provincial Authorities* | Responsibility for administering and managing political and administrative affairs in Koh Kong Province | High: Aligns with management responsibilities of the province | High: Inform feasibility within local sites, monitoring activities impacts and achievements | Moderate | Partner for implementation of activities in PKWS |
| *Koh Kong Town Administration* | Responsibility for administering and managing political and administrative affairs in Koh Kong Town | High: Aligns with management responsibilities | High: Inform feasibility within local sites, monitoring activities impacts and achievements | Moderate | Partner for implementation of activities in PKWS |
| *Provincial Department of Environment* | Responsibility for administering PKWS; key stakeholder consulted during PPG inception mission along with other provincial office representatives | High: Aligns with management responsibilities | High: Inform feasibility within local sites, management planning | Moderate | Partner for implementation of activities in PKWS |
| *Provincial Fisheries Administration Cantonment, Koh Kong* | Responsibility for fisheries management; consulted during inception mission | High: Aligns with management responsibilities | High: Inform feasibility within local sites, management planning | Moderate | Partner for implementation of activities in PKWS |
| *Provincial Department of Agriculture* | Responsibility over agricultural management; consulted during inception mission | Moderate | Moderate | Moderate | Partner for implementation |
| *Provincial Department of Land Management, Urbanization, Construction and Cadastre* | Responsibility over land management | Moderate | Moderate | Moderate | Keep informed |
| *Department of Tourism* | Responsibility for administering and managing tourism in Koh Kong Province; consulted during inception mission | Moderate: Peatland management plan and activities could support ecotourism | Moderate: Key insights about ecotourism | Possibly Moderate: Improved ecotourism credibility and best practices | Potentially inform ecotourism sustainable practices in peatland areas |
| *Peam Krasop Wildlife Sanctuary (PKWS) Authorities, MOE* | Responsibility for the management of the Wildlife Sanctuary | High: Aligns with management responsibilities | High: Support on the ground implementation | Moderate | Partner for implementation of activities in PKWS |
| *Botum Sakor National Park (BSNP) Authorities, MOE* | Responsibility for the management of BSNP | High: Aligns with management responsibilities | High: Inform feasibility of outreach and replication in BSNP | Moderate | Upscaling and awareness raising in BSNP |
| Local government (Cambodia) | | | | | |
| *Commune chiefs* | Consulted during the PPG mission to gather essential information about demonstration sites and community considerations | High: Direct impact to community and livelihoods | High: Support on the ground implementation | Moderate: Positively impact livelihoods, management plans and improved sustainable agriculture production | Local partner |
| **C. Lao PDR** | | | | | |
| Local villagers (Lao PDR) | | | | | |
| *Ban Thongxay* | Village nearby Bung Naphat peatland site (outside Beung Kiat Ngong Ramsar Site), selected as demonstration site.  41 villagers were consulted during the SIA mission in May 2017. This village has official ownership over Beung Paphat, a wetland with peat that is outside the BKN Ramsar site but is within the PA. Special attention was given to conducting small focus groups with poor families, women and youth. | High: Activities directly relate to the daily life of the communities; project aims to support sustainable livelihoods. People expressed interest in learning more about peat and why it is important. | High: The villagers are already participating in the ADB BCC project and have formed a committee to manage their Village Development Fund (VDF). This could provide a mechanism for implementing and monitoring the project’s sustainable livelihood activities. | High:  *Potential positive:*  The villagers benefit from sustainable livelihood activities and realize the value of improved ecosystems.  *Potential negative:*  While current use of peatland seems sustainable, there is a small chance that the peatland survey will identify unsustainable practices which would need to be changed | Demonstration site for best management practices |
| *Ban Kaeng Na’ang (Naang)* | 37 villagers were consulted during the SIA mission in May 2017. This village is one of three villages which use the Beung Paphat wetlands. Special attention was given to conducting small focus groups for poor families, women and youth. | High: Activities related to the daily life of the communities; project aims to support sustainable livelihoods.  People expressed interest in learning more about peat and why it is important | High: The villagers are already participating in the ADB BCC project and have formed a committee to manage their Village Development Fund (VDF). This could provide a mechanism for implementing and monitoring the project’s sustainable livelihood activities. | High:  *Potential positive:*  The villagers benefit from sustainable livelihood activities and realize the value of improved ecosystems.  *Potential negative:*  While current use of peatland seems sustainable, there is a small chance that the peatland survey will identify unsustainable practices which would need to be changed | Demonstration site for best management practices |
| *Ban Kala (or Gala)* | 28 villagers were consulted during the SIA in May 2017. This village is one of the three villages which uses the Beung Paphat wetlands extensively. Special attention was given to conducting small focus groups for poor families, women and youth. | High: Activities related to the daily life of the communities; project aims to support sustainable livelihoods. People expressed interest in learning more about peat and why it is important. | High: The villagers are already participating in the ADB BCC project and have formed a committee to manage their Village Development Fund (VDF). This could provide a mechanism for implementing and monitoring the project’s sustainable livelihood activities. | High:  *Potential positive:*  The villagers benefit from sustainable livelihood activities and realize the value of improved ecosystems.  *Potential negative:*  While current use of peatland seems sustainable, there is a small chance that the peatland survey will identify unsustainable practices which would need to be changed | Demonstration site for best management practices |
