添付資料-1　各国の現地調査スケジュール

(1)　ラオス

月日	活動内容
6月3日(木)	ビエンチャン入り 11:00　JICA北村プロジェクトリーダーと面談（FSIP） 16:30　JICA事務所にてインセプションレポート説明、日程確認
6月4日(金)	08:30　水資源環境庁　官房に表敬及び面談 10:00　環境庁　環境局と面談及び資料収集 資料整理及び分析
6月5日(土)	資料整理
6月6日(日)	資料整理
6月7日(月)	13:30　農林省　森林局　森林資源保護課と面談及び資料収集 資料整理及び分析
6月8日(火)	08:30　IUCN-Laos事務所と面談、資料収集 資料整理及び分析
6月9日(水)	08:45　Lao National Mekong Committee、Department of Water Resources - WREA（水資源環境庁　ラオス・メコン委員会及び水資源局）と面談及び資料収集 13:10　UNDPと面談及び資料収集 14:10　UNDP-GEF Programme Officeと面談及び資料収集
6月10日(木)	09:10　Living Aquatic Resource Research Center（LARReC）（農林省　水資源生物研究所）と面談及び資料収集 13:30　農林省　森林検査局と面談及び資料収集 15:00　農林省　森林局　森林インベントリー・計画課にて情報収集
6月11日(金)	10:00　WWFと面談及び資料収集 13:30　農林省　家畜水産局　漁業課と面談及び資料収集 15:00　Forest Inventory & Planning Divisionにて資料収集 16:00　FRCD(-DoF-MAF）と協議（現地調査行程及びこれまでの調査結果考察）
6月12日(土)	資料整理
6月13日(日)	資料整理、現地調査準備
6月14日(月)	移動：ビエンチャン→ルアンナムタProvince 13:30　Nam-Ha NBCA management unit　（ナム・ハーNBCA管理ユニット長）に表敬及び面談 14:30　ルアンナムタ県農林局　局長に表敬及び面談 16:00　管理ユニット長と日程打合せ 17:00　同上、副局長（前　NBCA管理ユニット長）と面談
6月15日(火)	08:30　管理ユニット事務所訪問 09:00　現地視察　（エコツアー、ホームスティ受け入れ村訪問含む） 15:30　管理ユニット事務所にて面談及び資料収集 17:00　エコツアーAgent事務所にて資料収集
6月16日(水)	09:00　Provincial Department of Tourismにて面談及び資料収集 10:30　管理ユニットにて面談、資料収集 移動：ルアンナムタ→ビエンチャン
6月17日(木)	09:30　FRCD（森林資源保全課）にてニーズ及び今後必要な支援内容（概略）について協議 11:00　農林省　林業・森林開発基金にて面談及び資料収集 14:00　Department of Water Resource - WREAにて資料収集 資料整理、報告書作成
6月18日（金）	08:30　JICA事務所にて調査概要報告及び協議 17:30　DoWR（WREA）にてDirectorと面談 資料整理、報告書作成
6月19日(土)	資料整理、報告書作成
6月20日(日)	資料整理、報告書作成
6月21日(月)	08:30　TABI Project（The Agro-biodiversity Initiative)と面談及び資料収集（予定） 資料整理、報告書作成
6月22日(火)	午後：DoFに調査概要報告（予定）
6月23日(水)	午前：JICA事務所に調査概要書提出及び調査結果報告（予定） 午後：バンコクに向けて出発

添付資料-1　各国の現地調査スケジュール

(2)　カンボジア

月日	活動
5 月 24 日（月）	プノンペン着
5 月 25 日（火）	JICA 事務所への挨拶 自然保護局（NDNCP）下の国立公園局と面会・説明 森林局(FA) と面会・説明
5 月 26 日（水）	CBSF-II 専門家へのヒアリング NFP タスクフォース、FA の気象変動対策タスクフォースとの面会・協議
5 月 27 日（木）	コミュニティフォレストリー局(FA) との面会・協議 野生動物及び生物多様性局(FA) との面会・協議 野生動物局（NDNCP）との面会・協議 CBD 局（MOE）との面会・協議
5 月 28 日（金）	漁業局（FiA）との面会・協議 コミュニティフィッシャリー局（FiA）との面会・協議 村落保護地区開発局（NDNCP）との面会・協議
5 月 29 日（土）	資料整理
5 月 30 日（日）	資料整理
5 月 31 日（月）	GIS ユニット(FA) との面会・協議 WG-E&FD 及び関連 NGO とラウンドテーブル会議出席・協議
6 月 1 日（火）	UNFCCC 局（MOE）との面会・協議
6 月 2 日（水）	Conservation International との面会・協議
6 月 3 日（木）	モンドルキリへ移動 森林局 Cantonment（地方統括事務所）との面会・協議
6 月 4 日（金）	モンドルキリ県 WWF&WCF 調整事務所との面会・協議 Seima Protected Forest and Biodiversity Conservation Area の視察 ラッタナキリへ移動
6 月 5 日（土）	Virachey 国立公園管理事務所との面会・協議 プノンペンへ移動
6 月 6 日（日）	資料整理
6 月 7 日（月）	シムリアップへ移動 シムリアップ県漁業局との面会・協議 トンレサップ湖のフィッシュサンクチュアリー及び漁業区の視察
6 月 8 日（火）	報告書作成
6 月 9 日（水）	UNDP 支援のトンレサップ環境管理プロジェクトのプロジェクトダイレクターとの面会・協議 野生動物及び生物多様性局(FA)と協議
6 月 10 日（木）	自然保護総局（NDNCP）と協議・説明
6 月 11 日（金）	Tonle Sap Authority との面会・協議 漁業局と協議・説明
6 月 12 日（土）	報告書作成
6 月 13 日（日）	報告書作成
6 月 14 日（月）	森林局と協議・説明 関係機関（森林局、自然保護総局、漁業局）へ現地報告書の提出 JICA 事務所への報告及び報告書提出
6 月 15 日（火）	マニラへの移動

添付資料-1　各国の現地調査スケジュール

(3)　ベトナム

月日	活動内容
5月23日(日)	ハノイ入り
5月24日(月)	JICAハノイ事務所様　インセプションレポート説明・協議、日程確認 13:00 - 16:20 (JICA事務所にて)
5月25日(火)	MARD、MONREと面談 8:30 - 9:30 国際協力部 (ICD) -MARD 9:35 - 11:40 天然資源保全部 (Dep. of Nature Conservation : DNC) -森林局 (Directorate of Forestry : DoF) - MARD 14:00 - 16:00 生物多様性保全局 (Biodiversity Conservation Agency : BCA)-環境局 (Vietnam Environmental Administration : VEA) - MONRE
5月26日(水)	関係ドナー、NGOとの面談 10:00 - 10:45 世銀 (WB) 16:00 - 16:45 バードライフ (BLI)
5月27日(木)	関係NGOとの面談 9:00 - 10:00 WWF 午後：MARDにて資料収集
5月28日(金)	MARDと面談 8:30 DNC-MARD 14:00 IAEP-Department of Fishery- MARD, STE -MARD
5月29日(土)	資料整理
5月30日(日)	資料整理
5月31日(月)	提案概要をMONREと協議 14:00 BCA (MONR) 資料収集及び面談 16:00 CRES
6月1日(火)	関係ドナーのプロジェクト事務所と面談 10:00 GTZ 提案概要をMONREと協議 14:00: BCA 関係NGOと面談 16:00 IUCN
6月2日(水)	JICA事務所、MARD、MONREに報告書提出及び説明 12:00 MARD 15:00 MONRE 16:00 JICA Office, JICA expert (Mr. Matsuzawa)
6月3日(木)	ラオスへの移動

添付資料-1　各国の現地調査スケジュール

(4)　フィリピン

月日	活動内容
6月6日(日)	マニラ入り、JICAマニラ事務所　野吾氏と調査内容およびスケジュールに係る協議
6月7日(月)	DENR、DOTと面談 10:00 - 12:00　海外支援事業局（FASPO）-DENR 15:00 - 16:30　計画局-DOT
6月8日(火)	DENR、ADB、DAと面談 09:00 - 12:00 海外支援事業局（FASPO）-DENR 14:00 - 15:00 ｱｼﾞｱ開発銀行（ADB） 16:00 - 17:30 漁業局（BFAR）-DA
6月9日(水)	関係ドナーとの面談 09:00 - 11:00 GTZ 13:30 - 15:00 USAID 15:30 - 17:30　FAOおよびUNDP
6月10日(木)	DENR、関係NGOとの面談 10:00 - 12:00 WWF 15:30 - 18:30 生態系研究開発局(ERDB) -DENR
6月11日(金)	DENR、関係ドナーおよびNGOとの面談 09:00 - 10:00 世銀（WB） 11:00 - 13:00 Conservation International（CI） 13:15 - 14:00 環境管理局（EMB）-DENR 14:30 - 15:30 森林管理局（FMB）-DENR 16:30 - 18:30 保護区野生生物局（PAWB）-DENR
6月12日(土)	資料整理
6月13日(日)	資料整理
6月14日(月)	資料整理
6月15日(火)	DENR、関係NGOとの面談 10:00 - 12:00 Haribon Foundation 14:00 - 16:00 国立地図資源情報局（NAMRIA）-DENR 17:00 - 18:30 CI
6月16日(水)	DENRとの面談、実施可能事業に係る打合せ 14:00 - 16:30 FMB 16:40 - 17:30 FASPO
6月17日(木)	DENRとの面談、実施可能事業および現地訪問に係る打合せ 09:00 - 12:00 PAWB 13:00 - 14:00 DENR Director of Regional 7
6月18日（金）	Bohor県での現地視察 ・　マングローブの既存植林事業地およびポテンシャルサイトの訪問（Cortes、Malibojoc、Treasure island、Loom、Tubigon、Buena vista、Getaje） ・　NIPAS保護区への訪問（Lobok Watershed Forestry Reserves）
6月19日（土）	Bohor県での現地視察 ・　既存のFish Sanctuaryの視察　（Balikasag島）
6月20日（日）	レポート作成
6月21日（月）	DENRとの面談、提案事業に係る協議 10:00 - 11:00 PAWB BFARでの情報収集、レポート作成
6月22日（火）	JICA事務所との協議、DENR（FMB）、ACB、ADBとの協議
6月23日（水）	DOTとの協議
6月24日（木）	DENR（PAWB、FMB）へのレポート提出、現地調査（Verde Passage）
6月25日（金）	JICA事務所へレポート提出、調査報告
6月26日（土）	帰国

Field Survey Report for the Data Collection Survey on Biodiversity Conservation in Asian and African Regions (Lao PDR)

June 22, 2010
Data Collection Survey on Biodiversity Conservation
in Asian and African Regions

1. Introduction

1.1 Background of the Overall Survey

Mankind heavily depends on biodiversity in our lives. Nevertheless, it is reported that the biodiversity on earth is in a critical condition as over 40,000 species become extinct every year due to various human activities, such as deforestation, over hunting, water pollution and others. Efforts to conserve biodiversity have been reinforced internationally after the adoption of the Convention on Biodiversity (CBD) at the United Nations Conference of Environment and Development in 1992. The Government of Japan has also actively worked on the conservation of biodiversity since then as a country that ratified the convention. This year is the last year of the 2010 biodiversity target adopted by the Conference of the Parties (COP 6) held in the Netherlands in 2002. Furthermore, Japan will host the tenth meeting of the COP in October 2010 as the chair country and is expected to play an important role in leading the activities on biodiversity conservation not only domestically but also internationally.

The Japan International Cooperation Agency (JICA) has successfully implemented a number of cooperation projects/programs on biodiversity conservation. Because of its long and successful achievements, the international community expects JICA to make more contributions, towards COP 10, to the conservation of biodiversity in developing countries. In particular, the countries in Asian and African regions need further assistance in biodiversity conservation since there are many biodiversity hot spots and untouched natural forests still remaining in the regions.

Given this background, JICA was determined to conduct a survey to collect and analyze relevant information/data concerning biodiversity conservation and forestry-related measures against climate change, identifying the needs for future cooperation/assistance in the same subjects in the Asian and African regions.

1.2 Objectives of the Overall Survey

The main objective of the overall survey is to identify the needs for official development assistance in the fields of biodiversity conservation and forestry-related measures against climate changes in the Asian and African regions. Toward this end, the survey team aims to:

i) collect and analyze relevant data and information concerning biodiversity and forest conservation as well as forestry-related measures against climate change in the ODA recipient countries in Asian and African regions;
ii) establish a database using data and information collected;
iii) identify the needs for future cooperation in the conservation of biodiversity and mitigation of/adaptation to climate change;
iv) select eight countries in the regions, four in Asia and another four in Africa, for further examination of the possible cooperation that JICA might be able to implement; and
v) conceptualize a/ potential project/s in the fields of biodiversity conservation and mitigation/adaptation measures in the forestry sector against climate change.

1.3 Background of the Field Survey

1.3.1 Countries visited

As described in the objective of the overall survey, a total of eight counties among the 78 countries, which are strategically important for biodiversity conservation in the regions and in need of JICA's ODA assistance in the same subject, are to be selected for further examination of potential JICA' cooperation. Following initial desk study and discussions with JICA, the following eight countries were selected:

Asian regions: Philippines, Lao PDR, Cambodia, and Vietnam
African regions: Tunisia, Ethiopia, Uganda, and Botswana

1.3.2 Purpose of the Survey

The main aim of the field survey is to further examine the needs for ODA support in the field of biodiversity conservation and conceptualize a/ potential project/s that JICA might be able to work on in the future. Specifically, the following activities are to be carried out in the field survey.

- Discussion of work plan with JICA branch office and relevant government organisations
- Interviews with relevant organisations for data collection
- Discussions on needs for assistance in biodiversity conservation and forestry
- Examination of possible project potential.

1.4 Scope of the Work

1.4.1 Major Activities done by the Survey Team

A member of the study team (referred to as "the Undersigned") has carried out the following activities to fulfill his tasks during his stay in Cambodia.

- Collection and review of existing acts and regulations in the forestry, fisheries, and environmental sectors;
- Collection and review of existing policies, strategies and plans in the same sectors;
- Discussions with government offices and other organizations concerned with biodiversity conservation in the country;
- Field observation of the major ecosystems in the country and/or potential areas for future interventions under the JICA's cooperation; and
- Identification of the needs for future JICA's cooperation in the field of biodiversity conservation in consultation with the relevant government and non-government organizations.

1.4.2 Schedule of the Field Survey

The following table shows the work schedule of the Undersigned from May 24 to June 15, 2010.

Date	Activities
June 03 (Thu)	Arrival at Vientiane Meeting with JICA experts (FSIP) Meeting with JICA Laos office
June 04 (Fri)	Meeting with Cabinet Office – Water Resources and Environment Administration (WREA) Meeting with Department of Environment (DoE) – WREA
June 05 (Sat)	Data arrangement
June 06 (Sun)	Data arrangement
June 07 (Mon)	Meetings with Forest Resource Conservation Division (FRCD) (Department of Forestry (DoF) - MAF)
June 08 (Tue)	Meeting with IUCN-Laos
June 09 (Wed)	Meeting with Lao National Mekong Committee (LNMC), Department of Water Resources (DoWR) (WREA)

Date	Activities
	Meeting with UNDP and UNDP GEF Programme Office
June 10 (Thu)	Meeting with Living Aquatic Resource Research Center (LARReC) (MAF) Meeting with Department of Forest Inspection (MAF) Data collection at Forest Inventory and Planning Division (FIPD) (DoF - MAF)
June 11 (Fri))	Meeting with WWF Meeting with Fishery Division (FD) - Department of Livestock & Fishery (DLF) - MAF Data collection at (FIPD) (DoF - MAF) Meeting and discussion with FRCD(-DoF-MAF) (Field trip and progress of the survey and initial idea of necessary supports)
June 12 (Sat)	Data arrangement
June 13 (San)	Data arrangement
June 14 (Mon)	Trip to Luong Namtha Province Courtesy call and Meeting with Nam-Ha NBCA management unit Courtesy call and Meeting with Director of PAFO Meeting with Deputy Director of PAFO (previous Leader of Nam-Ha NBCA management unit)
June 15 (Tue)	Meeting with NBCA management unit Field survey at Nam-Ha NBCA (including visit to Nam-Ha Village where accepts home-stay of visitors) Data collection at eco-tourism agent
June 16 (Wed)	Meeting and discussion at Provincial Department of Tourism Meeting with NBCA management unit Trip to Vientiane
June 17 (Thu)	Meeting and discussion with FRCD (necessary supports) Meeting with Forestry and Forest Resource Development Fund Data collection at (DoE) (WREA)
June 18 (Fri)	Meeting and discussion with JICA Laos office (initial idea of necessary supports) Meeting with Director of (DoWR) (WREA)
June 19 (Sat)	Data arrangement, report writing
June 20 (Sun)	Report writing
June 21 (Fri)	Meeting with TABI project office ,(Report Writing)
June 22 (Sat)	Meeting with DoF and reporting
June 23 (Sun)	Meeting with JICA Laos office and reporting

Appendix 1 gives memos of some of the meetings that the Undersigned has had during the assigned period.

2. Policy Analysis

2.1 Review of Existing Legislation relating to the Target Sector (This part will be completed later)

The following acts and government regulations relevant to forest and biodiversity conservation in the county were reviewed in the field work.

a. Forestry Law (1996, 2005,2008)
b. Fisheries Law (2009)

Findings

The relevance of the above-mentioned legislative documents to biodiversity conservation was confirmed as summarized below.

Legilation	Summary or Relevance to biodiversity conservation
Forestry law 1996, 2005,2008	1. The Forestry Law determines basic principles, rules, and measures relative to the administration, maintenance, use of forestry resources and forest lands, promotion of rehabilitation, planting and propagation of forestry resources in the country in order to balance nature, make forests and forest lands a sustainable source of sustenance and used by the people, ensure the protection of water resources, preventing soil erosion, protecting flora, trees, aquaculture and wildlife and the environment, contributing to national socio-economic development for continually increasing wealth. 2. The Forestry Law composes of 7 parts, 10 Chapters and 75 Articles. The Law provides a broad framework for administering forests of individuals and organizations have the right to receive compensatory benefits. Those include the categorization of forest

Legislation	Summary or Relevance to biodiversity conservation
	type, administrative planning, assignment of forests and forest lands to local authorities for administration and use, management and obligations on prevention of forestry degradation and sustainable exploitation and uses of forests. These are supported by a number of regulations for use of forests and forest land, forest industries and forest derived products, planting and rehabilitating trees, including monitoring and evaluation, privileges for productive persons, measures against violators, and education and training measures on forests matters, etc.
Fishery Law Number: 03/SPS, 9 July 2009	･Fishery law defines the categories of fish and other aquatic species into Prohibited types, Conserved types and General Types. It sets out the system for Commercial Aquaculture production, defining the rights and obligations of the entrepreneurs. ･Fishery law defines The usage or exploitation of aquatic species as well as the preservation and development of fishery activities. It lays down framework for commercial fishery enterprises and conservation, defines the Prohibitions, Arbitration on issues and Fisheries management in various water sources and audit. It also defines Policy towards those who comply and violate the law and designates 13 July as the national day for release of fish.

2.2 Review of Existing Policies and Strategies relating to the Target Sector (This part will be completed later)

2.2.1 National Policies and Strategies

The following national policies and strategies were reviewed during the field survey.

a. The Seventh National Socio-Economic Development Plan (2011-2015)
c. Laos Millennium Development Goals

The key strategies related to biodiversity conservation in national policies and strategies are summarized below.