| *Ban Saming* | Initially selected as demonstration site, but then not included as they do not use Bung Naphat peatland | Low: Not selected as demonstration site. Does not use Bung Naphat peatland | Low: Only related to upscaling and awareness activities | Low: Awareness raising may induce changes of peatland use practices | Potential beneficiary of upscaling and awareness raising activities |
| *Ban Khontheat – includes two small villages* | Visited during PPG inception mission; ADB BCC project used to work here. Not selected as demonstration site. | Low | Low: Only related to awareness raising activities | Low: Awareness raising may induce changes of peatland use practices | Potential beneficiary of upscaling and awareness raising activities |
| *Tong Kalong village, Paksong District* | Area outside the Ramsar site, further North at higher elevation. Peat extraction occurs to serve as organic fertilizer for the abundant coffee plantations in this district. Visited during PPG inception mission and highlighted as potential demonstration site. Most land is privately owned. | Moderate: Not selected as demonstration site but may benefit from outreach and awareness raising | Low: Only related to awareness raising activities | Low: Awareness raising may induce changes of peatland use practices | Potential beneficiary of upscaling and awareness raising activities |
| Local CBO/NGOs (Lao PDR) | | | | | |
| *Lao Biodiversity Association (LBA)* | Environmental non-profit association | High: Interested in capacity building and biodiversity conservation | Moderate: Exchange of information and lessons learned | Low | Keep informed |
| *Lao Wildlife Conservation Association (LWCA)* | Conservation of species and key areas of biodiversity in Lao led by local professionals with experience in wildlife and habitat conservation | High: Interested in capacity building and engaging youth in conservation | Moderate: Exchange of information and lessons learned | Low | Keep informed |
| INGOs and international organizations (Lao PDR) | | | | | |
| *IUCN Lao PDR country office* | Past and ongoing projects in Beung Kiat Ngong | High: Continuation of previous conservation efforts | High: Support on the ground implementation | Moderate | Project support and direction |
| *WWF* | Past activities in Beung Kiat Ngong under ADB BCC project began in 2011. | Moderate: Aligns with previous development actions in the area | Moderate: Utilize lessons learned from previous projects | Moderate: Potential for coordination of future activities and ensure complementary actions | Keep informed |
| International donors & agencies (Lao PDR) | | | | | |
| *KfW (German development bank)* | *Lower Mekong Basin Wetlands Management and Conservation Project (MRWP) implemented in Beung Kiat Ngong; IUCN is involved; work on revising management plan of the site* | High: Alignment with MRWP project | High: Ability to influence the management plan | Moderate | Opportunities for collaboration, specifically with revising management plan of Beung Kiat Ngong |
| *Food and Agriculture Organization of the United Nations (FAO)* | *CAWA (Climate Adaptation in Wetlands Areas) project in Xe Champhone and Beung Kiat Ngong Ramsar site.* | High: Direct collaboration potential to guide activities and complement project strategy. | High: Lessons learned and collaborative planning | Moderate: Increased understanding of peatlands mapping at demonstration sites | Opportunities for collaboration; keep informed |
| German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) - German International Climate Initiative (IKI) | Through IUCN, BMUB is supporting Mekong WET, which is focused on ecosystem-based adaptation and mitigation within Ramsar sites in the Mekong Region. | High: One of the focal areas for Mekong WET is Beung Kiat Ngong, which has also been selected as a focal area for the peatlands project. As mitigation is one of the goals of Mekong WET, sustainable management of peatlands will be directly relevant. | High: Potential for high synergy with peatlands project including the updating of the BKN management plan to incorporate peatlands. | Moderate: Increased breadth of impact within site, as well as improved scalability of work | Co-financing for activities related to updating of BKN management plan |
| Research institutions & universities (Lao PDR) | | | | | |
| *National University of Laos (NUoL)* | Involved with some of the peatland surveys; member university of MWUN | Moderate: Survey collaboration and exchange of lessons learned | Moderate: Lessons learned from previous surveys | Moderate: Increased capacity | Could be involved in surveys |
| *Champasak University* | Member university of MWUN and located in Pakse | Moderate: Survey collaboration and exchange of lessons learned | Moderate: Lessons learned from previous surveys | Moderate: Increased capacity | Could be involved in surveys |
| Government agencies (Lao PDR) | | | | | |
| *Lao National Mekong Committee Secretariat, Ministry of Natural Resources and Environment (MoNRE)* | In charge of National Biodiversity Strategy and Action Plan (NBSAP); very involved in PPG inception mission as LNMCS was initially the focal point prior to that role being transferred to DEQP | High: The Project will help reach NBSAP goals | Moderate | Moderate: Increased capacity | Partner |
| *Department of Environmental Quality Promotion (DEQP), MoNRE* | Lead Executing Agency in Lao PDR; focal point for ASEAN Peatlands Management Strategy and ASEAN Strategy on Transboundary Haze Pollution; Ramsar Administrative Authority; involved in PPG inception mission | High: Peatlands falls under their mandate for environmental management in Lao PDR | High: Key department in the development, training and implementation of key activities | High: Increased capacity to manage peatlands | Lead Executing Agency in Lao PDR |
| *Department of Water Resources (DWR), MoNRE* | In charge of wetlands (except Ramsar sites); consulted during PPG inception mission | High: Interest in getting the comprehensive survey information to incorporate into their policies | Moderate | Moderate: Increased capacity | Keep informed of project activities |
| *Department of Planning and Cooperation (DPC), MoNRE* |  | Moderate | Moderate | Moderate | Keep informed |
| *Department of Land Planning and Development, MoNRE* | Responsible for land management; consulted during PPG inception mission | Moderate | Moderate | Moderate | Keep informed / advisory |
| *Pollution Control Department (PCD), MoNRE* | Responsible for preparing a National Pollution Control Strategy for 2016-2025 | Moderate: Peatlands as a component of the pollution control strategy | Moderate | Moderate | Keep informed / advisory |
| *Department of Forest Resource Management (*DFRM*), Ministry of Agriculture and Forestry (MAF)* | Integrated Management of Water and Fires; involved in PPG inception mission | High: Peatland fire management | Moderate: Support implementing activities and trainings | Moderate: Increased education/awareness, conservation efforts and knowledge mapping of peatlands for protection | Partner for training on fire management |