Source	Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
The Seventh National Socio-Economic Development Plan (2011-2015)	To ensure that socio-economic development is fully aligned with protection of the environment and sustainable development of water resources	· Preserve mineral sources (keep mineral source at more than 65% of total mineral wealth in the county), keep good condition of the soil, water, and help mitigate climate change. · Secure the country from losses due to natural disasters, such as controlling forest fires, drought, flood, erosion of rivers, and denuding of mountains. · To establish a land use system, protect and develop land and other natural resources in a sustainable, integrated and efficient manner in order to secure land for the Lao people for housing, subsistence and agricultural and non-agricultural commercial production, as part of economic development. · Systematically develop all aspects of agriculture and forestry in line with the policy guideline to adopting sustainable environment friendly agriculture and forestry production system.
Laos's Millennium Development Goals	Plantation and farm forestry	MDG #7:

2.2.2 Sector Strategies and Strategic Plans

In addition, the following strategic plans and programs of the relevant sectors (forestry, fisheries and environment sectors) were also reviewed.

a. First National Forestry Conference (1989)
b. Forestry Strategy 2020 (2005)
c. National Biodiversity Strategy and Acvtion Plan (2004)

d. Strategy on Climate Change of the Lao PDR (March 2010)

The following are key strategies/activities related to biodiversity conservation in the sector strategic plans/programs.

a. First National Forestry Conference

Policy Directions and Principles	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
1. to preserve, improve and increase the biological capacity of the present forest, especially by improving existing systems of management and protection; 2. to rationally use forests and its associated benefits, especially to improve economic benefits from forest resources; and 3. to link rehabilitation, preservation and expansion of forests with requirements for food, commodities and creation of permanent economic activities for upland populations.	(1) To maintain sustainability and ensure regeneration of natural resources including preservation of fish resources; (2) To strengthen national resource conservation, especially promoting the linkage of conservation to ecotourism; and (3) To take serious action against illegal encroachment of flooded forests, use of illegal fishing gears, and all anarchic activities preventing the conservation efforts by encouraging participation from relevant local and competent authorities.

b. Forestry Strategy 2020 (2005)

Policy Directions and Principles	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
1. To improve quality of existing forested area, which are about 70% of the total land area, by naturally regenerating up to 6 million ha and planting trees up to 500,000 ha in unstocked forest area as an integral part of a rural livelihood support system, encompassing stable water supplies and prevention of natural disasters. 2. To provide a sustainable flow of forest products for domestic consumption and to generate household income through sale and export, thus contributing to livelihood improvement, fiscal revenue and foreign exchange earnings whilst increasing direct and indirect employment. 3. To preserve the many species and unique habitats, which are, for different reasons, threatened both within the country and elsewhere. 4. To conserve environment including protection of soil, conservation of watershed and climate.	• By 2020, the Government of the Lao PDR envisage a sizeable, vigorous and robust forestry sector continuing in its role as one of the leading sectors advancing national socio-economic development, with the mandate to: • To generate timber and non-timber products at sustainable levels with village participation, under supervision and technical support from well staffed, well-trained local and national government units. Alongside the natural production forest system, large areas of commercial tree plantation in the hands of farmers, villagers and forestry companies will, through domestic wood and NTFP processors, provide products for both export and domestic use. • To benefit the whole society and other economic sectors including agriculture, industries, eco-tourism, hydro-power generation and transportation through provision of abundant water, clean air and places for recreation and nature observation as well as protecting soil and water in watershed areas. • To protect a rich flora and fauna, especially within well-demarcated NBCAs managed with active participation of villages within or adjacent to the NBCA based on the integrated conservation and development approach., . • To create an enabling environment in terms of legislative framework, technical guidance, basic investment and support services such as research, extension and training; provincial and district authorities apply these according to local conditions; villagers undertake actual management of allocated resources in a participatory manner; and private investors engaged in commercial activities mainly in the fields of tree/NTFP growing and processing through market mechanism. • To generate and sustain its technological basis through sound, efficient research and development programs disseminating results through well managed training centres; with high calibre scientific and technical staff, adequate facilities and equipment; and which can train, technicians, staff members and professionals both domestically and through association with overseas institutions. • To apply participatory planning for landscape level protection, management and restoration of forest resources and uses effective and appropriate monitoring systems for adaptive management. • To produce high quality service which will receive international recognition both on technical grounds and on the quality of its production, which is internationally certified and works in cordial alliance with high-quality support from international communities.

c. National Biodiversity Strategy and Action Plan (2004)

Policy Directions and Principles	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
1. Improve biodiversity data and fill data gaps through basic and applied research. 2. Improve biodiversity management and monitoring. 3. Plan and implement a biodiversity specific human resource development programme. 4. Increase public awareness of and encourage participation in the sustainable management of biodiversity. 5. Adjust national legislation and regulations related to biodiversity and harmonise them with Multilateral 6. Environmental Agreements (MEAs). 7. Secure the NBSAP's implementation. 8. Promote country needs driven international cooperation.	• To ensure sustainable forestry management and use of forests to improve the livelihoods of people living in rural areas and to contribute to economic growth; • To maintain the protected and biodiversity conservation area system effective; • To prevent, reduce and eradicate illegal encroachments and occupation of forest land by private individuals; • To enhance management efficiency of the reserved forests and ensure their appropriate promotion and development including ecotourism for employment generation and additional income for the people; and • c. To give more attention to the management of the protected areas.

d. Strategy on Climate Change of the Lao PDR (2010)

Policy Directions and Principles	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
1.Reinforce Sustainable Development Goals of the Lao PDR, including measures to achieve low-carbon economic growth; 2.Increase resilience of key sectors of the national economy and natural resources to climate change and its impacts; 3.Enhance cooperation, strong alliances and partnerships with national stakeholders and international partners to implement the national development goals; 4.Improve public awareness and understanding of various stakeholders about climate change, vulnerabilities and impacts, GHG emission sources and their relative contributions, and of how climate change will impact the country's economy, in order to increase stakeholder willingness to take actions.	• Climate Change Mainstreaming as Core Element: Ensure that climate change adaptation and mitigation are incorporated as a priority into the next social economic development plan (7th NSEDP), strategies, programmes and projects at all levels of government, institutions, businesses and local communities, within the framework of sustainable development; with social and economic development and poverty eradication as overriding priorities; • International Partnerships: Work with and seek support from international partners for capacity building, development and transfer of technology to support the implementation, adaptation and mitigation strategies and actions for low carbon growth; • Capacity Building as a Pressing Priority: Build national capacities in government agencies, technical institutions, private sector and local communities in developing and implementing climate change adaptation and mitigation for policies and actions; • Integrated Solutions and Co-Benefits: Develop and implement integrated adaptation and mitigation solutions that are low-cost, improve energy efficiency, promote cleaner production, build adaptation/mitigation synergy and generate economic, environmental and socioeconomic benefits; • Innovative Financial Instruments: Elaborate appropriate financial packages to ensure optimal implementation of adaptation and mitigation action plans; • Awareness, Education and Community Participation Leading the Way: Increase public awareness and understanding of climate change impacts and the need for mindset transformation towards adaptation and mitigation to mobilize communities to implement climate change adaptation and mitigation actions.

2.3 Review of the Documents submitted UN Conventions (UNFCCC and CBD)

Lao PDR ratified UNFCCC and CBD in 1996, and as of April 2009, the country has submitted several documents to the conventions. In order to know the priority activities and the current status as well as the progress of the work that the government has taken, the following documents submitted to the UN

conventions were reviewed.

- National Adaptation Programme of Action to Climate Change (NAPA) (2009)
- National Biodiversity Strategy and Action Plan (2004)
- Draft Fourth National Report to the Convention on Biological Diversity (it is still under preparation)

Some highlights of the findings are summarized below.

Documents	Priority activities relevant to Biodiversity Conservation
NAPA	- Continue the slash and burn eradication programme and permanent job creation program. - Strengthen capacity of village forestry volunteers in forest planting, caring and management techniques as well as the use of village forests. - Strengthen institutional and human resource capacities related to water and water resource management
NBSAP	- Improve biodiversity data - Improve biodiversity management and monitoring - Plan and implement a biodiversity specific human resource development programme - Increase public awareness of and encourage participation - Adjust national legislation and regulations - Environmental Agreements - Promote country needs driven international cooperation

Source: National Adaptation Programme of Action to Climate Change (NAPA) (2009), National Biodiversity Strategy and Action Plan (2004), Draft Fourth National Report to the Convention on Biological Diversity (2009)

3. Situation Analysis

3.1 Present Natural Conditions in Laos

3.1.1 General Geographical Characteristics of the Country

Lao PDR is located at the heart of the Indo-China Peninsula is surrounded by China, Vietnam, Cambodia, Thailand, and Myanmar. It has a land area of 236,800km^2 divided into 16 provinces, one municipality and one special region. There are 4 major geographical divisions as following Table.

Geographical Area	Region	Provinces
Upper Mekong	North	Luang Prabang, Phongsaly, Luang Namtha, Bokeo, Oudomxay, Xayabury
Upper Annamite	East	Huaphanh, Xieng Khuang, Bolilhamsay, Kammouane
Central Plains	Central	Vientiane Province & Municipality, Xaysomboon special zone
Lower Mekong Basin	South	Savannaket, Saravan, Champassak, Sekong, Attapu

Source: MAF & STE, 2003

Almost 80% of the country is mountainous area. More than 1/3 of the land area has a slope more than 30%, and 2/3 of the rest has slope ranging from more than 20 to 30% as Table below.

(Unit: 1,000ha)

Land Use Group	0 - 5	6 - 19	20 - 30	31 - 59	> 60	Total Area
Current Forest	2,679	651	3,795	3,072	971	11,168
Potential Forest	1,137	589	3,969	2,741	512	8,948
Other wooded areas	516	70	340	323	195	1,444
Permanent agricultural land	826	20	4	0	0	850
Other non-forest land	410	51	364	323	122	1,270
Total	5,568	1,381	8,472	6,459	1,800	23,680

Source: UNDP, 2001

3.1.2 Climates

Generally, the climatic pattern in Lao PDR has rainy season from May to September with an average annual rainfall of 1,256mm, and a maximum rainfall of about 1,990mm. The average of temperature

is 23.75℃. during the cold and dry season from December to February, the temperature can reach 5℃. Heavy fog is common in the morning.

3.2 Present Conditions of the Ecosystems in the Country

3.2.1 Terrestrial Ecosystems

(1) Forest covers

The Table below shows the forest areas in 1982, 1992 and 2002. The total forest cover in Lao PDR in 1982 was 91.8%. The latest total forest cover (in 2002) is 89.8%, the reducing ratio is not high. However, the current forest cover is reduced 5.7% during 1992 to 2002 and potential forest area increased 9.3% including un-stocked forest. It shows that the apparent decreasing of the forest cover is not high. But, the forest degradation is much high.

Land Use Group	Area			Difference	
Land Use and Vegetation Type	**1982**	**1992**	**2002**	**82 -> 92**	**92 -> 02**
1. Current Forest	***11,636.9***	***11,168.0***	***9,824.7***	***-468.9***	***-1,343.3***
Dry Dipterocarp	1,235.1	1,206.4	1,317.2	**-28.7**	110.8
Lower Dry Evergreen	88.6	85.5	56.0	**-3.1**	-29.5
Upper Dry Evergreen	1,105.8	1,061.0	1,387.9	**-44.8**	326.9
Lower Mixed Deciduous	893.0	864.5	881.0	**-28.5**	16.5
Upper Mixed Deciduous*	7,792.2	7,450.5	5,499.5	**-341.7**	**-1,951.0**
Gallery Forest	90.7	87.5	28.2	**-3.2**	**-59.3**
Coniferous	138.3	132.2	89.1	**-6.1**	**-43.1**
Mixed Coniferous and Broadleaved	293.2	280.4	525.8	**-12.8**	245.4
Wood Plantation*			40.0	0.0	40.0
Current Forest Cover	49.1	47.2	41.5	**-1.9**	**-5.7**
2. Potential Forest Area	***8,554.1***	***8,949.0***	***11,152.2***	***394.9***	***2,203.2***
Bamboo	1,457.0	1,531.9	539.0	74.9	-992.9
Unstocked*	6,499.7	6,791.4	10,096.3	291.7	3,304.9
Ray	597.4	625.7	516.9	28.3	-108.8
Potential Forest Cover	36.1	37.8	47.1	1.7	9.3
3. Other Wooded Area	***1,545.4***	***1,444.2***	***286.5***	***-101.2***	***-1,157.7***
Savannah/Open Woodlands	974.0	912.5	94.4	-61.5	-818.1
Heath, Scrub Forest	571.4	531.7	192.1	-39.7	-339.6
Wooded area Cover	6.5	6.1	1.2	**-0.4**	**-4.9**
Total Forest Area	**21,736.4**	**21,561.2**	**21,263.4**	**-175.2**	**-297.8**
Forest cover (%)	**91.8**	**91.1**	**89.8**	**-0.7**	**-1.3**

Source: DeF (Forest Inventory & Planning Division)

The current forest distribution is shown in the figure below.

Source: Forest Inventory and Planning Division, DoF

(3) Fauna in the Ecosystem

The Numbers of species in Lao PDR are reported in the draft 4th country report to CBD as follows:
[Reptiles and Amphibians]: no less than 150 to more than 200 reported species
[Birds]: no less than 700 species
[Bats]: over 90 species
[Large mammals]: over 100 species
[Fishes]: about 500 species

Number of endangered species

Taxonomic groups	I	II	III	Total
Mammal	44	15	6	65
Reptile	8	13	8	29
Bird	36	21	5	62
Fish	7	9	18	34
Amphibian	1	-	3	4
Arthropod	-	7	5	12

Source: List of Aquatic and wildlife species in Lao PDR (2009)
(Decree by PM, No.81, 13/08/2008, Endorsement of list of wildlife and aquatic animals classified in different categories)
Remarks: I: Protected species, II: Controlled species, III: General species

Three large mammals were recently discovered as follows:

- Small dark muntjac (*Muntiacus truongsonensis*)
- Giant muntjac (*Megamuntiacus (Muntiacus) vuquangensis*)
- Saola (*Pseudoryx nghetinhensi*)

(4) Flora in the Ecosystem

There are an estimated 8-11,000 species of flowering plants in Lao PDR (MAF & STEA, 2003). However, there is only a little documentation in this country. Nonetheless, the researches about NFTP (Non Timber Forest Product) were conducted by various institutions such as, Department of Biology, College of Fundamental Sciences, NAFRI, MAF, IUCN, CI, National University of Laos, and

Traditional Medicine Research Institute. The name, habitat and status of 23 NTFP species are listed in the draft 4th country report.

(5) Trends

A summary of the estimated inventory of the different species present is shown as below.

Species Group	Estimated Number of Species		
	Total	Endemic	Threatened
Plants	412	41	21
Mammals	282	1	46
Reptiles	150	0	11
Amphibians	89	2	5
Insects	597	7	0
Birds	700	0	23
Freshwater Fish	468	106	6
Some invertebrates	3	0	3
Total	2,701	157	115

Source: draft 4th Country Report

The National Environment Performance Assessment Report of 2009 emphasized that the rise in the share of globally threatened species from 0.54% in 1996 to 1.56 % in 2001. (Note: search accuracy in 1996 and 2004 is different). 28 of Lao PDR's current 81species are endemic to GMS. And Lao PDR's 1.6% of globally threatened species ranks lowest in the six GMS countries.

(6) Major Threats

The major threats of the ecosystem are described as follows:

Threats	Descriptions
Deforestation	Logging (legal and illegal) is main cause of deforestation. Shifting cultivation and logging concession is following. Food insecurity, unsustainable forest exploitation, energy needs, and poverty are reasons of shifting cultivation by the local communities.
Forest fire	Forest fires are usually caused by the clearing of uplands and forests. It is significant threat to biodiversity.
Over-harvesting & trading of wildlife	The local communities hunt the wildlife for staple source of protein for them. Recent increasing in trade are leading to major depletion of wildlife. Increasing domestic demand due to rapidly growing tourism industry. It is estimated that 10,000 mammals, 7,000 bird, and 4,000 reptiles are sold in/out of country markets.
Hydropower and road development	Hydropower development with dam construction leads flooded and inundates areas. The road developments are necessary for the rural areas. However, they lead access to protected areas and encourage encroachment, over-harvesting and trading wildlife and other forestry resources.
Pollution/poison	The excessive use of poison and other allied substances impact on wildlife and biodiversity resources.

3.2.2 Freshwater Ecosystem

(1) General

The annual rainfall in Lao PDR is between 1,300mm in the North and 3,000 – 3,700mm in the South. Water resources are used for agriculture, fisheries, hydropower, tourism, and municipal supply. Total water withdrawal was estimated at 1,000 million m3 in 1987, of which 82% was used for agriculture, 10% for industry, and 8% for domestic use.

The Mekong is the species-rich river with 1,300 fish species. In Indochina Peninsula, 87 families of fish have been identified. There are 30 commonly occurring fish species within the Lao section of the Mekong which migrate between at least 2 countries.

Fisheries in Lao PDR is important for economic. Most of rural people rely on aquatic biodiversity resources as their main source of protein. 71% of all farming households take fishing seasonally. Besides fish, small aquatic species including snails, frogs, clams, crustaceans, etc.

Man-made alternatives of water flow and discharge modifies aquatic habitats and affects fish and other aquatic organisms' migratory behaviour and spawning, water quality, and the availability of food resources for fish. Other major threats to aquatic ecosystems are; i) water pollution (domestic, industrial, aqua cultural and agricultural sectors), ii) over-harvesting, and iii) introducing exotic species.

(2) Aquatic resource conservation activity

The WWF Community Fisheries Project (ComFish) has been implementing activities to support community fisheries management. A key element to strengthen the food security of local livelihoods and aquatic biodiversity conservation is the establishment of fish conservation zones (FCZ). There are 80 FCZs in 5provonces in southern area (Champasak, Attapu, Xekong, Savannakhet, Khammouan), at Borikhamxai province (central area), and at Bokeo province (Northern area). WWF use several fund sources for this supports. WWF supports communities (villages) to establish rules, regulations for fishery management to balance the use and conservation. The locations of existing FCZs are shown in Annex.

Box 1: What is an FCZ?
There are many different words used to describe the process and outputs of fisheries co-management. Examples of terminology include fisheries co-management, community-based fisheries management, community fisheries, aquatic resources management, fish conservation zones. In this inventory map we choose to use the term fisheries co-management which expresses the collaborative relationship between communities and government. Many of these fisheries co-management arrangements are simply expressed as FCZ or Fish Conservation Zone by technical staff. This national map is a first effort to document the geographic scope of fisheries co-management in Lao PDR. Many of these FCZ are not only about establishing conservation zones for fish, but they also document how the community objectives define sustainable use of aquatic biodiversity and protection of important fish habitats. (Source: Map, Fisheries Co-Management in Lao PDR)

3.3 Biodiversity Conservation Activities

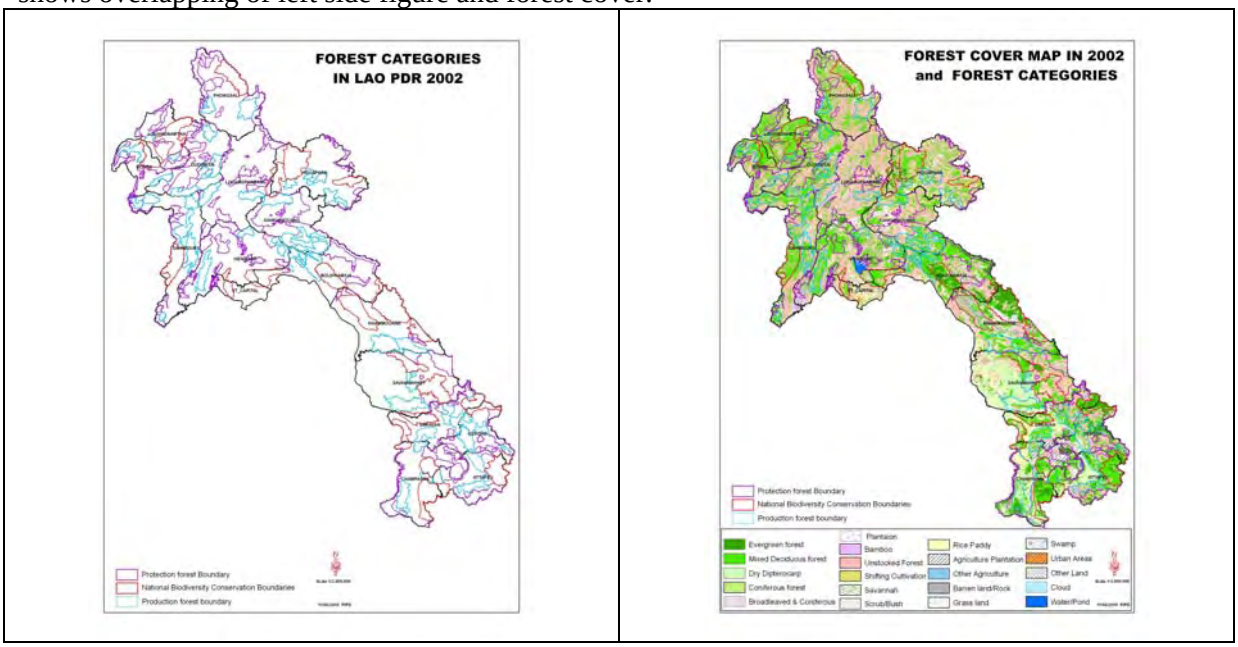
(1) Protected Areas and Forests in the Country

In Lao PDR, the system of National Protected Areas was legally established in 1993. The Nationa Biodiversity Conservation Areas (NBCAs) were officially set up through the Prim Minister's (PM) Decree 163, covering 18 areas. Three more areas and 2 corridor were added. The total number NBCAs is shown as below.

No.	Year Declare	Area Name	Area (ha) :(a)	Forest cover (%)	Forest Area (ha) :(b)	(b) / total land area (%)	(b) / total forest area (%)
1	1993	Nam Dene Dinh	222,000	82	182,040	0.769	1.850
2	1993	Nam Ha	222,400	75	166,800	0.704	1.695
3	1993	Nam Et	170,000	84	142,800	0.603	1.451
4	1993	Phou Loeuy	150,000	87	130,500	0.551	1.326
5	1993	Nam Xam	70,000	86	60,200	0.254	0.612
6	1993	Nam Phui	191,200	69	131,928	0.557	1.341
7	1993	Phou Pa Nang	70,000	60	42,000	0.177	0.427
8	1993	Phou Khao Khoay	200,000	78	156,000	0.659	1.585
9	1993	Nam Kading	169,000	89	150,410	0.635	1.529
10	1993	Phou Hin Poun	150,000	94	141,000	0.595	1.433
11	1993	Nakai Nam Theun	353,200	94	332,008	1.402	3.374
12	1993	Hin Nam No	82,000	90	73,800	0.312	0.750
13	1993	Phou Xang He	109,900	95	104,405	0.441	1.061
14	1993	Xe Bang Nouan	150,000	94	141,000	0.595	1.433
15	1993	Phou Xieng Thong	120,000	64	76,800	0.324	0.780
16	1993	Dong Hua Sao	110,000	89	97,900	0.413	0.995
17	1993	Dong Am Pham	200,000	84	168,000	0.709	1.707
18	1993	Xe Pian	240,000	94	225,600	0.953	2.293
19	1995	Xe Sap	133,500	93	124,155	0.524	1.262
20	1995	Dong Phou Vieng	197,000	98	193,060	0.815	1.962
21	2000	NNT-PHPCorridor	73,860	97	71,644	0.303	0.728
22	2000	NNT-HNN Corridor	3,310	96	3,178	0.013	0.032
23	2008	Nam Kan	136,000	NA	NA	NA	NA
Sutotal (NBCA)			3,523,370				
23	1995	Provincial Protection Forests	461,410	91	419,883	1.773	4.267
52	1995	District Protection Forests	55,713	82	45,685	0.193	0.464
Subtotal (P-D PF)			517,123				
57	1995	Provinces Conservation Forests	931,969	85	792,174	3.345	8.051
144	1995	District Conservation Forests	503,733	83	418,098	1.766	4.249
Subtotal (P-D CF)			1,435,702				
Total			**5,476,195**				

Source: MAF & STEA, 2003; Forest Resource Conservation Division-DoF-MAF & WREA, 2009, Biodiversity Country Report 2004

The locations of the 23 NCBAs are shown below. The left side figure shows categories of forest such as, i) production forest, ii) protection forest, and iii) protected forest (NBCA). The right side figure shows overlapping of left side figure and forest cover.