| *Department of Livestock and Fisheries (DLF), MAF* |  | Moderate: Potential synergies for livelihood development activities | Moderate: Advisory and informing of on the ground activities. | Moderate: Improved livelihoods and habitat conservation | Involve in activities related to livestock and fisheries |
| *National Committee for Wetland Management and Ramsar Convention* | High-level committee for Ramsar implementation in Lao PDR | High: Alignment with current Ramsar goals and activities in country | Medium: Strategic guidance to implement project activities | Moderate: Improved best practices information dissemination and awareness | Upscaling and advisory |
| *Lao Women’s Union* |  | High: Exchange perspectives and inform the implementation of the project | Moderate: Guiding project activities with regards to gender integration | Moderate | Involve in project activities |
| Provincial government (Lao PDR) | | | | | |
| *Provincial Office Natural Resources and Environment (PONRE)* | Champasak Province level office of MoNRE; key stakeholder consulted during PPG inception mission and SIA mission | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity | Partner |
| *Provincial Agriculture and Forestry Office (PAFO)* | Champasak Province level office of MAF; key stakeholder consulted during PPG inception mission | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity | Partner |
| *Provincial and District Land Management Offices (P&DLMO)* | Responsible for land use planning and land use concessions | Moderate: Monitor the work on the ground and land management | Moderate: Coordinate land mapping and conservation efforts | Moderate: Improved peatland land management plans and accurate mapping | Local partner |
| *Provincial Committee for Wetland Management and Ramsar Convention* | Representatives participated in PPG inception mission | High: Alignment with current Ramsar goals and activities in BKN | High: Provide guidance to peatland management and conservation efforts | Moderate | Local partner |
| *Lao Women’s Union at provincial and district levels* | Consulted during SIA mission and helped involve women in the SIA consultations | High: Support gender specific trainings and collaboration with women in the districts | Moderate: Monitor on the ground activities, guide strategic direction of the project. | Moderate to High: Improved livelihoods and capacity of sustainable ecotourism and agricultural practices | Local partner involved in provincial activities |
| *Xe Pian National Protected Area (NPA)* | Part of BKN Ramsar site is located inside Xe Pian NPA | High: Effort through the project could impact ecotourism and sustainable management of BKN | Moderate: Involve in management planning and ecotourism development | Moderate | Keep informed |
| Local government (Lao PDR) | | | | | |
| *District Office of Natural Resources and Environment (DONRE)* | Pathoumphone District level office of MoNRE; key stakeholder consulted during PPG inception and SIA mission | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity and increased knowledge sharing with local communities about peatland conservation. Improved information sharing (horizontal and vertical) related to cross sectoral issues. | Local partner |
| *District Agriculture and Forestry Office (DAFO)* | Pathoumphone District level office of MAF; key stakeholder consulted during PPG inception mission | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity and increased knowledge sharing with local communities about peatland conservation. Improved information sharing (horizontal and vertical) related to cross sectoral issues. | Local partner |
| *District Ramsar Field Management Team* | Per BKN management plan, the multi-sectoral team works at the site level to carry out field activities. Would need to be revived. | Moderate: Coordination of activities in BKN | Moderate: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Improved knowledge dissemination and capacity for provincial and district level capacity building | Local partner |
| Private Sector (Lao PDR) | | | | | |
| *Community Guesthouse in Ban Kiat Ngong and community-based guides/treks* | Organizes community-based treks and guided tours | Moderate: Interest in conservation of the site and ecotourism development | Moderate | Moderate | Keep informed |
| *Kingfisher Lodge* | Lao/Italian family operates guesthouse in Beung Kiat Ngong; offers activities as well as accommodation; visited during SIA mission. | Same as above | Same as above | Same as above | Same as above |
| *Green Discovery Laos* | National company with tours to Bolaven, Xe Pian and Dong Hua Sao | Same as above | Same as above | Same as above | Same as above |
| **D. Myanmar** | | | | | |
| Local villagers (Myanmar) | | | | | |
| *Taung Po Gyi village, near Inle Lake* | Taung Po Gyi – North and South villages (roughly 135 households), consultation held during PPG inception mission with roughly 100 villagers (about 40% women), including women’s focus groups. FREDA has worked in this community. Intha ethnic group. Proposed as demonstration site for several aspects of sustainable management of peatland ecosystems. | High: Activities directly relate to the daily life of the communities; project aims to support sustainable livelihoods | High: On the ground implementation and monitoring | High:  *Potential positive:* Improved livelihoods and ecosystems  *Potential negative:* Increased restrictions on water withdrawal from peat dome, although this would be community-driven as a means to prevent further degradation of the resource | Demonstration site for best management practices |
| *Let Maung Kway Village Tract* | In Inle Lake watershed, not directly in peatland area although upslope management practices in LMK impact downslope peatlands; visited during PPG inception mission. Proposed as demonstration site for agroforestry practices to reduce siltation of peatlands around Inle Lake.  - Farmers would be interested in projects, provided that income from projects secure their livelihoods  - Main issues discussed with villagers include: soil erosion to Inle Lake from both east and west sides of their hill farms, and their crop selection preferences.  - Also observed was peat extraction by a private company | Farmers are interested, provided that income from projects secures their livelihoods | Same as above | High:  *Potential positive:* Improved livelihoods and ecosystems  *Potential negative:* If not well implemented, loss of short-term income. Approaches will be tested before any voluntary adoption by farmers. | Demonstration site for best management practices |