Source: Forest Inventory and Planning Division-DoF-MAF

The total area of NBCAs covers more than 3.5 million ha, which is equivalent to almost 15% of the country's land area, and to almost half of the forest area. Also, Provincial and District Conservation and protected areas established. The total protected area covers more almost 5.5 million ha, which is equivalent to more than 20% of the country's Land.

The FRCD – DoF – MAF has responsibility of the management of NBCA and wildlife resources, is planning and supervising the management implementation. The Provincial Agriculture and Forestry Office (PAFO) and the District Agriculture and Forestry Office (DAFO) have responsibility of implementation of NBCA management at the sites.
In a sense, the protected area management system in the country is considered effective for in-situ conservation on the legal documents. However, the ecosystems in the protected areas and forests have faced several threats and pressures due to weak law enforcement, lack of capacity of the government institutions, conflict with biodiversity conservation and other economic development, land encroachment, slash and burning, and illegal hunting by local communities as well as outsiders. From the view point of in-situ conservation, it is crucial to strengthen the protected area management system for biodiversity conservation in the country.

(2) Provincial/District Protection Forest, Conservation Forest

PAFO and DAFO set up those protected areas on the map. However, the legislation and site level demarcation of boundary have not been finished.

(5) Issues on NBCA Management

After a series of discussions with the relevant departments of DoF, PAFO, NBCA management unit of Nam-Ha NBCA as well as development partners, the Undersigned considers that the government needs to address the following issues for in-situ management.

- Demarcation of the boundaries of permanent forest estates
- Demarcation of the boundaries of protected areas
- Strengthening of the institutional capacities of the relevant department for protected area management (budget allocation, staff, and facilities)
- Establishment of self-financing mechanisms for sustainable conservation and protection of protected areas by the respective responsible bodies (e.g., REDD and PES)
- Establishment of self-financing mechanisms or livelihood development mechanisms for maintaining the management activities of NBCA management unit (e.g., Eco-tourism, any resource-based livelihood options, and REDD)
- Capacity development of the relevant government offices from the central to field level for protected area management
- Enhancement of awareness about the importance of biodiversity conservation among local communities
- Collection and preparation of the baseline data of biodiversity in the protected areas for the scientific-based management (adaptive management) and assistance in the valuation of the protected areas
- Preparation of management plans and zoning plans of some protected areas/forests
- Preparation of a multi-sectoral land use / spatial plan on a sub-national level so as to harmonize the economic development with biodiversity conservation.

4. Stakeholder Analysis

4.1 Government Organizations related to Biodiversity Conservation

The following government organizations play an important role in conservation of biodiversity and ecosystems in the country.

a. Department of Forestry (DoF) – MAF
   (Including NBCA management unit - Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO))
b. Department of Forestry Inspection – MAF
c. Department of Livestock & Fishery (DLF) – MAF
f. Department of Water Resources (DoWR) – WREA
g. Research institutes (NAFRI, LARReC) – MAF

4.1.1 Department of Forestry (DoF)

The focal point of CBD has been transferred from WREA to MAF on 9th June 2009 (Notice by Prim Minister's Office, document no: No.934/GS). The person in charge of the focal point of CBD in MAF is Mr. Khamphanh NANTHAVONG (Deputy Director General of DoF-MAF).

5. Needs Assessment

5.1 Related Government organizations

The focal point of CBD has been transferred from WREA to DoF. The major Government organizations are listed as follows:

a. Forest Resource Conservation Division (FRCD, under the Department of Forestry (DoF), MAF)
b. Fishery Division (FD, under the Department of Livestock & Fishery (DLF), MAF)
c. Department of Water Resources (DoWR, WREA)

5.2 Needs for Further Cooperation

As a result of quick reviews and analyses of the current policy and strategies, present situation of the sectors, and relevant stakeholders, the Undersigned considers that the following topics/aspects still need to be addressed for biodiversity conservation in the country.

Common Aspects:

- Need to enhance the capacities of the staff of the relevant departments (FRCD, FD, and DoWR) especially at the local level on conservation and management of ecosystems, conduct of researches, data management, ecotourism development, collaborative management with local community, and use of data collected in management.
- Need to review and develop the baseline data on biodiversity in each organization
- Need to examine, initiate and test a/ financial mechanism/s so that the management body can secure the necessary source of fund for its operation.

Terrestrial Ecosystems (NBCAs)

- Need to strengthen the institutional capacities of FRCD and NBCA management units for NBCA management.
- Need to strengthen the management and conservation of the NBCAs, especially those facing the lack of support from development partners.
- Need to coordinate with the neighboring countries for protection and management of trans-boundary biodiversity conservation.

- Need to assist conducting the researches related to biodiversity (identification of species, etc.)
- Need to assist campaign of biodiversity conservation, public awareness rising, livelihood improvement of local villagers.
- Needs to demarcate the boundaries of NBCAs.
- Need to assist development of NBCA management system (preparation of guidelines, manuals)
- Need to assist development of eco-tourism in/out of NBCAs

Freshwater Ecosystems

- Need of general supports on the policy/strategy preparation (for FD).
- Need to assist develop GIS database for watershed management (for DoWR-WREA)
- Need to assist for preparation of Master Plan (M/P) of the watershed management (for DoWR-WREA)
- Need to assist the baseline data survey, management plan preparation (guidelines, manuals development) (for FRCD)

6. Conceptualization of Potential Interventions

6.1 Basic Principles for Formulation of the Potential Interventions

The following principles are taken into account in the conceptualization of the potential interventions for biodiversity conservation.

a. The possible future cooperation should be in line with the existing government strategies and programs, such as: i) The Seventh National Socio-Economic Development Plan, ii) National Forestry Strategy, ii) National Biodiversity Strategy (NBSAP), iii) Strategy on Climate Change of the Lao PDR.
b. The possible future cooperation should avoid overlapping with the existing activities but should rather align with the existing activities.
c. The possible future cooperation should respect the government’s initiatives and focus on maximizing the efforts made by the government as well as development partners.
d. There is a need to consider the cooperation in the framework of the regional coordination with the neighboring countries, namely Cambodia and Vietnam.

6.2 Long-list of Potential Interventions

By analyzing the identified needs in accordance with the above-mentioned basic principles, the potential future interventions come up with as long-listed below.

For Common Aspects (conservation of terrestrial and aquatic ecosystems)

a. Assistance for strengthening of coordination/information sharing among the related organizations (development of coordination system/committee) (The focal point would be in FRCD)
   The major assistance activities are listed below:
   - The organizations are: FRCD, FD, DoWR, NAFRI and LARReC,
   - Confirmation of each organization’s responsibilities and functions, legislation, policies,

- Establishment of committee for coordination and information sharing,
- Confirmation and sharing the legislation and policy preparation by each organization. It is necessary to formulate those with consideration of biodiversity conservation.
- Information sharing of the donors/NGOs activities

For Conservation of Terrestrial Ecosystems

a. Capacity development of the staff of FRCD, especially the staff of the Management unit of FRCD, on the relevant knowledge and skills for NBCA management and biodiversity conservation. (Capacity development for supervising/control/enhancement on NBCA management system)

   The major assistance activities are listed below:

   - Capacity development aims to implementation of training on the staff of NBCA management units
   - Strengthen of capacity on training planning
   - Development of information system of NBCA database (coordination with existing forest inventory GIS system)
   - Strengthen of technical capacity on; i) rising villagers' awareness of biodiversity conservation, ii) participatory approach, iii) patrolling, iv) assistance on improvement of livelihood, v) zoning of NBCA, vi) development of eco-tourism, campaign of public awareness rising, financing system development, etc.

b. Capacity development of staff of NBCA management units (Province level), especially the Northern areas

   The major assistance activities are listed below:

   - Development of information system
   - Strengthen of implementation capacity on; i) rising villagers' awareness of biodiversity conservation, ii) participatory approach, iii) patrolling, iv) assistance on improvement of livelihood, v) zoning of NBCA, vi) development of eco-tourism, campaign of public awareness rising, financing system development, etc.

c. Assistance in the trans-boundary biodiversity conservation of the Lao PDR and the neighboring countries (Cambodia and Vietnam) by strengthening the protected area management in coordination with NGOs and facilitating the establishment of a platform for dialogue and information exchange among the stakeholders in the neighboring countries on trans-boundary biodiversity conservation

d. Assistance in development of financing system (strengthen of the existing Forest and Forestry Development Fund and allocation system)

   - Use of PES (Payment for Environment Service), REDD+
   - Use of eco-tourism

e. Assistance in strengthening the management system in Nam-Ha NBCA in Loungnamtha Province. (The results of the pilot project would be referred to the other NBCA management systems).

   The followings are major project components:

   - Development of boundaries on site, rising villagers' awareness of biodiversity conservation, participatory approach, patrolling, assistance on improvement of livelihood, zoning of NBCA (core area, buffer zone, and utility area), development/improvement of eco-tourism, campaign of public awareness rising, financing system development, etc.

For Conservation of Freshwater Ecosystems

a. Advisory assistance on policies/strategies or directions of biodiversity conservation on the aquatic resources for DF.
   - Capacity assessment of staff of FD
   - Assistance on the preparation of policies/strategies, etc. regard to aquatic resources biodiversity conservation
   - Assistance on development of basic database and facilities providing (including GIS system)
b. Assistance on the community basis management of the fisheries (Fish Conservation Zone management)
   WWF has been conducting this assistance in the Southern areas (at 5 Provinces; Champasak, Attapu, Xekong, Savannakhet, Khammouan), at Borikhamxai province in the central area, and at Bokeo province in the Northern area. It would be effective to expand the implementation areas to the central and northern areas.
c. Assistance for management activities on Ramsar Wetlands after certificate

Results of Prioritization of Long-listed Potential Interventions (Draft)

(1) Common aspects

Potential interventions	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Assistance for strengthening of coordination/information sharing among the related organizations	High	High	High	High	Medium	None	High

(2) Terrestrial

Potential interventions	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Capacity development of the staff of FRCD, especially the staff of the Management unit of FRCD, on the relevant knowledge and skills for NBCA management and biodiversity conservation	High	High	High	High	High	None	High
Capacity development of staff of NBCA management units (Province level), especially the Northern areas	High	High	High	High	High	None	High
Assistance in the trans-boundary biodiversity conservation of the Lao PDR and the neighboring countries (Cambodia and Vietnam)	High	High	Med.-High	High	High	Difficult to coordinate	High (but may need more assessment)
Assistance in development of financing system (strengthen of the existing Forest and Forestry Development Fund and allocation system)	High	High	High	High	High	Difficult to coordinate between Govt. organizations	High (but may need more assessment)
Assistance in strengthening the management system in Nam-Ha NBCA in Loungnamtha Province	High	High	Med.-High	Med	High	It may be difficult to maintain the sustainability	Medium

(2) Freshwater

Potential interventions	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Advisory assistance on policies/strategies or directions of biodiversity conservation on the aquatic resources for DF	High	High	High	High	Medium	None	High
Assistance on the community basis management of the fisheries (Fish Conservation Zone management)	High	High	Med.-High	Medium	High	Necessary collaboration with WWF	Medium
Assistance for management activities on Ramsar Wetlands after certificate	High	High	Med.-High	Low	High	After certificate	Low

7. Activities in the Following Month

The list of the possible programs/interventions given above is the initial ideas made by the Undersigned based on his field work between June 3 and June 23, 2010. Due to time constraints, he was not able to analyze all the data collected or fully exchange ideas/opinions on the possible interventions with all the stakeholders concerned during his stay. Hence, this field report should be regarded as the initial ideas based on the quick reviews of the relevant sectors.

In the in-country assignment in July 2010, the Undersigned will re-examine the initial ideas further reviewing the collected data and exchanging the ideas with relevant development partners working in the field of biodiversity conservation in Lao PDR as well as JICA HQ. In the end, the survey team will submit the final report with the proposed project ideas and recommendations to JICA HQ in the end of July 2010.

Hideki Imai

Data Collection Survey on Biodiversity Conservation
in Asian and African Regions

Meeting / Field Memo

No. of Memo: 1	
1. Topic/Purpose	Meeting with JICA experts (FSIP)
2. Participants	Mr. Kitamura, Ms Tobiishi, JICA study team (Imai)
3. Place	FSIP Office
4. Date & Time	3th June 2010, 11:00 – 12:030

5. Points of Discussion/Observation

The main points discussed are below:

(1) It was informed by DoF that the focal point of CBD convention has been transferred from WREA to DoF. But it is necessary to confirm to DoF.

(2) The interest of the WREA is on legal framework, and preparation of the laws/regulations. They would give over the implementation of CBD convention to DoF.

(3) The Department of Livestock & Fishery, MAF assumes a responsibility of the conservation of aquatic life and wildlife.

(4) WREA assumes a responsibility of the conservation of the wetlands.

(5) The data of the biodiversity conservation is very limited. In general, the natural forests areas are decreasing by the direct impact of plantation activities (rubber trees) by the foreign companies, plus, the large-scale infrastructure (hydropower, road, etc.) lead the decoupling or lost of the habitats.

(6) There are some possibilities of inventory of the biodiversity by WCS or IUCN. The information of inventory should be kept by the Forest Resource Conservation Division of DoF, MAF basically.

(7) The management of the National biodiversity Conservation Area (NBCA) is under control of the management unit in the PAHO, but there is no information of any universities' activities.

(8) The forest inventory has completed in 1992. 20 NBCAs have been established with cooperation of some of NGOs such as IUCN using the data.

(9) Most of the boundaries of NBCAs are not set up yet. The NBCA management units implement the determination of the boundaries, zoning (including buffer-zones), describing the laws to the villagers surrounding the areas, and patrol.

(10) There is not many eco-system expect wetlands outside of the NBCAs.

(11) The forest conservation has been conducting with introducing the Land-allocation system, developing the infrastructure on the allocated lands. These aim that the villagers change their shifting cultivation to permanent cultivation. And the forest would be conserved by the change. However, there are still problems such as, merits for the villagers, land registration and the tax on the registration.

Meeting / Field Memo

No. of Memo: 2	
1. Topic/Purpose	Meeting with the Cabinet Office of WREA
2. Participants	Mr. Virana (Deputy Director of Planning and Cooperation Division), and Survey Team (Imai and Thongsoune)
3. Place	WREA (Water Resource and Environment Administration) Office

4. Date & Time	4th June 2010, 08:30 – 09:30
5. Points of Discussion/Observation	

After having a brief explanation of the outlines of the studies by the team member, the Deputy Director showed his appreciation about the Data Collection Survey on Biodiversity Conservation in Asian and African Region. Some highlights of the discussions are summarized as follows:

(12) Focal point of Convention of Biodiversity Conservation (CBD) in Laos has been transferred from WERA to the Department of Forestry (DoF) – Ministry of Agriculture and Forestry (MAF) in 2009. The agreement or the Decision between WREA and DoF was prepared based on the recommendation of the Prime Minister (PM).

(13) For the climate change issue, WREA is the execute body, DoF is the implementation body in accordance with the order.

(14) There are 20 to 25 National Biodiversity Conservation Areas (NBCAs) in Laos. The finance is major problem for management operation.

(15) The major Donor's Projects are; i) The fishery management project in Si Phan Don (World Bank Fund). It is a joint project with Cambodia Government. The over-fishing in Cambodia would impact on the fishery in Laos. (Status: under preparation) ii) Mekong Trees Project in the Southern part of Laos (ADB) is a management project of NBCAs. (Status: under studying)

(16) The Other necessary agencies to be visited are listed as; i) the Department of Livestock and Fishery (DLF), ii) The natural Agricultural and Forestry Research Institute (NAFRI), and iii) The Living Aquatic Resource Research Center (LARReC). For the biodiversity conservation of the wetlands, aquatic resources are managed by DLF. NAFRI is the study institute and LARReC is the research institute of aquatic animals under NAFRI.

Meeting / Field Memo

No. of Memo: 3	
1. Topic/Purpose	Meeting with Director of Planning and Cooperation Division (PCD), Department of Environment (DoE), WREA
2. Participants	Mr. Lonkham ATSANAVONG (Director of PCD), and Survey Team (Imai and Thongsoune)
3. Place	Meeting room of DoE
4. Date & Time	4th June, 2010, 10:00 – 11:50
5. Points of Discussion/Observation	

Some highlights of the discussions are summarized as follows:

(1) The PM recommended the CBD focal point would be transferred from WREA to DoF, conformation of the focal point with the implement agency is better. The official letters related to this matter such as, NOTICE, Decision, and Minutes were collected.

(2) All documents which were prepared before the transfer have already been put in DoF. The Division is preparing the National Biodiversity Report (second version of Annual Report).

(3) The previous reports are; i) Biodiversity Country Report (AMF and STEA, 2003), ii) NATIONAL BIODIVERSITY STRATEGY TO 2020 AND ACTION PLAN TO 2010 (STEA, 2004), iii) Biodiversity Profile for Attapeu Province (STEA, 2003), iv) Biodiversity Profile for Luang Namtha

Province (STEA, 2003), v) 52 key reference documents that were used in drafting the Biodiversity Country Report, and vi) 138 supplementary background documents relating to biodiversity, resources management and planning.

(4) 2010 is the Biodiversity Year, some ceremonies are /implemented/planned by DoF supported by IUCN.

(5) There are 4 strategies; i) National Environmental Strategy (responsible by WERA), ii) National Biodiversity Strategy (responsible by DoF), iii) National Environmental Awareness Strategy (WREA), and iv) National Climate Change Strategy (WREA).

(6) The major international cooperation are, JICA, Sida, WB, and Finida. Sida is supporting central level (capacity development, policy development, information development, pollution control, and public awareness), the major supports from WB are pollution control, policy development and climate change.

6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 4	
1. Topic/Purpose	Meeting with Forest Resource Conservation Division, DoF, MAF
2. Participants	Mr. Bouaphanh Phanthavong (Director of FRCD), and Survey Team (Imai and Thongsoune)
3. Place	FRCD office
4. Date & Time	7th June 2010, 13:30 – 15:00

5. Points of Discussion/Observation

(1) There are three types of forest as, Production forest, Protection forest and Protected Forest (Conservation forest). The draft of Decree of protection forest establishment has been submitted to PM. Maps are under preparation.

(2) The function of FRCD is management of the Protected forest (National biodiversity Conservation Areas: NBCAs).

(3) Mr. Khamphanh Nanthavong (Deputy Director of DoF) is the focal point of CBD.

(4) The other sectors related to CBD are; NAFRI, LARReC, Dep. of Livestock & Fishery, Forest Development Fund, and REDD Office. The REDD office is equivalent to the other Divisions. It takes REDD issue only now, but will control the international conventions related to forest sector.

(5) The previous capacity assessment by Sida was conducted before 2000.

(6) IUCN conducted training needs assessment for biodiversity conservation 2 months ago and the data would be submitted to TABI project.

(7) The major supporting projects are; i) WCS project (GEF fund), ii) WB project (Provincial level), iii) WWF project (NBCA management project), and iv) ADB grant project (Biodiversity Corridor Initiative (BCI, under GMS program). BCI phase-I has been completed and Phase-II will start on 2011 to 2015. Its major targets are a) poverty alleviation, b) land use planning at village level, c) restoration of forest, d) capacity building, and e) PES mechanism development.

(8) The damage caused by the encroachments by villagers (shifting cultivations/rubber tree plantations) is significant especially in the Northern areas. Its was caused by mistake of land-allocation.

(9) The Northern areas are rich biodiversity areas (rare species are there), it is recommended to visit one of NBCAs in the Northern areas. D.G. also recommended Nam-Ha NBCA for site survey.

(10) The existing wildlife inventory surveys in NBCAs were conducted by some NGOs such as, IUCN, WCS, and WWF, but individually, and results (repots/database) are included into the list of wildlife.

6. Notes/Issues: The next meeting would be held later about the initial idea of future support.

A short meeting with Mr. Bouaphanh Phanthavong (Director of FRCD) was held on June 10th about trans-boundary issue.
- The previous meetings with Cambodia, Vietnam and Lao PDR were held three times about 2-3 years ago. They tried to make MoU. However, they did not reach and that became a dead issue. No documents were remained.

(Meeting)/ Field Memo

No. of Memo: 5	
1. Topic/Purpose	Meeting with IUCN Country Office
2. Participants	Mr. Karlsson (Environment Governance Coordinator), Mr. Tsechalicha (Protected Areas Coordinator), and Survey Team (Imai and Thongsoune)
3. Place	IUCN office
4. Date & Time	8th June 2010, 08:30 – 10:10

5. Points of Discussion/Observation

(1) IUCN's concerns on the legal framework development. The strategy of biodiversity conservation was established but Decrees/Regulations are not yet enough.

(2) The one of major risks on the biodiversity conservation is habitat disturbance, including i) encroachments, harvesting, hunting in/out of NBCAs. For this issue, community bases approach is being taking because, the people's livelihood surround the area is depending on the forest resources. IUCN is considering the zoning for development of harvest system.

(3) The other issues are i) limited capacity for management/monitoring, ii) limited coordination between several organizations such as, DoF, Tourism sector, transportation sector, and energy sector.

(4) The biodiversity conservation activities on wetlands are weaker than one on forest area. The hydro power development is one of the significant issues.

(5) FCZs (Fish Conservation zones) are formulated to control the amount of harvest. It is supported by local authority. The legal framework is set up at local level but not at National level.

(6) Two Ramsar Convention areas have been nominated. The comprehensive management will be required after they would be certificated.

(7) IUCN is considering the comprehensive management among related authorities such as, DoF, DoE and DoLF.

(8) The wildlife and aquatic law was endorsed on 2007, but English version is not available now.

(9) TABI (The Agro-Biodiversity & Livelihood Initiative) is a long term project funded Switzerland. The executing agency is Swedish consultant. The major components are; i) knowledge sharing system development such as legal framework, the good practices information, etc., ii) enhancement of governance/capacity (personal/institutional, national level). The counterpart is

FRCD (DoF).

(10) For the capacity building, IUCN is preparing the list of CBD governance project, and simple status survey is conducting.