| *Select communities that work with floating gardens, Inle Lake* | Five communities that are currently participating in a biofertilizer and bioinsecticide pilot with the Department of Agriculture:  (1) Kye za gon (14 farmers participating),  (2) Nga pe gyaung (9 farmers),  (3) Ke ta (9 farmers),  (4) Za yat gyi (10 farmers), and  (5) Pay bin in (12 farmers)  Proposed as demonstration site to continue best practices on reduced chemical use. Consultations held with farmers in Nga pe gyaung. | High: Activities directly relate to the daily life of the communities; project aims to support sustainable livelihoods | Same as above | High:  *Potential positive:* Improved livelihoods and ecosystems  *Potential negative:*  N/A; participation in pilot is voluntary | Demonstration site for best management practices |
| *Hopon South Site* | Visited during PPG and highlighted as potential demonstration site (issues around water withdrawal from community peat dome were observed) | Moderate: Not selected as demonstration site but may benefit from outreach and awareness raising | Moderate: May be Involved in outreach activities | Moderate:  *Potential positive:* Improved livelihoods and ecosystems through better protection/management  *Potential negative:* Increased awareness is expected to encourage them toreduce their water withdrawal from peat dome | Same as above |
| *Kun Nar Village, near Hopon* | Visited during PPG and highlighted as potential demonstration site (agricultural areas on peatland) | Same as above | Same as above | High:  *Potential positive:* Improved livelihoods and ecosystems  *Potential negative: N/A* | Same as above |
| *Heho Valley; Kalaw Township* | Visited during PPG and highlighted as potential agroforestry demonstration site | Moderate: Not selected as demonstration site but may benefit from outreach and awareness raising | Moderate: May be involved in outreach activities | Moderate:  *Potential positive:* Improved livelihoods and ecosystems through better protection/management  *Potential negative:* N/A | Potential beneficiary of upscaling and awareness raising activities |
| *Pway Hla Township* | Visited during PPG as potential site for agroforestry interventions to reduce siltation; not selected as demonstration site due to distance from peatland sites; potential outreach site; Pway Hla Community Forest | Same as above | Same as above | Same as above | Same as above |
| *Paung Pein Village* | Visited during PPG as potential site for agroforestry interventions to reduce siltation, near Let Maung Kway; not selected as demonstration site and may not drain directly into peatlands | Same as above | Same as above | Same as above | Same as above |
| Local CBO/NGOs (Myanmar) | | | | | |
| *Intha Literature and Culture Association* | Promote culture of Intha ethnic group | High: Ensure culturally appropriate project implementation | Moderate: Support on the ground implementation | Moderate | Potential partner |
| *Forest Resource Environment Development and Conservation Association (FREDA)* | Implementing partner under SEApeat project; IUCN Member; very involved in PPG inception mission | High: Continuation of previous efforts under SEApeat | High: Support on the ground implementation | Moderate | Executing partner |
| *Save the Inle Lake NGO* | Committed to improving ecosystems at Inle Lake; involved in the production of natural fertilizer and bio-insecticide at Inle Lake; consulted during PPG inception mission | High: Peatland management plan and activities could support ecotourism and livelihoods | Moderate: Key insights about Inlay Lake local livelihoods | Moderate: Improved best practices | Potential upscaling and awareness raising activities; technical expertise related to natural fertilizer and bio-insecticide production |
| *Myanmar Environment Rehabilitation-conservation Network (MERN)* | Local environmental network  comprising 20 environment-related NGOs in Myanmar created to collectively respond to the needs of rehabilitating degraded ecosystems; IUCN Member | Moderate: Peatland management plan and activities aligned with MERN goals | Moderate: Sharing of best practices | Moderate: Improved best practices | Potential beneficiary of upscaling and awareness raising activities |
| *Friends of Wildlife (FOW)* | Conservation NGO, long record of wildlife related projects; IUCN Member; not active in project area | High: Aligns with conservation goals | Moderate | Moderate: national peatland survey will offer important ecosystem data | Keep informed |
| *Biodiversity and Nature Conservation Association (BANCA)* | Environmental NGO; IUCN Member; not currently active in project area; consulted during PPG inception mission | High: Aligns with conservation goals | Moderate | Moderate: national peatland survey will offer important ecosystem data | Keep informed |
| *Myanmar Forest Association (MFA)* | Environmental NGO; not active in project area | High: Aligns with conservation goals | Moderate | Moderate: national peatland survey will offer important ecosystem data | Keep informed |
| *Ecosystem Conservation and Community Development Initiative (ECCDI)* | Environmental NGO | High: Aligns with conservation goals | Moderate | Moderate: national peatland survey will offer important ecosystem data | Keep informed |
| *Metta Foundation* | Major national NGO supporting rural development, but mainly in ethnic areas. Very interested and committed to forest restoration for community ecosystem service benefits. | High: Aligns with goals of organization | Moderate | Moderate | Potential partner for restoration in Inle watershed |
| INGOs and international organizations (Myanmar) | | | | | |
| *IUCN Myanmar country office* | Based in Nay Pyi Taw | High: Continuation of previous efforts on wetlands in Myanmar | High: Support on the ground implementation | Moderate | Project support and direction |
| *Wildlife Conservation Society (WCS)* | New York Zoo based conservation NGO. Extensive in country experience on PA development. Not active in Inle Lake. Consulted during PPG inception mission. | Moderate | Moderate: Sharing of best practices | Moderate | Keep informed |
| *UNESCO* | Inle Lake is a UNESCO designated Biosphere Reserve | High: Current initiative in Kalaw Watershed in coordination with FAO aligned to peatlands conservation | Moderate: Potential collaboration on activities and best practices | Moderate | Opportunities for collaboration; keep informed |
| *Myanmar Institute for Integrated Development (MIID)* | Work in Let Maung Kway village tract on reduced-chemical agriculture demonstration plots, connecting producers with markets. (Current project funded through Winrock International (USAID) and the EU ends in October 2017.) | High: Aligns with an integrated sustainable management plan in Inle Lake to support livelihoods to manage natural resources | Moderate: Potential collaboration on activities and best practices | Moderate | Insight into working with villagers at Let Maung Kway; potential beneficiary of awareness raising activities and upscaling |
| *International Centre for Integrated Mountain Development (ICIMOD)* | Regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries. Provided technical assistance to develop the Myanmar Ecotourism Policy and Management Strategy 2015-25. Involved in projects in Inle Lake, including the one above with MIID. | High: Aligns with an integrated sustainable management plan in Inle Lake to support livelihoods to manage natural resources | Moderate: Potential collaboration on activities and best practices | Moderate | Potential awareness raising activities and upscaling |
| *GIZ* | Climate change adaptation project in Taunggyi District around Inle Lake, focusing on mango and tea value chains (organic farming) | High: Potentially development of SMEs related to agroforestry products | Moderate | Moderate | Keep informed |
| International donors & agencies (Myanmar) | | | | | |
| *USAID* | Have funded some of MIID’s work in Inle Lake | Moderate | Moderate | N/A | Keep informed |
| *IFC/World Bank* | Give loans for hotel development around Inle Lake | Moderate: Aligns with previous development actions in the area | Moderate: Utilize lessons learned from previous projects | Low: Potential for coordination of future activities and ensure complementary actions | General awareness raising of donor community on importance of preserving peatlands |
| *United Nations Development Programme (UNDP)* | Phase II of Inle Lake project (UNDP/Norway) planned to start in June 2017; focus on strengthening Inle Lake governance (will not be working at ground level) | Moderate: Aligns with previous development actions in the area to reverse degradation | Moderate: Utilize lessons learned from current project | Low: Potential for coordination of future activities and ensure complementary actions | Opportunity for collaboration particularly in regard to strengthening the Committee on Inle Lake Sustainability |
| *Food and Agriculture Organization (FAO)* | In the past some research on fisheries in Inle Lake; GEF project on “Sustainable cropland and forest management in priority agro-ecosystems of Myanmar” (no overlap with peatlands project area); Farmer Field Schools | Moderate: Aligns with organization’s goals | Moderate: Utilize case studies from previous projects | Low | Keep informed |
| *Delegation of the European Union to Myanmar* | Have funded some of MIID’s work in Inle Lake | Moderate: Aligns with previous development actions in the area | Moderate: Utilize lessons learned from previous projects | Low | Keep informed |
| *Embassy of Norway* | Potential future project in Inle Lake in collaboration with UNDP (see above, Phase II of the Inle Lake project) | High: Aligns with current development actions in the area at Inle Lake | Moderate: Utilize lessons learned from UNDP project | Low | Keep informed, coordinate with any new projects |
| Research institutions & universities (Myanmar) | | | | | |
| *University of Forestry, Yezin, Myanmar* | Current research on soil conservation, watershed management and land restoration based in Nay Pyi Taw | Moderate: Survey collaboration and exchange of lessons learned | Moderate: Lessons learned from previous surveys | Moderate: Increased capacity | Could be involved in surveys |
| *Forest Research Institute (FRI)* | Coordinated with SEApeat activities in 2013 | High: Extension of peat assessments, trainings and knowledge sharing | Moderate | Moderate | Could be involved in surveys |
| Government agencies, national level (Myanmar) | | | | | |
| *Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MONREC; previously MOECAF)* | Lead Executing Agency in Myanmar; key stakeholder consulted during PPG inception mission | High: Peatlands falls under their mandate for environmental management in Myanmar | High: Key department in the development, training and implementation of key activities | High: Increased education/awareness, conservation efforts and knowledge mapping of peatlands for protection | Lead Executing Agency in Myanmar |
| *Nature and Wildlife Conservation Division, Forest Department (FD), MONREC* | In charge of nature and wildlife conservation, wetlands; key stakeholder consulted during PPG inception mission | High: The project will help reach conservation goals | High: Support on the ground implementation | Moderate: Increased capacity of knowledge and conservation efforts | Partner |
| *Watershed Management Division, FD, MONREC* | In charge of watershed management | Same as above | Same as above | Same as above | Partner |
| *Planning and Statistics Division, FD, MONREC* |  | Moderate | Moderate: Planning and dissemination | Moderate | Keep informed |
| *Department of Agriculture, Ministry of Agriculture and Irrigation (MOAI)* | In charge of agriculture and irrigation with designated office for resource utilization; key stakeholder consulted during PPG inception mission | High: The project will help reach department’s goals | High: Support on the ground implementation | Moderate: Increased capacity of sustainable agricultural practices in peatland areas | Partner |
| *Department of Irrigation, MOAI* | In charge of irrigation; key stakeholder consulted during PPG inception mission | High: Concerned with siltation rates in the Shan state around Inle Lake and soil quality affected by alkalinity. Also, in charge of waterway construction through peatlands. | High: Support on the ground implementation | Moderate: Increased capacity of knowledge and conservation efforts | Partner |
| *Directorate of Livestock Breeding, Ministry of Livestock, Fisheries and Rural Development (MLFRD)* | In charge of livestock | Moderate | Moderate | Low | Keep informed |
| *Department of Fishery, MLFRD* | In charge of fish consumption (specifically increasing fish consumption); key stakeholder consulted during PPG inception mission | High: Project activities will support important fish habitat | Moderate | Moderate | Partner |
| *Department of Rural Development, MLFRD* | In charge of sustainable rural development | High: The project can help develop sustainable rural livelihoods and cleaner water | Moderate | Moderate | Potential partner |
| *Department of Agriculture Land Management and Statistics, MLFRD* | In charge of land management | Moderate | Moderate | Low | Keep informed |
| *Directorate of Hotels and Tourism, Ministry of Hotels and Tourism* | Concerned with eco-tourism and the conservation of Inle Lake watershed | High: The project aligns with Inle ecotourism and conservation efforts | Moderate | Moderate | Potential partner |