(11) For the biodiversity conservation, coordination between communities and local authorities is important. Showing the value of biodiversity is important for the public awareness. It is responsibility of the Government to show the value of biodiversity compared to development activities such as, hydropower, mining, logging, rubber/eucalyptus plantation, etc.

(12) For the biodiversity conservation in Laos, lack of knowledge is significant. The botanical survey is required.

(13) ADB BCI (Biodiversity Corridor Initiative) aimed establishment of legal framework of corridor in western-southern areas. But, corridor is not accepted because of villagers' land issues.

(14) GEF fund is seeking potential financing system/mechanism including eco-tourism to develop public awareness. The three pilot sites are nominated in 3 NBCAs.

(15) Red list (endanger species) are 600, but population information is only a little. The current status is unclear.

6. Notes/Issues:

A meeting with TABI project office was held on 21st of June.

Meeting/ Field Memo

No. of Memo: 6	
1. Topic/Purpose	Meeting with Lao National Mekong Committee and Department of Water resource, WREA
2. Participants	Ms. Chongchith (Deputy Director of Dep. of water resource), Mr. Phokhin (Technical staff (LNMC), and Survey Team (Imai and Thongsoune)
3. Place	DoWR Office
4. Date & Time	9th June 2010, 08:45 – 11:00

5. Points of Discussion/Observation

(1) Lao National Mekong Committee (LNMC) and DoWR manage the water quantity and quality in land watershed except Mekong River.

(2) The biodiversity is one of the components of the management.

(3) LNMC and DoWR prepared the draft of Decree to develop and manage the river basin basis water resource management. The draft Decree has been submitted to PM.

(4) There are 105 river-basins included sub-basins.

(5) After the Decree will be approved by PM, they will prepare Mater Plan (M/P) of the management during the next 5 year plan.

(6) They plan to programs in M/P, and implement projects for each river basin.

6. Notes/Issues:

The meeting with Director of DoWR was held on 18th June.

Meeting / Field Memo

No. of Memo: 7	
1. Topic/Purpose	Meeting with UNDP-UNEP Lao
2. Participants	Mr. Bruno Cammaert, and Survey Team (Imai and Thongsoune)
3. Place	UNDP Office
4. Date & Time	9th June 2010, 13:10 – 14:30

5. Points of Discussion/Observation

The programs of UNDP are as below:

(1) Multilateral Environment Agreements (MEA) projects- related to the implementation of 3 conventions (CBD, CCD and CCL). UNDP assists the Government of Lao PDR in realizing its commitment to implement these conventions.

(2) NCSA (National Capacity Serve Assessment) is one of the activities related to above. It aims to developing the capacity to implement the conventions. Now a follow-up project for enhancement of the provincial/district level is on-going.

(3) Development project proposal on The Agro-biodiversity Initiative (TABI) co-financed by GEF and SDC with the purpose to conserve agro Biodiversity (local crop varieties) by application of diverse cropping system and diverse farming system, transformation of subsistence farming to commercial farming, providing incentives to local communities (farmers)for conserving and using diverse local crop varieties for farming system.

The major issues related to the biodiversity and the other donors' activities in Lao PDR:

(4) There are two main ecosystems which are of international significance: a) Mekong River system and b) Annamite Mountain Range. Annamite Mountain is very rich biodiversity area and the new species are discovered recently.

(5) Wetland system very important. The direct benefits are common but the indirect benefits are not. There is small project which comprehends indirect benefits of the wetlands and to feed back to the Government's policy

(6) Laos has requested 2 Ramsar wetland sites: one in Savannakhet and the other in the central part of the country.

(7) Small GEF grant program on conservation- community based small environment related projects implemented by Local NGOs. The individual project budget is up to us$ 50,000. This project started last year. The number of small scale climate change adaptation projects by the local NGOs is increasing.

(8) Relating to REDD, WB system was taken in this country and GTZ is implementing it.

(9) UNDP has interest on PLUP (Participatory Land Use Planning). That includes i) trust fund development, ii) forestry/wetland/fishery management and agriculture extension. The target unit is village or village group.

(10) UNDP supports the decentralization process promoting local community empowerment, accountability and transparency in government structure.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 8	
1. Topic/Purpose	Meeting with GEF Small Grants Programme – UNDP
2. Participants	Mr. Phetdavone, and Survey Team (Imai and Thongsoune)
3. Place	UNDP office
4. Date & Time	9th June 2010, 14:40 – 15:10
5. Points of Discussion/Observation	
(1) To reduce shifting cultivation, i) Villagers understand the importance of biodiversity, ii) patrol to find/take actions to the illegal encroachment from outside, and iii) preparation of community rules are necessary. (2) GEF small grant programme targets 72 poor districts and 47 poorest districts. The poorest districts are the first priority. (3) GEF small grant programme advertise small national NGOs to carry out the activities of (1) above. The grant for each NGO is 50,000 US$. The advertisement was announced twice per year, and finally 50 NGOs would be listed (short list).	
6. Notes/Issues:	

Meeting / Field Memo

No. of Memo: 9	
1. Topic/Purpose	Meeting with Living Aquatic Resources Research Center (LARReC)
2. Participants	Mr. Khamphet Roger (Deputy Director), Mr. Douangkham Singhaouvong (Head of Capture Fisheries Unit), Mrs. Khampheng Homsombath, and Survey Team (Imai and Thongsoune)
3. Place	Office of LARReC
4. Date & Time	10th June 2010, 9:50 – 10:40
5. Points of Discussion/Observation	
(1) The major research by LARReC are; i) Inventory of Wetland (1995) (by DoLF, supported by NAFRI), ii) Classification inventory of wetland/aquatic ecosystem (2003) (Mekong River Commission), and iii) Mekong Wetland Biodiversity Conservation and Sustainable Use Program (fund by UNDP and the Netherlands). The last one of above started on 2004 and stopped on 2006 (not completed). A part of that started 2010 in Attapeu Province (until 2011). (2) For the project (2010 – 2011) above, the function of LARReC is conducting case study of fishery based on management & wetland economic valuation. The function of DLF is review of Fishery Law. (3) The trans-boundary issue in Si Phan Don between Lao PDR and Cambodia was treated. But it was only economic cooperation, and species-wise cooperation (dolphin and giant cat fish). (4) Generally, the major treats on aquatic resources are i) pressure of human activities and fishery, and ii) natural change such as climate change. (5) About LARReC, there are some weakness such as, i) knowledge of fish biology, ii) human resource and survey equipments for fish disease, and iii) capacity of identification of species. (6) There is almost no data of aquatic monitoring, but the population is decreasing.	

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 10	
1. Topic/Purpose	Meeting with Department of Forest Inspections (DoF) (MAF)
2. Participants	Mr. W.B. (Bill) Adams, and Survey Team (Imai and Thongsoune)
3. Place	Office of DoFI
4. Date & Time	10th June 2010, 13:30 – 14:40
5. Points of Discussion/Observation	
(1) The function of this Department is to enforcement the laws (Forestry law and Aquatic and wildlife protection law). (2) The inspection action can be categorized as three types; i) regular basis inspection, ii) without notice inspection, and iii) complain basis inspection. (3) The most serious problem for forest inspection are illegal encroachments such as, i) illegal timber cutting in outside of the permission area of a power plant/mining project, ii) illegal timber cutting by villagers under control of a company. (4) The capacity of the inspection departments of PAFO/DAFO is limited. It is caused by limited finance mainly. (5) The army also shares the responsibility to protection forest. They have wildlife rangers who are under PAFO. (6) The own use of the forest by the villagers is not serious. However, in case of commercial use the amount of harvesting gets increase rapidly. (7) The advisor of the department is preparing the 5 year plan. There are records of illegal actions.	
6. Notes/Issues: The advisor provided the authority's mandate, organization structure, and issues the department keeps.	

Meeting / Field Memo

No. of Memo: 11	
1. Topic/Purpose	Meeting with Forest Inventory and Planning Division (FIPD) (DoF, MAF)
2. Participants	Mr. Khamma Homsisavath (Director of GIS Section), and Survey Team (Imai and Thongsoune)
3. Place	Office of FIPD
4. Date & Time	10th June 2010, 15:00 – 13:40
5. Points of Discussion/Observation	
(1) GIS system development is supported by Sida mainly in this section. (2) There are three categories of forest as i) NBCAs, ii) Production forest, and iii) Protection forest. The function of the protection forest is to protect properties (villages, cultivation areas from natural disasters). (3) The decree of the protection forest function is under preparation. The map and data of those three types of the forest have been completed almost. The minimum unit of the data base is district.	

(4) This division has 5 units (Administration, Database, GIS, Botanical, and Inventory). There are 36 permanent staff and 51 contract basis staff.

(5) The skills of the staff members are supported by Asian Air Survey Company by OJT. However, it is not enough. The new cooperation with JICA will start on Sep. this year. It is planned for 3 years and aims to develop capacity for GIS and remote sensing technique.

6. Notes/Issues:
The forest Inventory data would be provided later.

(Meeting) / Field Memo

No. of Memo: 12	
1. Topic/Purpose	Meeting with the WWF Laos (Greater Mekong Programme)
2. Participants	Mr. Roland Eve (Country Director) and Survey Team (Imai and Thongsoune)
3. Place	WWF Laos Office
4. Date & Time	11th June 2010, 10:15 – 12:00

5. Points of Discussion/Observation

The major contents of discussions are as below:

(1) The management of wetlands is under Department of Fishery (DoF, MAF). WWF has conducted a project on Tha Luang Marsh to solve a water pollution issue with DoF.

(2) The world-wise issues of WWF are conservation of Tiger, Elephant, and Irrawaddy dolphin.

The major activities of WWF-Laos

(3) WWF is supporting Lao Government on requesting for Ramsar convention. Tow Ramsar candidates (Xe Champhone Wetlands, Beung Kiat Ngong Wetlands) are now final stage of registration.

(4) WWF is supporting FCZ (Fish Conservation Zone) activity. FCZ is an aquatic resources management system aiming the sustainable use of aquatic resources. The unit of management is community. The provincial level legislation has been finished and now the national level legislation is under preparation. WWF has conducting FCZ projects at 5 provinces in southern area (Champasak, Attapu, Xekong, Savannakhet, and Khammouan), at Borikhamxai province in the central area, and at Bokeo province in the northern area.

(5) WWF would like to expand the FCZ areas to the central/northern areas from the southern area. It is planned to introduce the good practices in the southern area to the other areas, it may be easy to understand the effectiveness of FCZ to the communities' people. The budgets of FCZ projects are from German and WWF's original fund, but it is limited and can not expand yet.

(6) The key species of the biodiversity are; Gibbon (monkey), elephant, Irrawaddy dolphin, giant cat fishe, tiger, and antelope. The cooperation with Cambodia is necessary for the conservation of Irrawaddy dolphin. The provincial level agreement between Lao PDR and Cambodia for the conservation of Irrawaddy dolphin is under preparation.

(7) WWF is supporting the activities of BCI (Biodiversity Corridor Initiative) at Xe Pian NBCA and the other areas near it. BCI is the initiative by ADB. During the phase-I of the project, the corridor between some NBCAs in the southern area has been set up. The second phase is under preparation.

(8) WWF supported the financing system development using eco-tourism under BCI project. There are natural resources and potential needs for it, therefore, the system was going well. It is expected that the same system would be effective at the other NBCAs.

(9) WWF supports the FSC (Forest Stewardship Council) at the production forests as one of the climate change adaptation measures.

(10) PES (Payment for Environmental Service), REDD+, and Carbon Credit are expected as the tools for the financial system of the sustainable biodiversity conservation system. As one of examples, PES of hydro power at Nkai-Namtha is now the final stage.

Coordination with JICA

In accordance It is expected to make partnership between WWF-Japan and JICA first, and the collaboration between JICA and WWF-Laos would become realization.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 13	
1. Topic/Purpose	Meeting with the Fishery Division (FD) of Department of Livestock & Fisheries (DLF), MAF
2. Participants	Mr. Bounthong SAPHAKDY (Director of Division) and Survey Team (Imai and Thongsoune)
3. Place	FD Office
4. Date & Time	11th June 2010, 13:35 – 15:00

5. Points of Discussion/Observation

The major contents of discussions are as below:

(1) Discussion regards to the management of aquatic resources between DLF and DoF has done on 2008. The agreement between 2 parties clarified that the responsibility has been moved from DoF to DLF. (0645 DLF/A/ADM 09 April 2009: only Lao version).

(2) The Fishery law has been legislated in 2009.

(3) The preparation of the strategy for wetland for fishery including action plan and program has started in 2006, but it is in the initial preparation stage. FD has responsibility to formulate policies/strategies regard to aquatic resources. However, the capacities of the staff members of the division are limited and not enough. Therefore, they could not progress the formulating the strategy yet.

(4) The director of the division told that he has no idea/capacity for biodiversity field. He has been probing in the dark.

(5) The previous JICA technical assistances were for aquaculture.

(6) There were significant impacts by the flood in 2008/2009. FAO is supporting the flood emergency.

(7) DLF has taken several supports from the donors, but there are only limited supports of Biodiversity field such as the fishery co-management project by WWF (FCZ).

6. Notes/Issues:

(Meeting)/ Field Memo

No. of Memo: 14	
1. Topic/Purpose	Meeting with the Provincial Agriculture and Forestry Office (PAFO) – Luang Namtha Province
2. Participants	Mr. Khamleck Xaydala (Director of Agriculture & Forestry Department, Luang Namtha Provicne), Mr. Chanthong (C/P of FRCD of DoF) and Survey Team (Imai and Thongsoune)
3. Place	PAFO Office
4. Date & Time	14th June 2010, 14:35 – 15:30

5. Points of Discussion/Observation

After having a brief explanation of the outlines of the studies by the team member, the Director showed his appreciation about the Data Collection Survey on Biodiversity Conservation in Asian and African Region. Some highlights of the discussions are summarized as follows:

(1) There are 11 sectors in PAFO as follows; Administration, Planning, Cooperation, Livestock, Forestry, Irrigation, Extension, Inspection, Forestry inspection, NBCA management, and Rice seed center.

(2) The rice seed center has been assistance from JICA since August 2006. It is planned to finish on Jully of 2011. The project is RISED (Rice Seed Multiplication Project) and the project focal point is NAFES in Vientiane.

(3) Forest Resource Conservation Division of DoF – MAF prepares plans/strategies/programs and ask to implementation to PAFO. PAFO facilitates the implementation of them.

6. Notes/Issues:

(Meeting)/ Field Memo

No. of Memo: 15	
1. Topic/Purpose	Meeting with the Provincial Agriculture and Forestry Office (PAFO) – Luang Namtha Province
2. Participants	Mr. Phimkeo THAMLASINE (Deputy Director of Agriculture & Forestry Department, Luang Namtha Provicne) , Mr. Chanthong (C/P of FRCD of DoF) and Survey Team (Imai and Thongsoune)
3. Place	PAFO Office
4. Date & Time	14th June 2010, 17:00 – 18:40

5. Points of Discussion/Observation

Mr. Phimkeo was previous head of NBCA management unit. He explained the activities of NBCA management unit during assistance by the WSC which was taken 10 years ago (1995 to 2000). Also current situation of NBCA and issues were described.

(1) The main components of the project were; 1) wildlife survey (inventory), 2) delineation of NBCA on the map and confirmation of the boundary at the site, 3) social economy survey, 4) zoning, 5) land for land allocation to villages, 6) patrol & monitoring, 7) awareness campaign, and 8) livelihood improvement.

(2) Most of the project results were included into the M/P of the management of NBCA which was prepared in 2000. The NBCA management unit is reviewing the M/P and finalizing currently.

(3) At the end of the WSC project, there was a technical task force which responsibility was to finalize the

M/P. DoF was also included in the task force. The draft of M/P was sent to DoF at the time. However, the activities of the task force was become dead issue.

(4) In 2009, the NBCA management unit was re-organized as same level to the other department. Then, the review of M/P started to be reviewed.

(5) In accordance with his explanation, the problems since 2000 can be revealed as below:

1) Increasing the areas of shifting cultivation. The main reason is population increasing and migration.

The transition of the population in Luong Namtha Province was provided by PAFO. It shows recent 5 year population. The increased population during recent 10 year is about 33,663 of which 23% of the population in 2010.the population in the province has been increasing 2.1 – 2.4% a year.

Year	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total population	(person)	129,084	132,311	135,538	138,765	141,992	145,310	148,797	152,285	155,772	159,260
Increasing	(person)		3,227	3,227	3,227	3,227	3,318	3,487	3,488	3,487	3,488
Ratio of increasig	(%)		2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2

2) Over hunting/harvesting forest resources and NTFP (Non timber forest product). The reasons are; i) lack of knowledge of the sustainable use, ii) commercial use.

3) Increasing of timber use by communities, army, and other agencies.

4) Conflict between livestock & wildlife. The livestock grazing is increasing and damages of them by wildlife (tigers/elephants) are increasing too.

5) Limited capacity of management unit. The staff members are 9 now, previously it was 4.

6) Limited resource (budget). It limits the activities of the staff members.

(6) There is a system of land-forest land allocation. The concession of land use. The Forest Law prescribes; i) concession of the land less than 150 ha is approved by Province and ii) concession of the land more than 150 ha is approved by the central Government. It is not allowed to use land-forest land allocation in NBCA (basically).

(7) Many legislations have been done, but the implementation has not been carried out, because the limited budget & capacity. The implementation of legal issues should be carried out if the budget could be enough. Especially, the management unit would like to rise the public awareness at villages.

(8) The regular budget source is based on the provincial budget which includes administrative fee and salaries. There is another budget resource by the Forest Development Fund under DoF, which is under control of the committee. The vice Minister of MAF is a char-man of the committee.

(9) The northern edge of NBCA abuts to the boundary between China. The China side is also set up as protected area.

(10) The collaboration with the tourism authority and NBCA has been taken since 2000. There are some tourism resources (Asian Heritage and nature) in Luang Namthe province (ethnic tourism, trekking and canoe). The tourists can enter to NBCA areas for canoe tour, trekking tour and home stay tour at a village. The collaboration was taken by the province level activity only, but there is more space to develop that such as maintenance of eco-system. But, the activities out of NBCA such as, accommodations, boats, advertisements, are under responsibilities of the Department of tourism.

6. Notes/Issues:

The meeting with the department of tourism was held on 16th June.

Meeting / Field Memo

No. of Memo: 16	
1. Topic/Purpose	Field check at Nam Ha NBCA
2. Participants	4 staff members of NBCA management unit, Mr. Chanthong (C/P of FRCD of DoF) and Survey Team (Imai and Thongsoune)
3. Place	Nam Ha NBCA
4. Date & Time	15th June 2010, 9:00 – 15:30

5. Points of Discussion/Observation

The survey team visited Nam Ha NBCA along the national road (R3) and a village where they accept some tourists (for home stay). The village has received some lessons of biodiversity conservation by the management unit. The major findings at the site are as below:

(1) There is a sign board of NBCA area, which was prepared by WCS project (in 2000). The board was made in Vientiane and brought from there, because in this province preparation of the board was not possible at that time.

(2) The NBCA area is classified as i) core zone, ii) buffer zone, and iii) utility zone. A lot of rice fields, rubber tree plantations could be seen along the roads. The 500m to 800m wide from the national road are allowed to cultivate by the villagers. Additionally, any cultivation in NBCA is not allowed in principle. But, it can be allowed and managed by the unit. The management unit considers that; it is better to concentrate the cultivation areas along the national road instead of spreading the cultivation areas in the mountainous area.

(3) There are also illegal cultivations out of the utility zone in NBCA too. Some villages along the road were established by some small villages which were existed in the mountain area. They migrated and came together to the area near the road. They also got land-forest land allocation and use the cultivation area near the village.

(4) The river are in the upper stream from the canoe tour course is under control by the community. It limits fishing seasonally.

Interview at Nam Ha Village: (they accept the tourists who have home stay in the village). The village leader is Mr. Chanthong.

(5) There are 118 houses and 132 households in the village. The village moved from the other district in 1975. The whole village moved at that time. They are SANTAO tribe who is called as Middle range tribe.

(6) The campaign of biodiversity conservation is taken once a year. It started in 2005. NBCA management unit has explained the necessity of biodiversity conservation to the head, sometime with villagers. They explain and discuss the rules of cultivation, fishing, etc. The villagers join to the patrol of the NBCA. No international organization has taken any action in this village.

(7) The head of village told the motivation of the biodiversity conservation as below:

- It can not be deny that conserving the biodiversity leads decreasing income, but there are some advantages,

- Keeping forest in good condition leads rich water resource and NTFPs,
- Conservation provides sustainable profit from the nature,
- There may be some people not to keep the rules of conservation. But the number is not much,
- If any people break the rules, it should be reported to NBCA management unit. They would take legal actions.

(8) A committee makes some decisions. It is composed by 7 core persons (one head of village, one deputy, and the other members). It takes meeting with villagers or sometimes inform.

With regards to acceptation of the tourists and their home stay in village.

(9) There is no guest house here. The tourists stay at the normal houses and have food, beds, and hospitality. Each house takes turns for acceptation of home stay.

(10) The income by the service of home stay is 15,000 kip per night. It is paid to the household who provide the service. 5,000 kip is paid for trail use for the village committee. This payment system is good for the households who have a big house. However, the households who have only small house do not have chance to have income. In addition, the head of village have accepted the tourists 4 times since 2008.

(11) The head thinks as follows; i) Increasing the number of tourists can provide much income to the village, ii) Keeping the biodiversity leads increasing the tourists, therefore, iii) Biodiversity conservation is necessary and important for the village.

(12) The head also gets information about hand crafts selling to the tourists at the other villages. He would like to introduce the skills to the village.

The head showed his opinions/requests; 1) Biodiversity conservation is still challenge for the village, 2) therefore, would like to have some supports such as, i) income generating alternatives, ii) awareness campaign, iii) technical supports for farming productivity.