| *General Administrative Department, Ministry of Home Affairs* | Representatives participated in stakeholder meetings at both national and state level | Moderate | Moderate | Low | Keep informed |
| *Fire Services Department, Ministry of Home Affairs* | In charge of mitigating fires | High: Project includes fire management activities | Moderate | Low | Partner |
| *UN-REDD Programme* | Reducing emissions resulting from deforestation | High: Coordination of important data sets to lower emissions | Moderate | Positive: Improved peatlands related data and sociological factors to improve REDD mission | Keep informed |
| Regional/state government agencies (Myanmar) | | | | | |
| *Shan State Region Minister / Government* | Responsible for all provincial level planning, policy and regulations. The minister met with the PPG team while they were in Shan State | High: Increased sustainability of economic and livelihood development | High: Support on the ground implementation | High: Increased capacity, peatland management plans and improved conservation | Leading implementation at the state/provincial level including facilitating and implementing site level action plan |
| *Shan State Forest Department* | Responsible for the management of forests at state level; involved in PPG field mission to Shan State | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity and improved peatland knowledge | Partner; lead executing agency at state level |
| *Shan State Environmental Conservation Department (ECD)* | Responsible for environmental conservation at state level | High: Aligns with management responsibilities; lead executing agency | High: Support on the ground implementation | Moderate | Partner |
| *Inle Lake Wildlife Sanctuary, Nature and Wildlife Conservation Division, FD* | Responsible for the conservation of biodiversity in and around Inle Lake; the Wildlife Sanctuary was designated as a ASEAN Heritage Park in 2003 and as a UNESCO Biosphere Reserve in 2015 | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity | Partner |
| *Administrative Committee (AC) for Inle Lake Sustainability (formerly the Inle Lake Authority)* | Cross-sectoral co-chairs including the Shan State Minister of Agriculture, Environment, and Tourism. They currently are following the Inle Lake 5-year action plan as a guiding framework. Meet regularly about once a month in Taunggyi.  AC members include:   1. Shan State Chief Minister 2. Minister for Natural Resources and Environmental Conservation 3. Minister for Agriculture and Livestock 4. Minister for Intha ethnic group 5. Minister for Transport 6. Minister for Planning 7. Minister for Finance 8. Minister for Kayan ethnic group 9. Regional Attorney General 10. Chairperson of Pa Aing Self-administered area 11. Chairperson of Danu Self-administered area 12. Shan MP (Member of Parliament) 13. Nyaung Shwe Constitution 1. MP 14. Nyaung Shwe Constitution 2. MP 15. Director of Shan General Administration Department 16. Director of Forest Department 17. Director of Environmental Conservation Department   Main responsibilities of the AC are:   * Organizing sub-committee to effectively implement Inle lake restoration and development works; * Drafting a law for Inle Lake sustainability and regional development, and presenting it to the Shan regional government; * Developing short, medium and long-term plans for Inle lake and its watershed area restoration; * Adopting policy, legislations, instructions for Inle lake and its ecosystem restoration, integration among governmental organizations and civil society associations, enhancing those organizations’ capacity; * Coordinating among organizations for ensuring their active participation in the plans | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | High: Supports their mission; increased capacity | Partner |
| *Inle Lake Trust Fund Management Committee* | Trust fund for implementation of environmental activities; committee in charge of mobilizing and administering resources | High: Aligns with Trust Fund goals | High: Support on the ground implementation | High: Supports their mission | Partner |
| *Forest Restoration and Rehabilitation Committee* | Chairperson is Director of Forest Department, Shan State | High: Aligns with committee Fund goals | Moderate: Support on the ground implementation | Moderate | Partner |
| *Inle Lake Siltation Control Committee* | Chairperson is Director for Irrigation and Water Utilization Department, Shan State | High: Aligns with committee goals | High: Support on the ground implementation | High: Supports their mission | Partner |
| *Information and News Release Committee* | Director for News and Information Department, Shan State | Moderate | Potentially high: Awareness raising and dissemination of knowledge | Moderate | Potential partner |
| *Department of Agriculture* | Planned project with IFAD on Sloping Agriculture Land Technology (SALT) in Inle Lake watershed | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity | Partner |
| *Irrigation Department* | Responsible for irrigation and soil quality; in charge of waterway construction through peatlands | High: Aligns with management responsibilities | High: Support execution of key activities and trainings. Knowledge sharing and guiding project direction. | Moderate: Increased capacity; guidance on waterway construction that limits impacts to peatlands | Partner |
| *Department of Small and Medium Enterprise Development (DSMED)* | Consulted during PPG inception mission relating to development of reduced chemical agricultural products at Inle Lake and establishing market | High: The project aligns with department goals of encouraging SME development | Moderate: Potentially support the development of SMEs related to agroforestry products | Moderate | Potential partner |
| *Myanmar Fruit, Flower and Vegetable Producers and Exporters Association (MFVP)* |  | High: Potentially development of SMEs related to agroforestry products | Moderate | Moderate | Potential partner |
| Local government (Myanmar) | | | | | |
| *Taunggyi District Office of Agriculture* | Responsible for the local management and planning of Taunggyi District | High: Aligns with management responsibilities | High: Support on the ground implementation | Moderate: Increased local capacity for sustainable management of peatlands | Local Partner |
| *Nyaung Shwe Township Office of Agriculture* | Responsible for the local management and planning of Nyaung Shwe Township; key stakeholder in reduced chemical agriculture pilots on Inle | High: Aligns with management responsibilities | High: Support on the ground implementation | Moderate: Increased local capacity for sustainable management of peatlands | Local Partner |

# Monitoring and Evaluation Plan

The table below provides a summary of the main M&E activities, responsible parties, timeframe, and budgeted costs. The project includes provision for a full-time Knowledge Management Specialist who will design the M&E strategy within the first quarter of the project implementation and oversee all M&E activities in accordance with IUCN evaluation policy and procedures, as adapted for GEF projects. The M&E strategy will be based on the targets, indicators, and sources of verification from the project results framework.

*Table 11: Monitoring and Evaluation Plan*

|  |  |  |  |
| --- | --- | --- | --- |
| M&E Activity | Frequency | Responsible | Budget (GEF funded) |
| Inception Workshop | Within two months of project start-up | RCU, supported by national PMUs and the IUCN Asia Regional Office | $8,400 for regional workshop (budgeted under Output 4.3, Activity 1) |
| Project Inception Report | Immediately after workshop | RCU, supported by national PMUs, and cleared by IUCN Asia Regional Office | Estimated at 10% of total CTA  salary or $40,000  Estimated at 50% of Knowledge Management Specialist salary or $48,000  IUCN costs covered  by agency fee  Travel for M&E $9,000 |
| Project day-to-day monitoring | Continually | RCU, participating executing partners and other relevant institutions |
| Supervision visits and rating of progress in Project Progress Reports and Project Implementation Review reports | Annual or as required | RCU, supported by national PMUs and the IUCN Asia Regional Office |
| Project Progress Reports | Six-monthly | RCU, supported by the national PMUs and other partners |
| Project Implementation Review report (including GEF tracking tools) | Annual | RCU, supported by the national PMUs. PIRs cleared and submitted by IUCN to the GEF Secretariat |
| Co-financing Reports | Annual | RCU |
| Technical Reports | As appropriate | RCU, supported by the national PMUs |
| Terminal Report | At least two months prior to project end | RCU, supported by national PMUs and the IUCN Asia Regional Office |
| Mid-Term Evaluation | At mid-point of project implementation | External Consultant, in consultation with the project team including the IUCN Asia Regional Office | Covered by agency fee |
| End-of-Project Evaluation | At the end of project implementation | External Consultant, in consultation with the project team including the IUCN Asia Regional Office | Covered by agency fee |

An independent Mid-Term Evaluation will be undertaken between years 2 and 3 of the project and an End-of-Project Evaluation will be undertaken in year 4. The Mid-Term Evaluation will review progress and effectiveness of implementation in terms of the following:

* **Relevance** – The extent to which the project is contributing to the project objective “to sustainably manage peatland ecosystems in Mekong countries and to conserve biodiversity and reduce GHG emissions”;
* **Effectiveness** – The extent to which the planned outputs are being achieved according to the indicators included in the project results framework;
* **Efficiency** – The extent to which project and co-funding resources are being used effectively;
* **Impact** – Recognising that it is often difficult to attribute cause and effect relationships, the evaluation will attempt to assess the changes in conditions of people and ecosystems that result from the project. At a minimum, the indicators from the project results framework will serve as the basis for this evaluation;
* **Sustainability** – The extent to which conditions in the target countries support replication (scaling up) and continuity of the sustainable management of peatland ecosystems in the region.

For the Mid-Term Evaluation, the RCU and the regional and national Project Steering Committees will consider the findings and recommendations of the evaluation and propose any adjustments to the project design and implementation strategy for the remaining duration of the project.

The End-of-Project Evaluation will follow a similar approach to that outlined above, with a broader remit to recommend lessons for the GEF, IUCN and other key stakeholders. The RCU will prepare the first draft of the Terms of Reference for the Mid-Term and End-of-Project evaluations in consultation with the regional Project Steering Committee and the IUCN Asia Regional Office.