6. Notes/Issues:

Meeting/ Field Memo

No. of Memo: 17	
1. Topic/Purpose	Meeting with the Provincial Tourism Department of PAFO – Luang Namtha Province
2. Participants	Mr. Sengchanh PASEUTSACK (Deputy Director of the department), one staff, the head of NBCA management unit, Mr. Chanthong (C/P of FRCD of DoF) and Survey Team (Imai and Thongsoune)
3. Place	Provincial Tourism Department office
4. Date & Time	16th June 2010, 9:30 – 11:00

5. Points of Discussion/Observation

After having a brief explanation of the outlines of the studies by the team member, the Director showed his appreciation about the Data Collection Survey on Biodiversity Conservation in Asian and African Region. Some highlights of the discussions are summarized as follows:

(1) The department provides a short trekking trail around the boundary (not deep into the forest). The tourists enjoy the forest/view/nature in NBCA. Basically, the province has responsibility for biodiversity conservation in NBCA.

(2) The department wants to increase the areas for trekking in the NBCA.

(3) The villages along the national road (R3) were allocated from their places in the forests long time ago.

(4) The management unit and the department of tourism provide enough information about biodiversity in NBCA. Therefore, the tourists can understand the protection system of the nature in NBCA.

(5) Most of the tourists come from EU or USA. Their purpose of visit is trekking in NBCA.

(6) The department has considered the new trekking routes which is longer than the existing routes. It provides one night stay trekking in the mountain.

(7) Many agencies would like to request for the bird watching facilities in the forest area. The national authority (FRCD of DoF) has responsibility of approval for big facility and the province approves the establishment of the temporary and small facilities only.

(8) 131 villages join to the canoe tours in the province, of which 25 villages in NBCA join. The number of villages which provide home stay service is 52 in the province.

(9) The department and villages make an agreement regard to the acceptation of the tourists. The villages provide the services (accommodations, porters, food, etc.). The villages also responsible to keep biodiversity/the condition of the tour places clean.

(10) There are tow systems of eco-tourism here; i) by the department and ii) by some tour agencies. The cash flow of the system i) above is explained as follows. The department receives 100% of payment first. The department pays 5% of them to the guides, 8% to the village who provide home stay services, and 12% to NBCA management unit.

(11) The department took needs assessment to the tourists. They requested longer stay in the forest. Therefore, the department would like to set up some tourist facilities for rest/orientation around a place about 5 minutes walk from the national road (R3).

(12) The several organizations (PAFO, Department of tourism, police, department of information, villages, and district authorities and sometimes other provincial departments) discuss the decision of setting up of the small facilities in NBCA.

(13) The EIA (environmental impact assessment) has not been conducted before, because the EIA law was legislated recently.

6. Notes/Issues:

Meeting/ Field Memo

No. of Memo: 18	
1. Topic/Purpose	Meeting with Nam Ha NBCA management unit of PAFO – Luang Namtha Province
2. Participants	Head of the management unit, some staff members of the unit, Mr. Chanthong (C/P of FRCD of DoF) and Survey Team (Imai and Thongsoune)
3. Place	NBCA management unit office
4. Date & Time	15th June 2010, on the way to the site, 16th June 11:00 – 12:00

5. Points of Discussion/Observation

(15th June) On the way to the site and after site visit, short discussions were held between the head of the management unit and the survey team as follows;

(1) The major activities of the unit are; i) demarcation of the boundary, ii) public awareness campaign, and iii) collaboration with the department of tourism.

(2) 16 pegs have been installed among the boundary. However, any information could not be provided, because the responsible person was out of town.

(3) The campaign includes explanation of legislation and distribution of the posters to the villages by DAFO staff members.

(4) The Forest Development Fund has allocated additional budget for the management unit; 132 million kip in 2009 and 131 million kip in 2010.

(5) The unit has responsibility to prepare the annual report of their activities. However, they prepared it in 2009 only during these 5 years. The annual report could not be provided to the team, because they could not find it in the office.

(6) The management office keeps only a few documents, because the unit has moved from the Forest department office recently.

Most of the previous members have been moved to other areas. Their knowledge/skills/information are also have been moved with them. Mostly no information remains in the unit.

(16th June)

(7) The regular patrol is carried out twice a month. The patrol team is composed by one PAFO staff and one DAFO staff. In the case of report of incidents by villagers, three villagers join to the patrol usually.

(8) The management unit is composed as i) head, ii) three staff members for patrol at the sites, iii) other (desk work only). One of the iii) above has responsibility for rising the villagers' awareness of biodiversity. He plans dispatch of the unit members to the villages for extension of biodiversity.

(9) 15 villages and 310 villagers have received lectures of biodiversity conservation by the unit. There are 7 villages remaining.

(10) The incidents include illegal hunting, usage of gun (to kill wildlife), forest fire, and cutting trees. In the incident case, DAFO has responsibility of investigation and PAFO staff members join it. Then, they report the incident to the department of forestry inspection.

(11) The manuals/guidelines for taking actions against such incidents above should be prepared before. However, the documents could not be found. The unit does not keep them.

(12) During the biodiversity conservation campaign, the unit explains related legislation, law, and regulations which should be kept by the villagers.

6. Notes/Issues:

Meeting/ Field Memo

No. of Memo: 19	
1. Topic/Purpose	Meeting with Forest Resource Conservation Division of DoF – MAF
2. Participants	Mr. Bouaphanh Phanthavong (Director of FRCD), and Survey Team (Imai and Thongsoune)
3. Place	FRCD office
4. Date & Time	17th June 2010, 09:30 – 11:00
5. Points of Discussion/Observation	
The survey team briefly reported the results of site visit. (1) Mr. Bouaphanh explained the system in NBCA as follows; any facilities (roads, infrastructures,	

villages) can not be allowed in NBCA in principle. However, in case of national or Indochina regional issues or avoiding the shifting cultivation by the villagers they can be allowed.

The survey team explained the initial idea of the necessary further supports. The followings are the opinions of Mr. Bouaphanh.

(2) (Supports for preparation of updating of NBSA): The draft of the 4th National Report was prepared with supporting by IUCN-Laos. WREA has responsibility to submit it to CBD office. After official submission of the report, FRCD should start to prepare the 5 year action plan for CBD. It was confirmed that the IUCN would support DoF to prepare the action plan (6 June).

(3) (Capacity development of related officials): FRCD (Central level) has responsibilities related to management of NBCAs such as, i) preparation of manuals/guidelines, ii) legal documents preparation, iii) supervising and enhancement of management unit's activities. One of iii) activities is training of the NBCAs' management units' staff members. NBCA management unit of FRCD take the training to the provincial staff members. The staff number of the unit is 6. However, FRCD does not have concrete training plan, because limited budget. Usually, they make a plan when the budget is fixed.

(4) FRCD would like to have supports of capacity development for training skills to the both staff members of central level (NBCA management unit of FRCD) and site level (NBCAs management units).

(5) (Supports on preparation of platform for the trans-boundary issue among Laos, Cambodia and Vietnam): The meeting among those countries has held twice and MoU was prepared. But it became a deal issue.

(6) (Financial system development): There is a fund, Forest Resources and Forest Development Fund" in DoF. The fund could become one of tools for this issue.

6. Notes/Issues:

Meeting/ Field Memo

No. of Memo: 20	
1. Topic/Purpose	Meeting with Department of Water Resources (DoWR) – WREA
2. Participants	Mr. Phonechaleun NONTHAXAY (Director General) , Mr. Oudomsack PHILAVONG (Assistant Director General), and Survey Team (Imai)
3. Place	Office of DoWR
4. Date & Time	18th June 2010, 17:30 – 18:10

5. Points of Discussion/Observation

The "draft National Water Resources Strategy and Action Plan for the 2011 to 2015" was prepared by the department. The strategy includes the action plan (2011 to 2015) with timeframe and leading agencies. However, the director general answered the action plans are prepared without guarantee of budgets. Therefore, those action plans do not have reality. The following points are explanations of the director general of the department.

(1) The priority of the issues of the department are; i) flood/drought control (the first priority), ii) livelihood (the second priority), and iii) ecosystem (the third priority). Actually, the department aims to management of water quantity and quality as the first priority issue.

(2) The department would like to develop an early warning system for flood/drought. The drought is

serious in Lao PDR. (3) The water law was prepared in 1996 but it is complicated for the implementation. Therefore, it is being reviewed this year and will be revised next year. ADB is assisting and would assist those.
6. Notes/Issues:

Meeting/ Field Memo

No. of Memo: 21	
1. Topic/Purpose	Meeting with the project office of TABI (The Agro-Biodiversity Initiative)
2. Participants	Ms. Frida Arounsavath, Mr. Pheng Souvanthong (National Coordinator), and Survey Team (Imai and Thongsoune)
3. Place	Office of TABI
4. Date & Time	21st June 2010, 08:30 – 09:25
5. Points of Discussion/Observation	
After having a brief explanation of the outlines of the studies by the team member, Ms. Frida showed her appreciation about the Data Collection Survey on Biodiversity Conservation in Asian and African Region. Some highlights of the discussions are summarized as follows: (1) Capacity development for the implementation of biodiversity conservation is necessary. There is a difference between the strategy and implementation, because each actor plays without concern on the other actors. (2) The coordination between the actors is necessary and they aim development of the information sharing system which would be necessary for the coordination. Also, it is required to clarify the roles/responsibility of each organization. (3) The targets of the capacity development are MAF, WREA, and NRMA and those provincial level organizations. The purpose of the development/enhancement is not for personal capacity but the institutional capacity. (4) (Mr. Pheng): the main item of the information sharing system is internet site. It would connect to GIS system, the academic research institutions (NAFRI, LAREC, etc.), the Government organizations (at last district level). (5) The target period of TABI is 16 years totally. The present status is initial stage which will continue for 3 years. After the initial stage, the fund source would evaluate the project and decide whether they would fund continuously.	
6. Notes/Issues:	

Field Survey Report for the Data Collection Survey on Biodiversity Conservation in Asian and African Regions

June 14, 2010
Data Collection Survey on Biodiversity Conservation
in Asian and African Regions

1. Introduction

1.1 Background of the Overall Survey

Mankind heavily depends on biodiversity in our lives. Nevertheless, it is reported that the biodiversity on earth is in a critical condition as over 40,000 species become extinct every year due to various human activities, such as deforestation, over hunting, water pollution and others. Efforts to conserve biodiversity have been reinforced internationally after the adoption of the Convention on Biodiversity (CBD) at the United Nations Conference of Environment and Development in 1992. The Government of Japan has also actively worked on the conservation of biodiversity since then as a country that ratified the convention. This year is the last year of the 2010 biodiversity target adopted by the Conference of the Parties (COP 6) held in the Netherlands in 2002. Furthermore, Japan will host the tenth meeting of the COP in October 2010 as the chair country and is expected to play an important role in leading the activities on biodiversity conservation not only domestically but also internationally.

The Japan International Cooperation Agency (JICA) has successfully implemented a number of cooperation projects/programs on biodiversity conservation. Because of its long and successful achievements, the international community expects JICA to make more contributions, towards COP 10, to the conservation of biodiversity in developing countries. In particular, the countries in Asian and African regions need further assistance in biodiversity conservation since there are many biodiversity hot spots and untouched natural forests still remaining in the regions.

Given this background, JICA was determined to conduct a survey to collect and analyze relevant information/data concerning biodiversity conservation and forestry-related measures against climate change, identifying the needs for future cooperation/assistance in the same subjects in the Asian and African regions.

1.2 Objectives of the Overall Survey

The main objective of the overall survey is to identify the needs for official development assistance in the fields of biodiversity conservation and forestry-related measures against climate changes in the Asian and African regions. Toward this end, the survey team aims to:

i) collect and analyze relevant data and information concerning biodiversity and forest conservation as well as forestry-related measures against climate change in the ODA recipient countries in Asian and African regions;
ii) establish a database using data and information collected;
iii) identify the needs for future cooperation in the conservation of biodiversity and mitigation of/adaptation to climate change;
iv) select eight countries in the regions, four in Asia and another four in Africa, for further examination of the possible cooperation that JICA might be able to implement; and
v) conceptualize a/ potential project/s in the fields of biodiversity conservation and

mitigation/adaptation measures in the forestry sector against climate change.

1.3 Background of the Field Survey

1.3.1 Countries visited

As described in the objective of the overall survey, a total of eight counties among the 78 countries, which are strategically important for biodiversity conservation in the regions and in need of JICA's ODA assistance in the same subject, are to be selected for further examination of potential JICA' cooperation. Following initial desk study and discussions with JICA, the following eight countries were selected:

Asian regions: Philippines, Lao PDR, Cambodia, and Vietnam
African regions: Tunisia, Ethiopia, Uganda, and Botswana

1.3.2 Purpose of the Survey

The main aim of the field survey is to further examine the needs for ODA support in the field of biodiversity conservation and conceptualize a/ potential project/s that JICA might be able to work on in the future. Specifically, the following activities are to be carried out in the field survey.

- Discussion of work plan with JICA branch office and relevant government organisations
- Interviews with relevant organisations for data collection
- Discussions on needs for assistance in biodiversity conservation and forestry
- Examination of possible project potential.

1.4 Scope of the Work

1.4.1 Major Activities done by the Survey Team

A member of the study team (referred to as "the Undersigned") has carried out the following activities to fulfill his tasks during his stay in Cambodia.

- Collection and review of existing acts and regulations in the forestry, fisheries, and environmental sectors;
- Collection and review of existing policies, strategies and plans in the same sectors;
- Discussions with government offices and other organizations concerned with biodiversity conservation in the country;
- Field observation of the major ecosystems in the country and/or potential areas for future interventions under the JICA's cooperation; and
- Identification of the needs for future JICA's cooperation in the field of biodiversity conservation in consultation with the relevant government and non-government organizations.

1.4.2 Schedule of the Field Survey

The following table shows the work schedule of the Undersigned from May 24 to June 15, 2010.

Date	Activities
May 24 (Mon)	Arrival at Phnom Penh
May 25 (Tue)	Meeting with JICA Phnom Penh Office, Meetings with NDNCP and FA
May 26 (Wed)	Meetings with the experts of CBSF-II supported by JICA, Taskforce of NFP, Taskforce for combating climate change,
May 27 (Thu)	Meetings with Department of Community Forestry (FA), Department of Wildlife and Biodiversity Conservation (FA), Department of Wildlife (NDNCP), and Department for CBD (MOE)
May 28 (Fri)	Meetings with Fisheries Administration, Department of Community Fisheries (FiA), and Department of Research and Community Protected Area Development (FiA)

Date	Activities
May 29 (Sat)	Data arrangement
May 30 (Sun)	Data arrangement
May 31 (Mon)	Meeting with GIS unit (FA), Discussion with the members of TWG-E&F and relevant NGOs
June 1 (Tue)	Meeting with Department for UNFCCC (MOE)
June 2 (Wed)	Meeting with Department for Conservation International
June 3 (Thu)	Trip to Mondul Kiri, Meeting with FA Cantonment
June 4 (Fri)	Meeting with the field coordinating office of WWF&WCF in Mondul Kiri, Field observation of Seima Protected Forest and Biodiversity Conservation Area, Move to Rattana Kiri
June 5 (Sat)	Meeting with Director of Virachey National Park, Move to Phnom Penh
June 6 (Sun)	Data arrangement
June 7 (Mon)	Trip to Siem Reap, Meeting with Fishery Department of Siem Reap Province, Field observation of fish sanctuary and fishing lots
June 8 (Tue)	Report writing
June 9 (Wed)	Meeting with Tonle Sap Environment Management Project supported by UNDP, Discussion with Department of Wildlife and Biodiversity Conservation (FA)
June 10 (Thu)	Discussion with NDNCP, Meeting with Tonle Sap Conservation Project
June 11 (Fri)	Meeting with Tonle Sap Authority, Meeting with FiA
June 12 (Sat)	Report writing
June 13 (Sun)	Report writing
June 14 (Mon)	Submission of the Field Report to FA, NDNCP, and FiA, Reports to JICAP
June 15 (Tue)	Leaving for Manila

Appendix 1 gives memos of some of the meetings that the Undersigned has had during the assigned period.

2. Policy Analysis

2.1 Review of Existing Legislation relating to the Target Sector

The following acts and government regulations relevant to forest and biodiversity conservation in the county were reviewed in the field work.

a. Royal Decree on the Creation and Designation of Protected Area (1993)
b. Forestry Law (2002)
b. Fisheries Law (2006)
c. Protected Area Law (2008)
d. Land Law (2001)
e. Community Forestry Sub-decree (2006)
f. Community Fisheries Sub-decree (2005)

Findings

The relevance of the above-mentioned legislative documents to biodiversity conservation was confirmed as summarized below.

Legislation	Summary or Relevance to biodiversity conservation
Royal Decree on the Creation and Designation of Protected Area	This royal decree gives the definitions of the protected areas and identifies 23 protected areas categorizing them into four groups, namely, i) seven National Parks (NPs), ii) 10 Wildlife Sanctuaries (WSs), iii) three Protected Landscape Areas (PLAs)m and iv) three Multiple Use Areas (MUAs).
Forestry Law	Forestry Law defines that forest land in the countries consists of i) state-owned permanent forest reserve and ii) private-own forest land. The former is further composed of i) production forest, ii) protected forest, and iii) forest for other land use. At the same time, the law defines that local communities who have traditionally use forest resources in the permanent forest reserve can hold a right to use forest resources for domestic and traditional purposes under the agreement with FA (CF agreement).
Fishery Law	Fisheries law defines the fishery domain which consists of i) permanent waters, ii) Mekong river and Tonle Sap flooded areas, iii) inter-tidal areas, and iv) coastal area

Legilation	Summary or Relevance to biodiversity conservation
	except Economic Zone. Hence, Fisheries Administration (FiA) is responsible for the flooded forests in the Tonle Sap flood plains and mangrove. The law specifies several regulations and promote community fishery arrangement to protect and manage fisheries resources with participation of local communities.
Protected Area Law	This law re-categorizes the protected areas into 8 types: i) national park, ii) wildlife sanctuary, iii) protected landscape, iv) multiple use area, v) ramsar site, vi) biosphere reserve, vii) natural heritage site, and viii) marine park. The law states that each protected area shall be divided into four management zones: i) core zone, ii) conservation zone, iii) sustainable zone, and iv) community zone and the zoning map shall be authorized by sub-decree. The law also encourages the involvement of local communities in the management of protected areas instructing to allocate a part of sustainable use zone to local communities as the community protected area.
Land Law	Land law defines land types and the ownership of the land types. Forests and lakes/rivers, which are ecosystems or habitats of wildlife, are classified into the "immovable property by nature", which are owned by the state as either public or private property. The law also secures the land holding right of indigenous people as a collective ownership right.
Community Forestry Sub-decree	The sub-decree stipulates the procedures for establishment of community forestry with the roles, responsibilities and rights of communities as well as relevant local authorities. Its supporting guidelines (parkas) gives the detailed procedures for the preparation of relevant documents, such as by-laws of community organization, management plan, and agreement.
Community Fisheries Sub-decree	Like in the case of Community Forestry Sub-decree, the sub-decree gives the procedure of establishment and registration of community fisheries with guidelines and formats of the documents (by-laws, management plan, and agreement) necessary for registration.

2.2 Review of Existing Policies and Strategies relating to the Target Sector

2.2.1 National Policies and Strategies

The following national policies and strategies were reviewed during the field survey.

a. National Strategic Development Plan 2006-2010
b. Rectangular Strategies for Growth, Employment, Equity and Efficiency Phase II
c. Cambodia Millennium Development Goals

The key strategies related to biodiversity conservation in national policies and strategies are summarized below.

Source	Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
National Strategic Development Plan 2006-2010	Forestry reform and Environment and Conservation	a. To better manage the protected areas; b. To conserve forests through sustainable management practices; and c. To formulate and implement a comprehensive land policy.
Rectangular strategies	Fisheries reform	a. To maintain sustainability and ensure regeneration of natural resources including preservation of fish resources; b. To strengthen national resource conservation, especially promoting the linkage of conservation to ecotourism; and c. To take serious action against illegal encroachment of flooded forests, use of illegal fishing gears, and all anarchic activities preventing the conservation efforts by encouraging participation from relevant local and competent authorities.
	Forestry reform	a. To ensure sustainable forestry management and use of forests to improve the livelihoods of people living in rural areas and to contribute to economic growth; b. To maintain the protected and biodiversity conservation area system effective; c. To prevent, reduce and eradicate illegal encroachments and occupation of forest land by private individuals;

Source	Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
		c. To enhance management efficiency of the reserved forests and ensure their appropriate promotion and development including ecotourism for generating employment opportunity and additional income for the people; and c. To give more attention to the management of the protected areas.
Cambodia's Millennium Development Goals	Plantation and farm forestry	Goal 7: to ensure environmental stability through integrating the principles of sustainable development and sustainable forest management, such as a. maintaining the forest cover at 60% of the total national land by 2015; b. maintaining biological diversity and enhancing environmental services to other sectors; c. addressing CO2 issues and climate change mitigation and adaptation; and d. increasing the proportion of population with land access security through forest demarcation, classification and registration.