# Project Financing and Budget

A detailed project budget is presented in Appendix 3. A summary of the budget is presented in the tables below:

*Table 12: Planned project budget categories - expenditure by year*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Categories of Expenditure** | **2018** | **2019** | **2020** | **2021** | **GEF Total (USD)** |
| *Activity Costs* | *285,769* | *495,475* | *336,775* | *232,525* | ***1,350,544*** |
| *Consultants* | *30,000* | *50,000* | *-* | *-* | ***80,000*** |
| *Partners* | *121,200* | *121,200* | *113,200* | *113,200* | ***468,800*** |
| *Technical Staff* | *176,050* | *258,600* | *258,600* | *176,050* | ***869,300*** |
| *Project Management Costs* | *37,980* | *33,480* | *33,480* | *33,480* | ***138,420*** |
| **Total** | **650,999** | **958,755** | **742,055** | **555,255** | **2,907,064** |

*Table 13: Planned project budget by component by year*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Components** | **2018** | **2019** | **2020** | **2021** | **GEF Total (USD)** |
| *Component 1* | *338,994* | *379,750* | *31,000* | *31,000* | ***780,744*** |
| *Component 2* | *89,100* | *208,450* | *263,150* | *182,700* | ***743,400*** |
| *Component 3* | *137,725* | *234,275* | *294,225* | *243,275* | ***909,500*** |
| *Component 4* | *47,200* | *102,800* | *120,200* | *64,800* | ***335,000*** |
| *Project Management Costs* | *37,980* | *33,480* | *33,480* | *33,480* | ***138,420*** |
| **Total** | **650,999** | **958,755** | **742,055** | **555,255** | **2,907,064** |

# Appendices

*List of appendices:*

* *Appendix 1: References*
* *Appendix 2: Project timetable and M&E work plan*
* *Appendix 3: Detailed project budget*
* *Appendix 4: Procurement plan*
* *Appendix 5: GEF tracking tools (5 Excel files)*
* *Appendix 6: Signed co-financing letters*
* *Appendix 7: GEF Operational Focal Point Endorsement Letters*
* *Appendix 8: Environmental and Social Management System (ESMS) Clearance:* [https://www.iucn.org/gef-iucn-partnership/about/iucn-and-gef](https://opendevelopmentcambodia.net/topics/extractive-industries/)
* *Appendix 9: Social Impact Assessment (SIA) report (*The report is also publicly accessible at: <https://www.iucn.org/sites/dev/files/gef_peatlands_sia_report_final.pdf>)
* *Appendix 10: General information on peat*

**Appendix 1: References**

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1. The estimate of fire-related emissions has been made with reference to the methodology specified in the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement) (IPCC 2013) which specifies the following calculation for emissions from peat fires: Amount of CO2 emissions in tonnes = Total area burned annually (ha) x Soil fuel consumption value (t dry matter/ha) x Emission factor for each gas (tCO2/t dry matter). However, in line with normal tier 3 methodology this can be modified with country or region-based information. Hence the calculation of solid fuel consumption value (global default) has been modified by using information on peatland carbon content from SE Asia and burn scar depth from observations at the project sites. [↑](#footnote-ref-1)
2. Estimated as 34 tC/ha (discounted by 25% as ecosystems around project sites have some mix of reed/sedge and forest) of average emissions from tropical forest degradation by fire is 46 tC/ha. Reference: Rafael B. de Andrade, Jennifer K. Balch, Amoreena L. Parsons, Dolors Armenteras, Rosa Maria Roman-Cuesta and Janette Bulkan (2017) Scenarios in tropical forest degradation: carbon stock trajectories for REDD+. Carbon Balance and Management. 2017 **12**:6. [↑](#footnote-ref-2)
3. Based on average mass of carbon in peatlands in the Mekong Delta of 11.37 tC/cm depth/ha based on Le Phat Quoi (2011), Estimation of carbon content and carbon dioxides release in peatlands in U Minh Region, Lower Mekong Delta, Vietnam. This is taken as a proxy for carbon content of the inland peats in Lao PDR and Myanmar. This will be updated following analyses of samples from the project sites during the project period. [↑](#footnote-ref-3)
4. Field observations in both sites have indicated that the depth of peat impacted by fires is relatively shallow estimated at 4cm/fire. This will be verified through further field observations during the project period. [↑](#footnote-ref-4)
5. Field observations in Lao PDR indicate peat mining depth of 2-3m. [↑](#footnote-ref-5)
6. Based on measurements at the project site in Cambodia described in TAING Porchhay, EANG Phallis, TANN Sotha & CHAKRABORTY Irina (2017) Carbon stock of peat soils in mangrove forest in Peam Krasaop Wildlife Sanctuary, Koh Kong Province, southwestern Cambodia. Cambodian Journal of Natural History, 2017 (1) 55–62. [↑](#footnote-ref-6)
7. This will be done in an inclusive, participatory process to avoid any negative impacts, particularly on women or vulnerable groups. In the event that access restrictions are required, mitigation measures to compensate livelihood losses will be developed and agreed upon. Elements of a Process Framework are provided in Appendix D of the Social Impact Assessment report to guide the development of an Action Plan to mitigate impacts from access restrictions. [↑](#footnote-ref-7)
8. This will be done in an inclusive, participatory process to avoid any negative impacts on vulnerable groups. In the event that any access restrictions are required, mitigation measures to compensate livelihood losses will be developed and agreed upon. Elements of a Process Framework are provided in Appendix D of the Social Impact Assessment report to guide the development of an Action Plan to mitigate impacts from access restrictions. [↑](#footnote-ref-8)