2.2.2 Sector Strategies and Strategic Plans

In addition, the following strategic plans and programs of the relevant sectors (forestry, fisheries and environment sectors) were also reviewed.

a. National Forestry Program (2010)
b. Strategic Planning Framework for Fisheries 2010-2019
c. Environmental Strategic Plan 2009-2013

The following are key strategies/activities related to biodiversity conservation in the sector strategic plans/programs.

a. National Forestry Program

Program related to biodiversity conservation	Activities related to biodiversity conservation (Those indicated in boldface are considered highly relevant to biodiversity conservation.)
Program 1: Forest demarcation, classification and registration	National forest classification of protection forests (Sub-program 2)
Program 2: Conservation and forest resource development and biodiversity program	**Biodiversity and wildlife resources conservation (Sub-program 4)** **- Identification and defining of national conservation priorities** **- Ensuring effective management of protected forest and other conservation areas** **- Establishment and management of recreation areas and ecotourism** **- Prevention of illegal wildlife trade and management of confiscated animals** **- Research and data management** **- Public awareness raising**
	Conservation and development of genetic resources and seed sources (Sub-program 5)
	Tree planting and development of forest plantations (Sub-program 5)
Program 3: Forest Law Enforcement and Governance Program	**Legal and administrative reform (Sub-program 1)**
	Law enforcement and forest crime monitoring and reporting (Sub-program 2)
	Rapid response on forest clime information (Sub-program 3)
Program 4: Community Forestry Program	CF identification and formalization (Sub-program 1)
	Community, institutional, and livelihood development (Sub-program 2)
	CF development support (Sub-program 3)
Program 4: Capacity and Research Development Program	**Institutional and human resource development (Sub-program 1)**
	Extension and public awareness raising (Sub-program 2)
	Research capacity building development (Sub-program 3)

b. The Strategic Planning Framework for Fisheries 2010 - 2019

Goals related to biodiversity conservation	Indicators related to biodiversity conservation (Those indicated in boldface are considered highly relevant to biodiversity conservation.)
Goal 1: Significant and sustainable	a. A number of communities will have and manage fish sanctuaries in an

Goals related to biodiversity conservation	**Indicators related to biodiversity conservation (Those indicated in boldface are considered highly relevant to biodiversity conservation.)**
contribution to national prosperity	effective and sustainable manner.
Goal 2: Increased or at least average livelihoods/income from fishery sector	a. Livelihood opportunities to generate income will be expanded. b. A number of community fisheries will be officially registered and effectively operated. c. The level of illegal and destructive fishing will be reduced.
Goal 3: The fisheries domain and associated resources are in a healthy and resilient condition and sustainably managed.	**a. The number of endangered aquatic species will be reduced.** **b. Critical fisheries habitats will be protected and managed.** **c. Protection flooded forests will be demarcated and mapped.** **d. The upper Mekong deep pools will be protected.** **e. The Great lake fish sanctuaries will be improved through demarcation, protection and public awareness.** **f. The critical fisheries habitats will be managed in a sustainable manner.** **g. Community fisheries will be strengthened to manage natural resources in an effective manner.** **h. Fish bio-ecology monitoring and evaluation systems will be implemented.** **i. Data on the effects on fisheries of damming in the Mekong basins will be available.**
Goal 6: The fisheries domain is managed, developed and conserved in close cooperation with neighboring countries.	a. The regional cooperation will effectively address to the international issues related to fisheries. b. The trans-boundary management systems for major fish stocks and habitats will be established and operative.
Goal 7: The policy, regulatory and support environment for the sector is sufficient, appropriate and enabling.	**a. The goals, policies and plans of the fisheries sector will be harmonized with other relevant sectors and government departments.** **b. The regulatory frameworks to support good governance and regulate illegal activities will be implemented** **c. Law enforcement of FiA will be effective.** **d. The capacity of FiA staff will be developed.**

c. Environmental Strategic Plan 2009 - 2013

Components related to biodiversity conservation	**Activities related to biodiversity conservation (Those indicated in boldface are considered highly relevant to biodiversity conservation.)**
Component 2: Strengthening of PA law enforcement and PA management system	**a. Preparation of relevant sub-decrees, such as, i) management zonation, ii) area allocation for local communities, iii) zoning of several national parks.** **b. Preparation of ministrial orders (Prakas) on planning of PA management plan, resource use right for local communities, regulation of illegal activities, and prohibition of exploitation of endangered species.**
Component 3: Preparation of strategic and action plans for PA management	a. Development of a five-year strategic plan **b. Development of management plans of several PAs** c. Evaluation of protected area management
Component 4 Capacity development of staff with the assistance from development partners	**a. Training of the staff and rangers** **b. Training on biodiversity-related data collection** **c. Training on researches on fauna and flora** **d. Organization of regular meetings with development partners for information sharing** e. On-the-job training of the staff in the projects run by NGOs **f. Development of a mechanism to manage the protected areas**
Component 5: Demarcation of boundaries and zoning of the protected area using GIS	**a. Zonation of several protected areas** **b. Boundary demarcation on the ground of several protected areas**
Component 6: Research on and monitoring of flora and fauna in the protected areas	**a. Collection of data on flora and fauna in the protected areas** **b. List of endangered species in the protected areas** **c. Development of a monitoring plan for major flora and funa in the protected areas** d. Establishment of herbarium and wildlife library
Component 7: Development of eco-park and marine park	a. Construction of an eco-park in coordination with stakeholders. b. Collection of specimens of plants c. Establishment of a nursery based on the ecosystem d. Public awareness rasing and promotion of eco-tourism e. Inventory for suitable areas for reforestation in the protected areas

Components related to biodiversity conservation	Activities related to biodiversity conservation (Those indicated in boldface are considered highly relevant to biodiversity conservation.)
	d. Conduct of a study on development of a marine park

2.3 Review of the Documents submitted UN Conventions (UNFCCC and CBD)

Cambodia ratified UNFCCC and CBD in 1995, and as of December 2009, the country has submitted several documents to the conventions. In order to know the priority activities and the current status as well as the progress of the work that the government has taken, the following documents submitted to the UN conventions were reviewed.

- National Adaptation Programme of Action to Climate Change (NAPA) (2006)
- National Biodiversity Strategy and Action Plan (2002)
- Draft Fourth National Report to the Convention on Biological Diversity (2009)

Some highlights of the findings are summarized below.

Documents	Priority activities relevant to Biodiversity Conservation
NAPA	- Vegetation planting for flood and windstorm protection - Community mangrove restoration and sustainable use of natural resource
NBSAP	Highly Relevant - Protected area management - Inland fishery resource management - Coastal and marine resource management - Land use planning - Community participation - Training, education and awareness - Legislation and institutional structure Fairly relevant - Wild animal and plant species management - Agriculture and animal production - Bio-safety and biotechnology management - Environmental security - Water resources

Source: National Adaptation Programme of Action to Climate Change (NAPA) (2006), National Biodiversity Strategy and Action Plan (2002), Draft Fourth National Report to the Convention on Biological Diversity (2009)

3. Situation Analysis

3.1 Present Natural Conditions in Cambodia

3.1.1 General Geographical Characteristics of the Country

Cambodia is situated in the southern part of Indochina continent, being bordered on the north by Thailand and Lao PDR, on the east and southeast by Vietnam and by the gulf of Thailand on the west. The country is formed by several geographical features: i) Tonle Sap flood plain, ii) lowland plain, iii) coastal area, and iv) plateaus and mountains (e.g., Cardamom mountains, Dangrek Mountains, and Rattana Kiri Plateau. Among others, the plain areas, which are generally with elevations less than 100 m above sea level), cover about 70 % of the total land of the county as shown below.

Ranges of elevation	Area (km2)	Proportion (%)
0-15 m	41,181	22.7
16-50 m	36,410	20.0
50-100m	47,041	25.9
100-250m	35,102	19.3
250-500m	12,231	6.7
500-750m	5,924	3.3
750-1,000m	1,704	0.9
1,000-1,500m	999	0.6
1,500-2,000m	15	0.0

Total	181,607	100.0

Source: The Atlas of Cambodia (2006)

3.1.2 Climates

Cambodia's climate is governed by monsoons and it characterized by two distinct seasons: wet season (May-October) and dry season (November-April). The annual mean rainfall varies with elevation as well as location. In 2004, it ranged from 994 mm in Battambang to 3,548 mm in Koh Kong. The monthly average temperatures in the country fallen within the range from 33.3 degree (Sihanoukville) to 37.2 degree (Rattana Kiri) in 2004. The following table shows the climatic conditions in the country in 2004.

(Unit: mm for rainfall and degree Celsius for temperature)

Items	1	2	3	4	5	6	7	8	9	10	11	12	Total/Ave.
Ave rainfall	6.7	14.4	15.8	68.9	166.4	343.0	306.8	352.9	231.0	145.2	42.5	0.0	1,693.6
Ave. Max. Temp	34.5	35.4	37.2	38.0	37.1	35.7	34.9	34.5	34.2	33.8	34.8	33.4	34.0
Ave. Min. Temp	18.0	18.1	21.9	21.9	23.1	22.5	22.9	22.7	22.8	21.9	20.1	18.0	21.2

Source: Statistical Year Book 2005

3.13 Hydrological Systems

Cambodia has a peculiar hydrological system which is broadly divided into two systems: i) Mekong river system and ii) Tonle Sap Lake system. The following table gives some highlights of the systems.

Systems	Descriptions
Mekong River System	The Mekong River system consists of the main stream of the Mekong River, the Tonle Bassac, and their tributaries. The Mekong River, which crosses the country with a length of 500 km from North to South, is the most important river not only for human being but also every life in the country.
Tonle Sap System	The Tonle Sap system is composed of the Tonle Sap Lake, Tonle Sap River, and their tributaries. The Tonle Sap Lake is one of the large inland water body in southeast Asia and has an important function as an extensive flood storage plain for the Mekong River. The Tonle Sap River flows into the Mekong River during the dry season (October to June), while it flows back into the Tonle Sap Lake during the rainy season (June to October) and inundate the lake and its surrounding forests. This phenomenon increases the depth of the lake from 1 meter to 10 meters and expands the total surface of the lake from 2,500 km^2 to 16,000 km^2. Hence, the lake and the surrounding forests give habitats for aquatic plant species, fishes, reptiles, birds and mammals during the rainy season. The biological richness in the lake has supported livelihoods and economic activities of not only the people living around the lake but also people in the country. Accordingly, the lake provides 40-70% of the protein intake Cambodia's population.

Source: The Atlas of Cambodia (2006) for Mekong River System, Tonle Sap Biosphere Reaserve for Tonle Sap System, and

3.1.4 Soils and Geology

The soils of Cambodia have developed under a humid to sub-humid tropical climate with alternate wet-dry conditions, from the decomposition of acid or basic rocks, colluvial outwash from either or both of these rocks, recent or old alluvial materials and from coastal accretion (Crocker: 1962). According to the soil survey undertaken in 1962, the soils in the country are classified into 16 types.

On the other hand, the geological structure of Cambodia is grouped into three major facies and lithological layers: i) Triassic and Liassic "ancient gulf" covering large areas in the east; ii) Jurassic-Cretaceous continental sandstones forming the main highlands in the west; and iii) Quaternary basin which occupies the whole central plain of the country between both older structure.

3.2 Present Conditions of the Ecosystems in the Country

3.2.1 Terrestrial Ecosystems

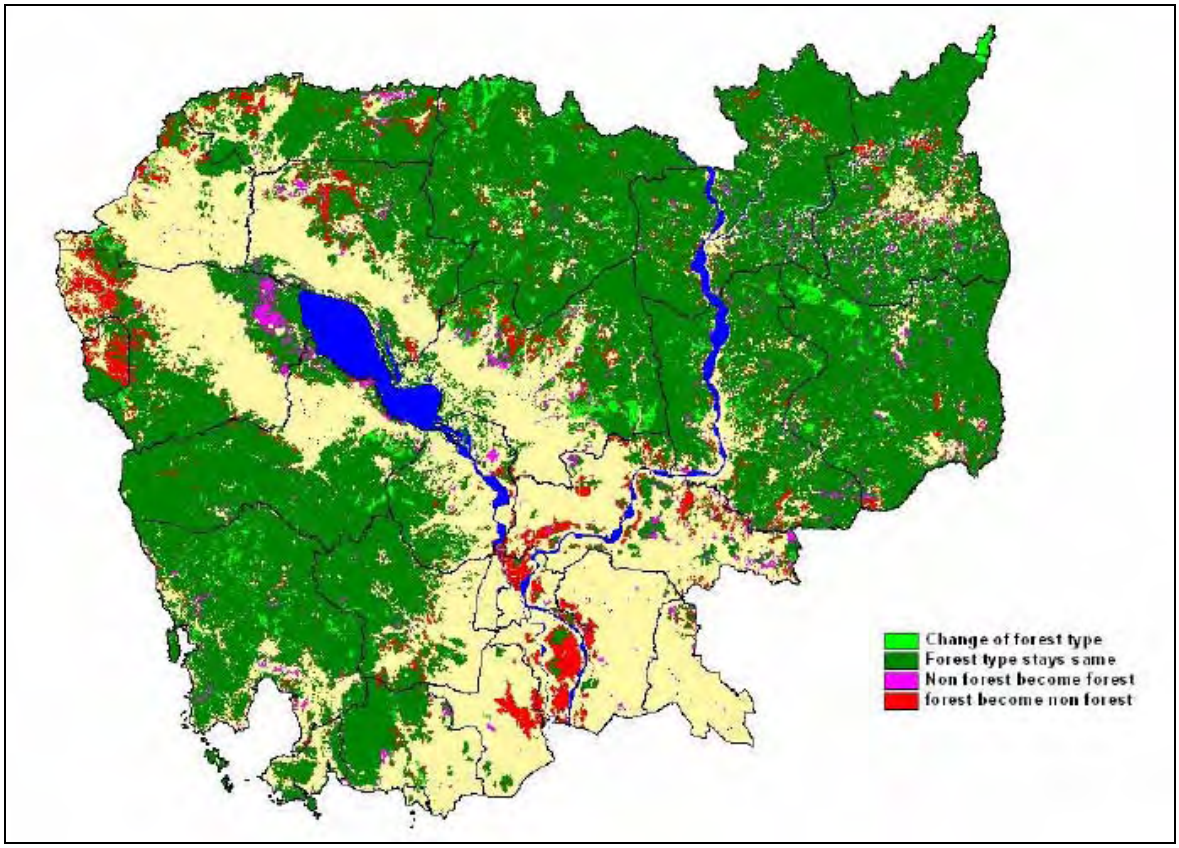
(1) Forest covers

In 1965 more than 70 % of the total land of the country was covered with forests. Over decades, part of the areas have been converted into agriculture and other forms of land use. The latest forest cover assessment made in 2006 revealed that forests occupied 59.8 % of the total land area, which slightly declined from the assessment result in 2002 by 2%. The following tables show the changes of forest covers in the country between 1965 and 2006.

Year	Forest Area	Coverage	Reduction	Source
1965	13,227,100	73.0%	- (-)	n.a.
1973/76	12,711,100	70.0%	516,000 (3.9%)	FAO/UNDP
1985/87	11,852,400	65.3%	1,374,700 (10.4%)	FAO/UNDP
1996/97	11,134,615	61.3%	2,092,485 (15.8%)	MRC/GTZ
2002	11,104,293	61.2%	2,122,807 (16.0%)	FRM
2006	10,864,186	59.8%	2,362,914 (17.9%)	FA

Source: Country Paper on Forestry Outlook 2020

From 2002 to 2006, the most significant deforestation took place in the north-western part of the country as shown below. Although the forest areas has declined over years, it is considered that the country still has substantial forest areas which are crucial for maintaining the terrestrial biodiversity as well as sustaining livelihoods of rural communities in the country.



(2) Characteristics of Forest Types

Forests are comprised of i) evergreen forest, ii) semi-evergreen forest, ii) deciduous forest, iv) dry

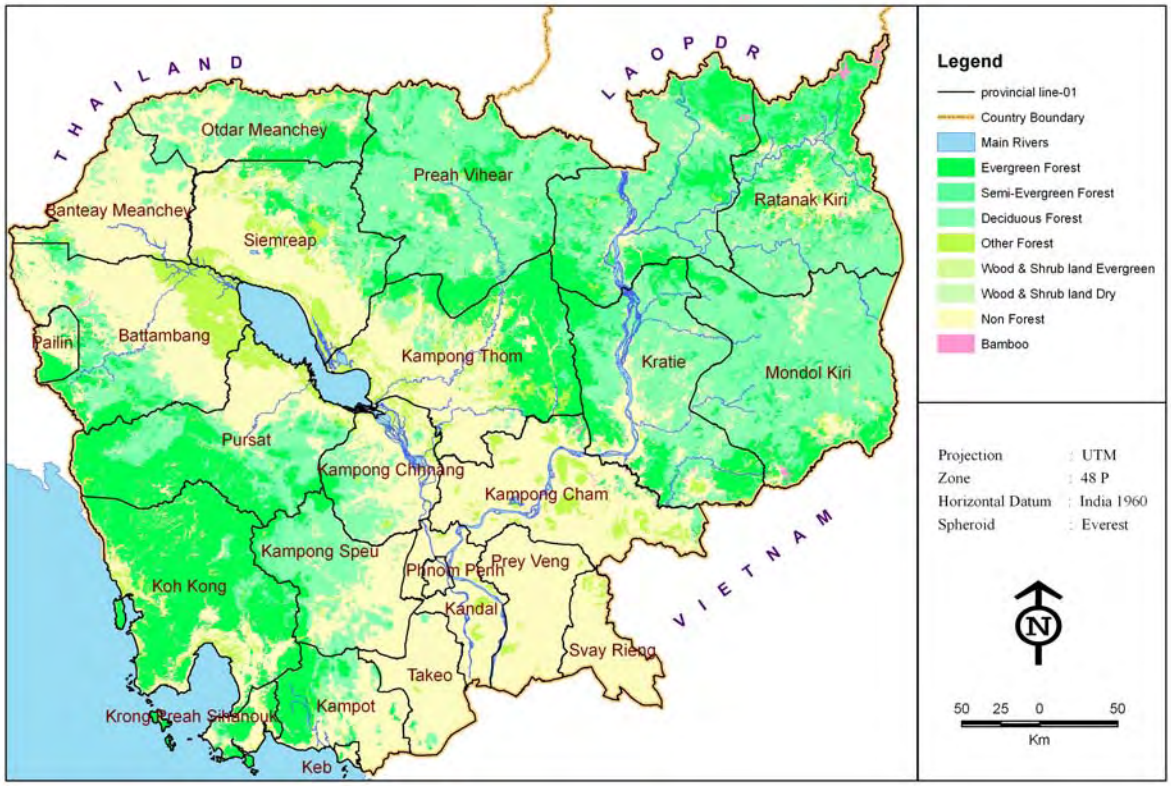
wood shrub, v) evergreen wood shrub, vi) other forests, and vii) bamboo forest. The characteristics of the forest types are summarized below.

Forest Type	Description
Evergreen forest	Evergreen forests are usually multi-storied forests where trees maintain their leaves during the whole year. They comprise the lowland tropical rain forests, the hill evergreen forests and the dry evergreen forest and along streams and rivers (gallery forests).
Semi-evergreen forest	Semi-evergreen forests contain variable percentages of evergreen and deciduous trees, the percentage of evergreen trees varying from 30% to 70%. Semi-evergreen forests continue to appear evergreen throughout the year, even when the percentage of deciduous trees is high.
Deciduous forest	Deciduous forests comprise dry mixed deciduous forests and dry Dipterocarp forests. Deciduous forests drop their leaves more or less completely during the dry season. Human impact such as fire is usually much higher compared to other forest types. Dry Dipterocarp forests naturally have an open character. As undisturbed deciduous forests may have a crown cover of only 40%.
Other forests	This land cover type includes regrowth, stunted forests, mangrove forests, inundated forests, and forest plantations. Regrowth of secondary forests is representative of a continuous, usually dense, layer of smaller trees. Stunted forests grow very slowly because of poor site conditions on hydromorphic soils and rock outcrops. Heavily disturbed forest like mosaics of forest, regrowth, and cropping, corresponding to shifting agriculture in which the percentage of forest is more than 40%, and areas of old regrowth and young secondary forest in the process of regenerating after clear cutting, are also included in this category.
Wood and shrub land evergreen	Wood and scrubland is a mixture of shrubs, grass and trees, the trees cover however remaining below 20 percent. This class can be found mainly on shallow soils, on the top of mountains under climax conditions or as a result of non sustainable land use. Theoretically there is a chance of becoming forest again. TYoung regrowth after shifting cultivation is also included in this class when the shifting cultivation mosaic becomes invisible. There is usually a dense layer of shrub and grass with some trees.
Wood and shrub land dry	A 'Dry' variant of this class can be found in dry plateaus, but also on dry and sun exposed slopes.
Bamboo	This category contains two types of bamboo forests, dense and sparse.
Non forests	This category merges agricultural areas, urban areas, water bodies, grass land and barren land.

The following table and drawing show the areas and distribution of each forest type in 2006.

Forest types	Area (ha)	Proportion (%)
Evergreen forest	3,668,902	20.2
Semi Evergreen forest	1,362,638	7.5
Deciduous forest	4,692,098	25.8
Other forest (flooded forest, mangrove,etc.)	971,341	5.3
Woodland/Shrub (Evergreen)	96,387	0.5
Woodland/Shrub (Dry)	37,028	0.2
Bamboo	35,802	0.2
Sub-total of forest areas	10,864,186	59.8
Non-forest area	7,296,456	40.2
Total area	**18,160,674**	**100.0**

Source: Cambodia Forestry Statistics 2006, FA



Source: FA (2006)

(3) Fauna in the Ecosystem

It is reported that the terrestrial ecosystem has 29 bird species, 34 mammals and 12 amphbians listed in the IUCN red list.

Taxonomic groups	CR	EN	Vul	NT	DD	Total
Bird	4	3	9	13	-	29
Mammal	3	4	11	9	7	34
Amphibian	-	-	3	3	6	12

Source: Draft Fourth National Report to the Convention on Biological Diversity (2009)
Remarks: CR: Critically Endangered, EN: Endangered, Vul: Vulnerable, NT: Near Threatened, DD: Data Deficient

Among the threatened species, the following species are classified into the “critically endangered” and “endangered” in mammal group.

Species under critically endangered:
- Free-tailed bat
- Kouprey
- Javan Rhinoceros

Species under endangered:
- Banteng
- Asian Elephant
- Tiger
- Douc langur

(4) Flora in the Ecosystem

There is no comprehensive assessment made on the status of flora species in the country. However the assessment undertaken by the Cambodia Tree Seed Project (CTFP) in 2003 identified 34 plant species as those to be conserved. It is considered that most of the endemic plant species are distributed in the Cardamom and Elephant forests, swamp forests of the Tonle Sap floodplain, and plateau/hill areas in the north-eastern part of the country, since many natural forests or less distributed forests still remain in the same.

(5) Trends

There is no systematic and completed data set showing the situation of the ecosystem in the country. Data collection has been mainly conducted on a project basis, and hence the data available are rather scattered. The latest conditions of some key large mammals confirmed by the on-going programs/projects in the field[1] are summarized below.

- Kousprey is most likely extinct since there is no confirmed sighting since 1980.
- Khting Vor appears never exists, but the debate will probably continue until a DNA test is done.
- There has been no trace of Javan Rhinocerous anywhere although it was reportedly present at least until 1930s.
- Eld's deer populations have been confirmed from several locations and its potential expansion in population is expected to be high.
- Nine heads of tigers and 20 to 30 heads of elephants are expected to exist in the patrol areas in Mondul Kiri, while 10 to 20 heads of tigers and 15 to 25 heads of elephants are considered available in Cardamom mountains.
- A survey conducted by WCS in Seima Biodiversity Conservation Area[2] reported 116 Asian Elephants existed in the area.

(6) Major Threats

The terrestrial ecosystem has been facing the following pressures/threats.

Threats	Descriptions
Habitat loss	Habitat loss or deforestation has been caused by illegal logging, conversion of forest into agricultural land and other land uses, slash and burning cultivation, land encroachment for settlement, mining, and infrastructure development.
Illegal hunting	Illegal hunting is one of the direct threats to wildlife in the ecosystem, especially large mammals. They have been hunted for consumption as well as trading of bush meat and/or medicine.
Forest degradation	Forest degradation, which especially affects large mammals, is also a widespread concern over the country in terms of biodiversity conservation. Illegal logging of commercially valuable and/or large trees, over harvesting of NTFPs, and slash and burning are major causes.

3.2.2 Freshwater Ecosystem

(1) General Descriptions

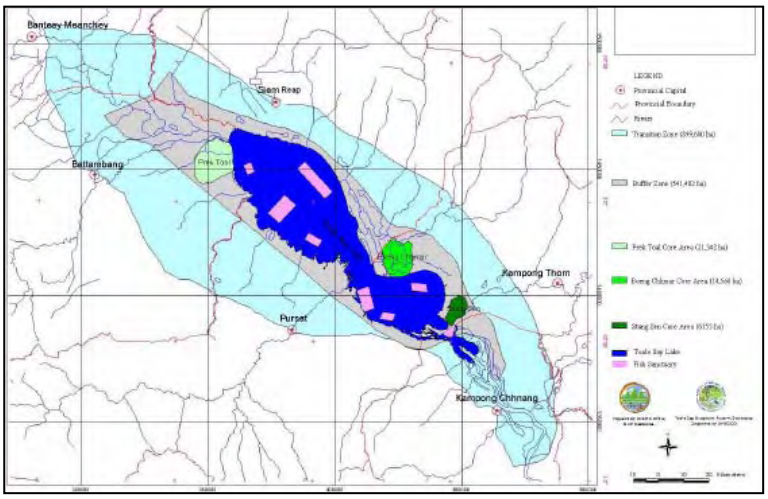
Cambodia is generally considered a "water-wealthy" country, situated in the lower Mekong River Basin. Because of its hydrological characteristics, Cambodia is one of the most productive freshwater

[1] Fourth National Report to the Convention on Biodiversity (2009)
[2] The Status and Conservation of Asian Elephants in Seima Biodiversity Conservation Area, WCS (2008)

fish resources in the world. It is reported that 490 freshwater fish species occupy various ecological niches in the country. Among the freshwater ecosystems in the country, the Mekong River and the Tonle Sap Lake are the main freshwater water systems and generate almost all the fish catches in the country. The outlines of the Tonle Sap Lake ecosystem are summarized below.

Box 1: Tonle Sap Lake

The Tonle Sap Lake is the largest inland lake in Southeast Asia, and is considered one of the most productive, as well the most intensively fished areas in the world. In 2000, the catch was estimated to be over 200,000 tons and worth over US$100 million. The Lake also provides a harvest of other aquatic animals to local fishing communities including shrimps, snakes, eels, and shellfish. The exceptional fisheries productivity is the result of the unique hydrology and extensive floodplains. During the dry season (November to May) water drains from the lake into the Mekong River through the Tonle Sap River, and during the wet season (June to October) when the Mekong River waters rise, water in the Tonle Sap River is reversed and swells the Tonle Sap Lake to around four-five times its surface area from 2,500-3,000 km2 to 10-15,000 km2. The inundation of the surrounding forest yields high nutrient levels that foster fish spawning and growth. It is estimated that between 1 and 3 million people depend directly on the fisheries resources of Tonle Sap Lake for their livelihood. Beyond this, Tonle Sap Lake is a resource of national importance providing food security (fish from the Lake provide 40-70% of the protein intake of the Cambodian population), national revenue, and cultural identity. Recognizing Tonle Sap Lake and its flood plain's unique conservation value, UNESCO designated the lake as the man and biosphere (MAB) reserve in October 1997.



(2) Fauna

A total of 20 reptiles and 22 bird species associated with the freshwater ecosystems in the country are listed in the IUCN Red List 2000 as shown below.

Taxonomic groups	CR	EN	Vul	NT	DD	Total
Reptile	5	7	6	2	-	20
Birds	1	2	9	10	-	22

Source: Cambodia's Biodiversity Status Report 2001
Remarks: CR: Critically Endangered, EN: Endangered, Vul: Vulnerable, NT: Near Threatened, DD: Data Deficient

Among the threatened species, the following species are classified into the critically endangered and endangered.

Taxonomy group	CR	EN
Reptile	- Indochines Box Turtle - Siamese Crocodile - Javan Rhinoceros	- Yellow-headed Temple Turtle - Kouprey - Asian Giant Softshell Turtle
Birds	- Giant Ibis	- Black-faced Spoonbill - Bengal Florican

Source: Cambodia's Biodiversity Status Report 2001

In addition, more than 850 species have been recorded in the lower Mekong River and the Tonle Sap

Lake. Freshwater fish species in Cambodia are very diverse. However, they can be divided into two groups based on their ecological adaptation characteristics, “white fish” and “black fish.” The white fish requires water with higher oxygen and lower pH fluctuations than the black fish. White fish migrates to the Tonle Sap Lake and the flooded forests from the mainstream of the Mekong River in the rainy season. The black fish are the permanent residents of the Tonle Sap Lake[3].

The IUCN Red List categorizes the following fishes as threatened species to be conserved.

- Ladderback Loach
- Mekong Stingray
- Freshwater Whipray
- Marbled Whipray
- Otomebora mullet
- Giant Catfish
- Largetooth Sawfish
- Longcomb Sawfish
- Isok Barb
- Asian Boneytongue
- Laotian Shad

(3) Flora

The forests in the flood plains of the Tonle Sap Lake are composed of two forest associations: i) short-tree shrub land and ii) stunted swamp forest.

The short-tree shrub land covers more than 80 % of the Tonle Sap flood plains. In general, the dominant woody species form a semi-continuous canopy of deciduous species with 2 to 4 meter height, such as *Euphorbiaceae, Fabaceae,* and *Combretaceae*.

On the other hand, the stunted swamp forest, which is 7 to 15 meters in height, covers about 10 % of the floodplains concentrating on the dry-season shoreline of the Lake. This association grows in the areas around the Lake, which are generally inundated up to 4-6 meters for eight months every year. The dominant species in the community are *Barringtonia acutangula* and *Dispyros cambodiana*.

(4) Trends

There is no monitoring record showing the clear changes in species and volume of fishes caught since no scientific research has been made and fishing tools/gears have been improved as years go by. However, there is a tendency commonly observed among fishermen that the catches of large-slow growing species has declined. It suggests the overexploitation as well as reduction of habitats/breeding areas.

Since the forest classification method used in the assessment in 2006 was different from those used in 2002, 1996 and 1992, it is hard to estimate the changes in areas of flooded forests for the last decade. The following table shows the changes of aquatic habitats in Cambodia between 1985 and 1992.

Habitats	Area in 1985(ha)	Area in 1992 (ha)	Changes between 1985 and 1992 (ha)
Permanent water	567,100	411,100	-156,000
Flooded forest and secondary forests	823,600	630,500	-193,100
Flooded grasslands	80,800	84,900	4,100
Receding and floating rice fields	17,500	29,300	11,800

[3] A National Biodiversity Propectus, Ashwell, D.A. (1997)

Habitats	Area in 1985(ha)	Area in 1992 (ha)	Changes between 1985 and 1992 (ha)
Seasonally flooded crop fields	366,800	529,900	163,100
Swamp	12,200	1,400	-10,800
Total	1,868,000	1,972,900	-609,700

Source: Draft Fourth National Report to the Convention on Biodiversity (2009)

It was reported that there used to be more than 1 million ha of flooded forest in the flood plains of the Tonle Sap Lake in the 1960s. More than 400,000 ha of flooded forests had been cleared and converted into mainly farmlands as indicated in the above-mentioned table. Accordingly, deforestation or conversion of flooded forests is still the major threat to the ecosystems in the Tonle Sap Lake as well as the Mekong River.

(5) Major Threats

The freshwater ecosystem has been facing the following pressures/threats.

Threats	Descriptions
Over harvesting	Reptiles, especially turtles, sankes, and monitor lizards, have been heavily hunted for consumption and commercial purposes. They mainly traded as medicinal and food products in Vietnam and China.
Illegal fishing	Illegal fishing practices using explosive devices, poison, and illegal fishing gears, have had an adverse effect on some invertebrate groups. Such practices have often destroyed habitats and caught even juvenile fishes.
Dam construction	Dam construction in the catchment of the Mekong River may lower the peak flood level of the Lake and eventually affect the ecosystem since the flooded area is likely reduced and flooded season may be shortened. The study on the effect of the Yalu dam in Vietnam estimated the loss of about 3,400 households in Cambodia at over US$ 2.5 million.
Decrease of flooded forest	Cutting or conversion of flooded forest to open farmland is also the direct cause of habitat loss. It has also negatively affected fishery production.
Water pollution	Inflow of polluted water from agricultural lands and populated areas such as Siem Reap Town has caused the deterioration of water quality of the Lake. It was reported in 2000 that about 67 % of farmers interviewed around the Lake used pesticide and the total estimates of pesticides used was 1.3 million litters.
Exotic species	There is a concern that exotic fish species may cause damage to the ecosystem, especially aquatic ecosystem, though there is no research or study conducted.

3.2.3 Coastal Ecosystem

The coastal ecosystems in Cambodia mainly consists of three components: i) Coral reef, ii) Sea grasses, and iii) Mangrove wetland.

(1) Coral Reef

There is few researches/studies made on coral reef in Cambodia. Its distribution, composition and status (healthyness) are still unknown. Based on the available data, it is estimated that most of coal reefs are found in Kampot, Koh Kong and around islands off the coast. So far around 70 coral species have been found. The coral reef surveys conducted by the Environmental Management in the Coastal Zone Project (Phase II) estimated the coral reef areas in the coastal zone as shown below.

Ecosystem	Kampot	Koh Kong	Sihanoukvile	Kep
Coral reef	953 ha	602 ha	1,198 ha	53 ha

Source: State of the Coastal Environment and Socio-economy (2005)

(2) Sea Grasses

Stretches of shallow coastal waters often provides habitats for sea grasses, which further provide habitats for juvenile fish and therefore function as a nursery for many fish species. Sea grasses in Cambodia can be divided into two types: i) extensive sea grass meadows along the mainland and ii)

paths of sea grass linter-linked with coral reefs around islands. The above-mentioned Environmental Management in the Coastal Zone Project (Phase II) also surveryed the sea grass bed in the coastal zone. The following table showed the estimated areas of sea grasses in the coastal provinces.

Ecosystem	Kampot	Koh Kong	Sihanoukvile	Kep
Sea grass	25,241 ha	3,993 ha	164 ha	3,096 ha

Source: State of the Coastal Environment and Socio-economy (2005)

Sea grasses are vulnerable to water pollution and bed disturbance by destructive fishing practices such as push nets and trawling. In many cases in the country, the water pollution has been caused by sediment flow after logging, inflow of eutrophic water or water contaminated by agrochemicals from farms, and discharge of domestic and industrial wastewater.

(3) Mangrove

The assessment made in the State of the Coastal Environment and Socio-economy in 2005 estimated about 11,690 ha of mangrove were cleared and converted into other types of land use between 1992 and 2002. The areas covered with mangrove in major coastal districts in 2002 are as follows.

District	Area in 2002 (ha)	Estimated loss (ha)
Kampong Tranchs	319	- 3,535
Kampot	660	- 519
Kampong Bay	408	- 177
Botum Sakor	11,216	-3,537
Kiri Sakor	4,203	-157
Koh Kong	11,229	-344
Smach Meanchey	2,265	-250
Moundul Seima	6,889	862
Srae Ambel	10,452	-2,778
Kampong Seila	0	-818
Mittakpheap	45	-101
Prey Nob	7,479	77
Stueng Hav	191	-160
Damnak Chang'aeur	666	-286
Kep	165	35
Total	**56,188**	**-11,688**

Source: State of the Coastal Environment and Socio-economy (2005)

The above-mentioned table indicates that mangrove deforestation has mainly taken place in Botum Sakor, Srae Amble and recently in Kampong Trach and Kampong Seila. Major causes of mangrove deforestation are harvesting/cutting for firewood, construction materials and fishing stakes, land conversion for salt farming or aquaculture.

(4) Marine Fauna

A total of 435 fishes were found in 1983 in the waters within Cambodia's exclusive economic zone. Four species of marine turtle, which were classified as endangered species, have been reportedly seen. A study on whale confirmed the existence of the following mammals.

- Short-finned Pilot Whale Balaenoptera
- Dugon
- Fin Whake Balaenoptra
- Bryde's Whale B

(5) Trends

Coastal and marine development has been rushing in the coastal zone. Almost all the island s in

coastal waters in the country are offered on concession. Mangrove and coral reefs mainly in the mainland were converted for urban and tourism developments.

(6) Threats

The coastal ecosystem has been facing the following pressures/threats.

Threats	Descriptions
By-catch	By-catch is the most immediate concern for marine mammals. A variety of forms, such as monofilament gillnets. Set-nets and Spanish mackerel nets are prevalent.
Habitat degradation	This is mainly caused by a industrial scale trawling in offshore waters by foreign fishing vessels and small-scale trawling and push-netting in inshore waters by a large fleet of Cambodia fishing boats.
Over-fishing	The cause of and effect by over-fishing are the same with those under the habitat degradation.
Water pollution	Water pollution causes the depletion of sea grasses. The reduction of sea grasses will result in the reduction of nursery for fish and habitats of dugon.

3.3 Biodiversity Conservation Activities

3.3.1 In-situ Conservation

(1) Protected Areas and Forests in the Country

In Cambodia, there are two protected area management systems: i) Protected Areas managed by the Ministry of Environment (MOE) and ii) Protected Forest and Maine Protected Area managed by the Ministry of Agriculture, Forestry and Fisheries (MAFF). At present, there are 25 protected areas managed by MOE and 10 protected forests and one marine protected area managed by FA in the country as shown below.

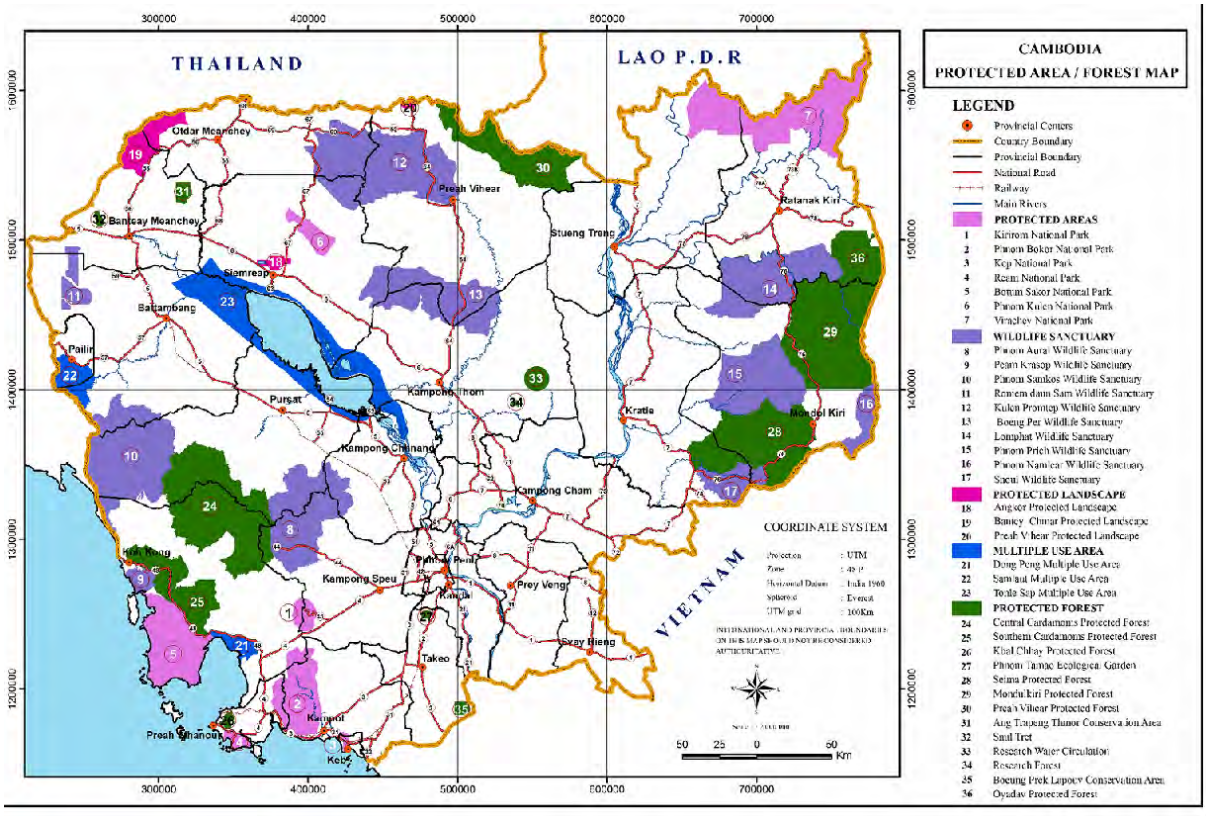
Category	No of areas	Main management objectives	Responsible body	Area (km2)
National Park	7	Biodiversity conservation Ecosystem conservation Recreation	GDNCP (MOE)	7,751
Wildlife Sanctuary	10	Biodiversity conservation Scientific research Wilderness protection	GDNCP (MOE)	719,161
Protected Landscape	3	Biodiversity conservation Conservation of specific natural and cultural features	GDNCP (MOE)	1,018
Multiple Use Area	3	Biodiversity conservation Sustainable use of resources in natural ecosystems	GDNCP (MOE)	4,210
Ramsar Site	1 <1	Protection of internationally significant wetlands	GDNCP (MOE)	149
PAs under GDNCP	24			32,289
Protected forest	9	Biodiversity conservation Conservation of genetic resources and wildlife habitats	FA (MAFF)	14,860
Marine Protected Area	1	Management and protection of threatened species and habitats in the marine realm	FA (MAFF)	696
PAs under FA	10			15,556
Total PAs	**35**			**47,845**

Note: <1 There are three Ramsar sites in the country. However, one of the Ramsar sites is located within a multiple use area, and another one partially overlaps with a wildlife sanctuary and national park. Hence, the non-overlapping area, Stung Treng Ramsar Site, is presented here.

Source: The Atlas of Cambodia (2006) with revision made by the JICA Survey Team

Significant part of the country, about 26 % of the total land, is designated as protected areas to

conserve the ecosystems and its associated biological diversity. In particular, those located in the highly biologically-diversified areas, i.e., in Cardamom mountains and North-eastern plateau, connect with each other and form an extensive network that is necessary for conservation of large mammals such as tigers and elephants. In addition to the protected areas and forests mentioned above, FiA also established several fish sanctuaries in both freshwater and marine areas to conserve key species such as dolphins, dugongs, sea turtles, coral reef, and fish resources in the Tonle Sap Lake. The existing protected areas and forests are shown below.



In a sense, the protected area management system in the country is considered effective for in-situ conservation on the legal documents. However, the ecosystems in the protected areas and forests have faced several threats and pressures due to weak law enforcement, lack of capacity of the government institutions, conflict with land concessions and other economic development, land encroachment, slash and burning, and illegal hunting by local communities as well as outsiders. Consequently, the protected area management system need to be further strengthened in terms of field management and application of the policies/legislation on the ground to conserve biodiversity in the country.

(2) Community Forestry (CF)

The aim of community forestry (CF) is to empower local communities to manage and protect existing forests and forest resources in the respective localities in a sustainable manner. By doing this activity, the remaining forests outside the protected forests and areas are expected to be protected by local communities from further deforestation and degradation. As of December 2006, FA with the assistance from development partners has established 264 CF communities which cover 484 villages and 179,020 ha in the country. However, only 124 CF communities have been registered and the others are still in the process of PM approval. The demarcation of the boundaries of the permanent forest estate for community forestry is the most difficult and time consuming step and in many cases

such a step causes the delay in the registration.

In the NFP, FA aims to i) formalize 300 CFs through the conclusion of CF agreements with CF management plans; ii) identify at least 200 new potential CF areas for the next five years; and iii) strengthen the management capacity and sustainability of CF communities so as to enable them to manage and protect the allocated forests in a sustainable manner.

(3) Community Fisheries (CFi)

The community fisheries (CFi) arrangement is another tool to involve local communities in the management and protection of fisheries and aquatic resources. As of June 2009, a total of 479 community fisheries with participation of 126,490 households have been established. About half of them were already registered in the government. In the Tonle Sap Lake, 119 community fisheries were registered out of 160 established community fisheries.

FiA plans to focus on the strengthening of the established community fisheries rather than further expansion. Ensuring of the sustainability of the established community fisheries is one of the major concerns in the sector.

(4) Community Protected Area (CPA)

The community protected area is a scheme designated under the Protected Area Law to involve local communities who reside in and around the protected areas in the management and protection of the protected areas. Local communities who participate in CPA are allowed to use and harvest forest resources in the protected area but only for domestic and traditional purposes. The concepts and general procedures are almost the same as what are employed for community forestry. GDNCP is now preparing the guidelines (parkas) for establishment and implementation of CPA.

According to Director of Department of Community Protected Area Development, GDNCP, a total of 84 CPAs has been established with a coverage of 104 villages and 93,339 ha in the protected areas. As compared to FA and FiA, the activities on CPA seem to be just started. GDNCP aims to expand the CPA coverage as well as communities along with the strengthening of the capacities of the established CPAs in terms of management and financial aspects.

(5) Issues on In-situ Management

After a series of discussions with the relevant departments of FA, FiA and GDNCP as well as development partners, the Undersigned considers that the government needs to address the following issues for in-situ management.

- Demarcation of the boundaries of permanent forest estates
- Demarcation of the boundaries of protected areas under MOE
- Strengthening of the institutional capacities of the relevant department for protected area management (budget allocation, staff, and facilities)
- Establishment of self-financing mechanisms for sustainable conservation and protection of protected areas by the respective responsible bodies (e.g., REDD and PES)
- Establishment of self-financing mechanisms or livelihood development mechanisms for maintaining the management activities of CF/CFi/CPA (e.g., Eco-tourism, any resource-based livelihood options, and REDD)
- Capacity development of the relevant government offices from the central to field level on protected area management

- Enhancement of awareness about the importance of biodiversity conservation among local communities
- Collection and preparation of the baseline data of biodiversity in the protected areas for the scientific-based management (adaptive management) and assistance in the valuation of the protected areas
- Preparation of management plans and zoning plans of some protected areas/forests
- Preparation of a multi-sectoral land use / spatial plan on a sub-national level so as to harmonize the economic development with biodiversity conservation.

3.3.2 Ex-situ Conservation

(1) Current Situation

Cambodia has established the following five zoos throughout the country.

- Phnom Tamao Zoological Garden and Widlife Center
- Koh Kong Safari World
- Prey Angkor Zoo
- Wildlife Development Center
- Angkor Center for Conservation Biodiversity

Among them, Phnom Tamao zoo conducts in-captive breeding and currently breed more than 92 species of mammals, birds, and reptiles. In addition, there are five wildlife farms in the country which breed long-tailed crab easting monkeys for food and researches and.

(2) Government Strategic Plans

In order to encourage the ex-situ conservation, the following activities are proposed in the strategic plans of FA and GDNCP.

- Conservation and development of genetic resources and seed sources
- Establishment of a museum on flora and fauna (herbarium and wildlife library)
- Development pf eco-park and marine park

4. Stakeholder Analysis

4.1 Government Organizations related to Biodiversity Conservation

The following government organizations play an important role in conservation of biodiversity and ecosystems in the country.

a. Forestry Administration (FA), Ministry of Agriculture, Forestry and Fisheries (MAFF)
b. General Department of Nature Conservation and Protection (GDNCP), Ministry of Environment (MOE)
c. Fishery Administration (FiA), MAFF
d. Tonle Sape Authority

4.1.1 Forestry Administration (FA)

(1) Organization Structure and Number of Staff

FA has six departments and one institute at the central level. At the provincial level, four insectorate offices oversee 15 cantonment offices in 24 provinces. Each cantonment further controls two to eight

district offices. A total of 55 FA district offices are distributed across the country. Figure 1 shows the organizational structure of FA.

In 2009, FA has 1,520 staff of which 289 persons work in the departments at the central level and the rest (1,231 persons) are deployed at the provincial offices.

(2) Mandates of the Organization

The mandates stipulated in Forestry Law are outlined below.

a. Issue regulations governing forest activities to ensure the sustainable management of permanent forest estate
b. Collect data on state forests regarding scientific, economic, social and environmental factors in order to set a sustainable production level
c. Assess boundaries, classification and demarcation of forest in order to develop a land use map of permanent forest estate in coordination with the Ministry of Land Management Urban Planning and Construction, local authorities and communities
d. Prepare and implement the National Forest Management Plan at each level of the FA
e. Promote reforestation on degraded forest land and idle forestland
f. Promote the development of community forest agreements and programs by providing financial and technical assistances where feasible to communities
g. Develop and implement research, protection and conservation programs for forest resources and wildlife
h. Take appropriate measures to investigate, prevent and suppress forest destructions, forest fires and forest clearing to ensure effective law enforcement
i. Promote public education programs that demonstrate the importance to manage, maintain and protect forest resources, as well as to take action to rehabilitate natural ecosystems and maintain national forest
j. Promote international cooperation to strengthen the capacity to protect and develop forest resources
k. Ensure the timely and complete assessment of all forests related activities that may have a significant adverse social and environmental impact prior to approval of such activities

4.1.2 General Department of Nature Conservation and Protection (GDNCP)

(1) Organization Structure and Number of Staff

GDNCP has seven departments, namely i) Department of Administration and Management, ii) Department of Wildlife Sanctuaries, iii) Department of National Parks, iv) Department of Community Protected Area Development, v) Department of Wetland and Water Environment, vi) Department of Convention on Biological Diversity, and vii) Department of Combating Climate Change. Since there is no data provided to the survey team, the organizational structure is not presented in this field report. Likewise, the Undersigned was not able to collect any data on the number of staff in GDNCP during the survey.

(2) Mandates of the Organization

Protected Area Law stipulates that GDNCP shall have the following duties:

a. Develop strategic plans, action plans, and technical guidelines for managing the protected areas;
b. Make proposals for the establishment and modification of any protected area as required by

the Royal Government of Cambodia or pursuant to regional and international conventions, protocols and agreements;

c. Prepare guidelines and procedures for effective enforcement of Protect Area Law;
d. Take action to investigate, control, and crackdown on natural resource offences in the protected areas and file complaint to court;
e. Promote education and dissemination to the public to participate in the conservation and protection of natural resources within the protected areas; and
f. Formulate agreements on community protected area development programs.

4.1.3 Fisheries Administration (FiA)

(1) Organization Structure and Number of Staff

FiA consists of seven departments, two institutes, and its branch offices at the provincial level. The organizational chart of FiA is presented in Figure 2.

The total number of staff working in FiA is 1,120, of which 272 persons work in the departments at the central office and 147 persons in either research institutes or inspectorate offices. The rest (894 persons) of them work at the field offices namely, 325 persons in FiA cantonment offices, another 325 in division offices, and 244 in triages.

(2) Mandates of the Organization

Article 9 of Fisheries Law specifies the duties of FiA as follows:

a. Manage, protect, conserve and develop fishery resources
b. Implement the national socio-economic plans and government policy;
c. Develop and implement the fishery management and development plans;
d. Develop legal standards on fishery management;
e. Implement and monitor fishery law enforcement and implement international obligations on fishery;
f. Develop statistics systems concerning fishery;
g. Guide, cooperate, conduct researches and disseminate fishery science and techniques;
h. Monitoring, control and surveillance
i. Provide fishery officers, fishermen, and aquaculturists with fishing skills;
j. Determine the types of fishing gear and fishery resources;
k. Demarcate, organize, improve, and maintain fishery management areas;
l. Determine fishery exploitations and fishery related activities;
m. Generate income from fisheries.

4.1.4 Tonle Sap Authority (TSA)

(1) Organization Structure and Number of Staff

The Tonle Samp Authority (TSA) was recently established in accordance with the Royal Decree on the Establishment of Tonle Sap Authoiry in 2007. The main aim of the establishment of TSA is to promote the coordination among the relevant ministries and provincial government offices to manage, conserve and develop the Tonle Sap Basin. Hence, TSA is constituted of the staff from the relevant ministries (e.g., MORAM, MAFF, MOE, and other relevant ministries) and relevant provincial government offices. Since TSA is to directly report to the prime minister, the minister of MORAM currently takes the role of the president of TSA.

As shown in Figure 3, TSA has three technical departments and one administration department. The total number of staff working in TSA is 47 as of December 2009.

(2) Mandates of the Organization

The main objective of TSA is to facilitate the coordination among the stakeholders for management, conservation and development of the Tonle Sap Lake. Specifically, TSA shall:

a. Serve directly as headquarter of the Royal Government in TSI projects by conducting research, monitoring, and providing comments to the Royal Government of Cambodia;
b. Prepare policy, strategy plan, programmes and projects in collaboration with relevant ministries and development partners;
c. Coordinate ongoing and planned activities/projects of ministries-agencies, local authorities, national and international organizations, NGOs and civil societies working in Tonle Sap basin areas in order to make work smooth and effective;
d. Follow up, monitor and evaluate project implementation to drive relevant implementers to be consistent with strategies and plans of the Royal Government of Cambodia;
e. Serve as a representative of the Royal Government of Cambodia in all meetings, negotiations, and activities to solve problems which occur accidentally;
f. Sign agreements, protocols, and contracts upon the agreement by the Royal Government;
g. Serve as a counterpart to all development partners in joining consideration to identify activities which will be performed;
h. Report main activities to the Royal Government of Cambodia; and
i. Perform other tasks assigned by the Royal Government of Cambodia.

4.2 Donors and International Organizations

Donors and international organizations or development partners have supported the government in the forestry, fisheries and biodiversity conservation sectors over years. In 2004, donors and international funding institutions organized the technical working groups (TWGs) for 18 sectors so as to assist the government's activities in a collaborative manner. FA and MOE have worked with TWG for forestry and environment, while FiA has worked with TWG for fisheries. TWG members (donors and funding institutions) have funded to the TWG funds and TWGs have provided financial assistance to the relevant government organizations for them to implement their planned activities.

In addition to the cooperation within the framework of TWG, development partners have also implemented projects/programs related to biodiversity conservation as outlined below.

Development partners	Major activities
FAO/UNDP	Current Activities - Implementation of community forestry - Assistance in the implementation of a REDD pilot project in Stung Treng/Mondul Kiri - Regional project related to coastal management
UNDP/GEF	Current Activities - Implementation of Tonle Sap Conservation Project
ADB	Current Activities - Implementation of the Biodiversity Corridor Initiatives providing financial assistance to international NGOs working in the protected areas/protected forests which have high biodiversity and connect with the protected areas in the neighboring countries. - Implementation of Tonle Sap Sustainable Livelihoods Project Past Activities - Implementation of Tonle Sap Environmental Management Project
DANIDA	Current Activities - Assistance in the establishment of community forestry - Assistance in the implementation of annual working plans of 6 FA Cantonments

Development partners	Major activities
	- Assistance in the establishment of community fisheries - Implementation of a coastal management project in Peam Krasop Wildlife Sanctuary
JICA	Current Activities - Implementation of the Project on Capacity Building for the Forestry Sector, Phase II (including the implementation of CF pilot projects)
ITTO	Current Activities - Assistance in the introduction of community forestry in Preah Vihear Protected Forest
Conservation International	Current Activities - Assistance in the management and conservation of Central Cardamoms Protected Forest (Law enforcement, Preparation of a management plan, Community Forestry, Livelihood support, and Public awareness) Pipe lined activity - Conduct of a rapid study on the eight fish sanctuaries in the Tonle Sap Lake
Fauna and Flora International	Current Activities - Assistance in the management and conservation of Phnom Samkos Wildlife Sanctuary
Wildlife Alliance	Current Activities - Assistance in the management and conservation of Botum Sakor National Park and Southern Cardamoms Protected Forest
Wildlife Conservation Society	Current Activities - Assistance in the management and conservation of Seima Protected Forest and Biodiversity Conservation Area and Preah Vihear Protected Forest
World Wildlife Foundation	Current Activities - Assistance in the management and conservation of Phnom Prich Wildlife Sanctuary and Mondul Kiri Protected Forest
PACT	Current Activities - Assistance in the implementation of CF-REDD project in Oddar Meanchey Province
Clinton Climate Initiative	Current Activities - Assistance in the implementation of CF-REDD project in Seim Reap
World Bank	Past Activities - Implementation of Biodiversity and Protected Area Management Project

Source: Interview to FA, FiA and GDNCP

Note: The assistance activities for improvement of management and conservation of protected forest and area are i) law enforcement, ii) community forestry, iii) management planning with demarcation and zoning, iv) livelihood survey, v) public awareness raising, and vi) biodiversity researches, in general.

5. Needs Assessment

5.1 Important Areas

The following areas are considered important and valuable in the country in terms of biodiversity conservation because of the existence of natural and diversified ecosystems and peculiar hydrological regime.

- Cardamom mountain ranges
- Protected areas and forests in the eastern plain
- Tonle Sap flood plain
- Upper part of the Mekong river
- Evergreen forests in the central lowland

5.2 Needs for Further Cooperation

As a result of quick reviews and analyses of the current policy and strategies, present situation of the sectors, and relevant stakeholders, the Undersigned considers that the following topics/aspects still need to be addressed for biodiversity conservation in the country.

Common Aspects:

- Need to enhance the capacities of the staff of the relevant departments (FA, FiA, and

GDNCP) especially at the local level on conservation and management of ecosystems, conduct of researches, data management, ecotourism development, collaborative management with local community, and use of data collected in management.

- Need to set up the baseline data on biodiversity in the major ecosystems listed in Section 5.1.
- Need to examine, initiate and test a/ financial mechanism/s so that the management body can secure the necessary source of fund for its operation.

Terrestrial Ecosystems

- Need to strengthen the institutional capacities of FA and GDNCP for protected area management (including facilities in the protected areas/forests).
- Need to strengthen the management and conservation of the protected areas and forests, especially those facing the lack of support from development partners.
- Need to coordinate with the neighboring countries for protection and management of trans-boundary biodiversity.
- Need to develop a management plan as well as land use plan of some protected forests and areas, especially those without any support from development partners.
- Need to demarcate the boundaries of permanent forest estate, protected forests and protected areas.
- Need assistance in the establishment of ex-situ conservation facilities.
- Need to assist the community forestry communities in developing an income generating mechanism and implementing a management plan of their areas.
- Need to introduce CPAs in some protected areas to reduce human pressures by local communities residing around the protected areas.
- Need to finalize the guidelines for the establishment and implementation of CPAs.

Freshwater Ecosystems

- Need to support the existing community fisheries communities in development of a self-financing mechanism/income generating mechanism as well as implementation of their management plans.
- Need to develop a mechanism where the relevant government departments and provincial governments can coordinate and have dialogues with each other for the management and conservation of the Tonle Sap Lake and its flooded forests

Marine Ecosystems

- Need to support the existing CFi communities in development of a self-financing mechanism/income generating mechanism as well as implementation of their management plans.
- Need to rehabilitate and protect mangrove forests in the area where mangrove can serve dual purpose, namely improvement of ecosystem and adaptation measures against climate change.
- Need to research coral reefs and the ecosystems in islands

6. Conceptualization of Potential Interventions

6.1 Basic Principles for Formulation of the Potential Interventions

The following principles are taken into account in the conceptualization of the potential JICA's interventions for biodiversity conservation.

a. The possible JICA's cooperation should be in line with the existing government strategies and programs, such as: i) NFP, ii) Environmental Strategic Plan, iii) Strategic Planning Framework for Fisheries, iv) NAPA, and iv) NBSAP.
b. The possible cooperation should avoid overlapping with the existing activities but should rather align with the existing activities.
c. The possible JICA's cooperation should respect the government's initiatives and focus on maximizing the efforts made by the government as well as development partners.
d. There is a need to consider the cooperation in the framework of the regional coordination with the neighboring countries, namely Lao PDR and Vietnam.

6.2 Long-list of Potential Interventions

By analyzing the identified needs in accordance with the above-mentioned basic principles, the Undersigned comes up with the potential JICA's interventions as long-listed below.

<u>For Conservation of Terrestrial Ecosystems</u>

a. Capacity development of the staff of FA and GDNCP, especially those working in the field, on the relevant knowledge and skills for protected area management and biodiversity conservation using the training center where the JICA project is currently working in
b. Assistance in the trans-boundary biodiversity conservation in the north-eastern plateau of Cambodia and the neighboring countries (Vietnam and Laos) by strengthening the protected area management in coordination with NGOs and facilitating the establishment of a platform for dialogue and information exchange among the stakeholders in the neighboring countries on trans-boundary biodiversity conservation
c. Assistance in the strengthening of management of the protected forests and protected areas in Cardamom Mountain Ranges in coordination with NGOs
d. Assistance in the registration of the remaining evergreen forest in the central lowland as a protected forest by demarcating the boundaries and conducting several researches and surveys on natural and socio-economic conditions in the area
e. Assistance in strengthening the management system in Virachey National Park in Rattana Kiri by updating the management plan, supporting the existing CPAs, and introducing a self-financing mechanism, such as eco-tourism and REDD.

<u>For Conservation of Freshwater Ecosystems</u>

a. Capacity development of the stakeholders (MOE, FiA, private fish operators and communities) for sustainable use and management of the core areas of the Tonle Sap Biosphere Reserve providing on-the-job training on adaptive management of the core areas including updating of the existing management plans, biological monitoring, awareness raising of the stakeholders, and introduction of sustainable self-financing mechanism (such as introduction of PES)

b. Capacity development of the staff of FiA for collection and set-up of the biological baseline data in selected fish sanctuaries in the Tonle Sap Lake and the spawn/breeding areas in the upper part of the Mekong River for the management of aquatic ecosystems in the Tonle Sap Lake
c. Assistance in the formulation a management plan of the Tonle Sap basin to protect/manage the Tonle Sap Lake resources in a sustainable manner and in the establishment of a platform where all the stakeholders can discuss the management plan and the status of the Lake and its flooded forests on the initiatives of TSA
d. Assistance in strengthening community fisheries communities around the Tonle Sap Lake in coordination with the Tonle Sap Livelihood Support Project.

For Conservation of Coastal / Marine Ecosystems

a. Assistance in the rehabilitation and protection of mangrove forests with participation of local communities in the coastal area
b. Assistance in strengthening community fisheries communities in the coastal area

6.3 Priority Interventions

The long-listed projects are evaluated in terms of: i) relevance, ii) appropriateness of size (as compared to the capacity of the corresponding government agency), iii) necessity, iv) urgency, v) expected impact and vi) underlying risks, for prioritization.

As a result of the evaluation given in the next table, the following projects/interventions are tentatively evaluated as priority ones.

Terrestrial

a. Capacity development of the staff of FA and GDNCP, especially those working in the field, on the relevant knowledge and skills for protected area management and biodiversity conservation using the training center where the JICA project is currently working in
b. Assistance in the trans-boundary biodiversity conservation in the north-eastern plateau of Cambodia and the neighboring countries (Vietnam and Laos) by strengthening the protected area management in coordination with NGOs and facilitating the establishment of a platform for dialogue and information exchange among the stakeholders in the neighboring countries on trans-boundary biodiversity conservation

Freshwater

a. Capacity development of the stakeholders (MOE, FiA, private fish operators and communities) for sustainable use and management of the core areas of the Tonle Sap Biosphere Reserve providing on-the-job training on adaptive management of the core areas including updating of the existing management plans, biological monitoring, awareness raising of the stakeholders, and introduction of sustainable self-financing mechanism (such as introduction of PES)
b. Capacity development of the staff of FiA for collection and set-up of the biological baseline data in selected fish sanctuaries in the Tonle Sap Lake and the spawn/breeding areas in the upper part of the Mekong River for the management of aquatic ecosystems in the Tonle Sap Lake

Results of Prioritization of Long-listed Potential Interventions (Draft)

(1) Terrestrial

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Capacity development of the staff of FA and GDNCP	Dispatch of expert	High	High	High	High	Medium	None	High
Assistance in the trans-boundary biodiversity conservation in the north-eastern plateau of Cambodia and the neighboring countries	Tech. cooperation type Project	High	High	Med.-High	High	High	Difficult to coordinate	High (but may need more assessment)
Assistance in strengthening the protected area management of the protected forests and protected areas in Cardamom Mountain Ranges	Fin. assistance (or Dispatch of expert/JOCV	High	High	Med.-High	High	Medium	None	Medium - High
Assistance in the registration of the remaining evergreen forest in the central lowland as PF	Development Study	High	Medium	Med.-High	Med	Medium	There may be land conflict issue.	Medium
Assistance in strengthening the management system in Virachey National Park in Rattana Kiri	Tech. cooperation type Project	High	Medium	Med.-High	Med	High	It may be difficult to maintain the sustainability.	Medium

(2) Freshwater

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Capacity development of the stakeholders (MOE, FiA, private fish operators and communities) for sustainable use and management of the core areas of the Tonle Sap Biosphere Reserve	Technical cooperation type Project	High	High	High	High	Medium	None	High
Capacity development of the staff of FiA for collection and set-up of the biological baseline data in selected fish sanctuaries and the spawn/breeding areas in the upper part of the Mekong River	Development Study/Tech. cooperation type Project	High	High	High	Medium	High	None	High
Assistance in the formulation a management plan of the Tonle Sap Regions to protect/manage the Tonle Sap Lake resources in a sustainable manner	Development Study	High	Med	Med.-High	Medium	Medium	It may be the next step after collection of baseline data.	Medium - High
Assistance in strengthening community fisheries communities around the Tonle Sap Lake	Fin. assistance / Tech. cooperation type Project	High	Medium	Med.-High	Medium	Medium	Some activities overlap with the on-going ADB project.	Medium

(3) Coastal

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Priority
Assistance in the rehabilitation and protection of mangrove forests	Tech. cooperation type Project	High	High	Med.-High	High	Medium	There may be land conflict issue.	Medium
Assistance in strengthening community fisheries communities around the Tonle Sap Lake	Tech. cooperation type Project	High	Medium	Med.-High	Medium	Medium	Other donors have supported over years.	Medium

7. Activities in the Following Month

The list of the possible programs/interventions given above is the initial ideas made by the Undersigned based on his field work between May 24 and June 11, 2010. Due to time constraints, he was not able to analyze all the data collected or fully exchange ideas/opinions on the possible interventions with all the stakeholders concerned during his stay. Hence, this field report should be regarded as the initial ideas based on the quick reviews of the relevant sectors.

In the in-country assignment in July 2010, the Undersigned will re-examine the initial ideas further reviewing the collected data and exchanging the ideas with relevant development partners working in the field of biodiversity conservation in Cambodia as well as JICA HQ. In the end, the survey team will submit the final report with the proposed project ideas and recommendations to JICA HQ in the end of July 2010.

Yoji Mizuguchi

Data Collection Survey on Biodiversity Conservation
in Asian and African Regions

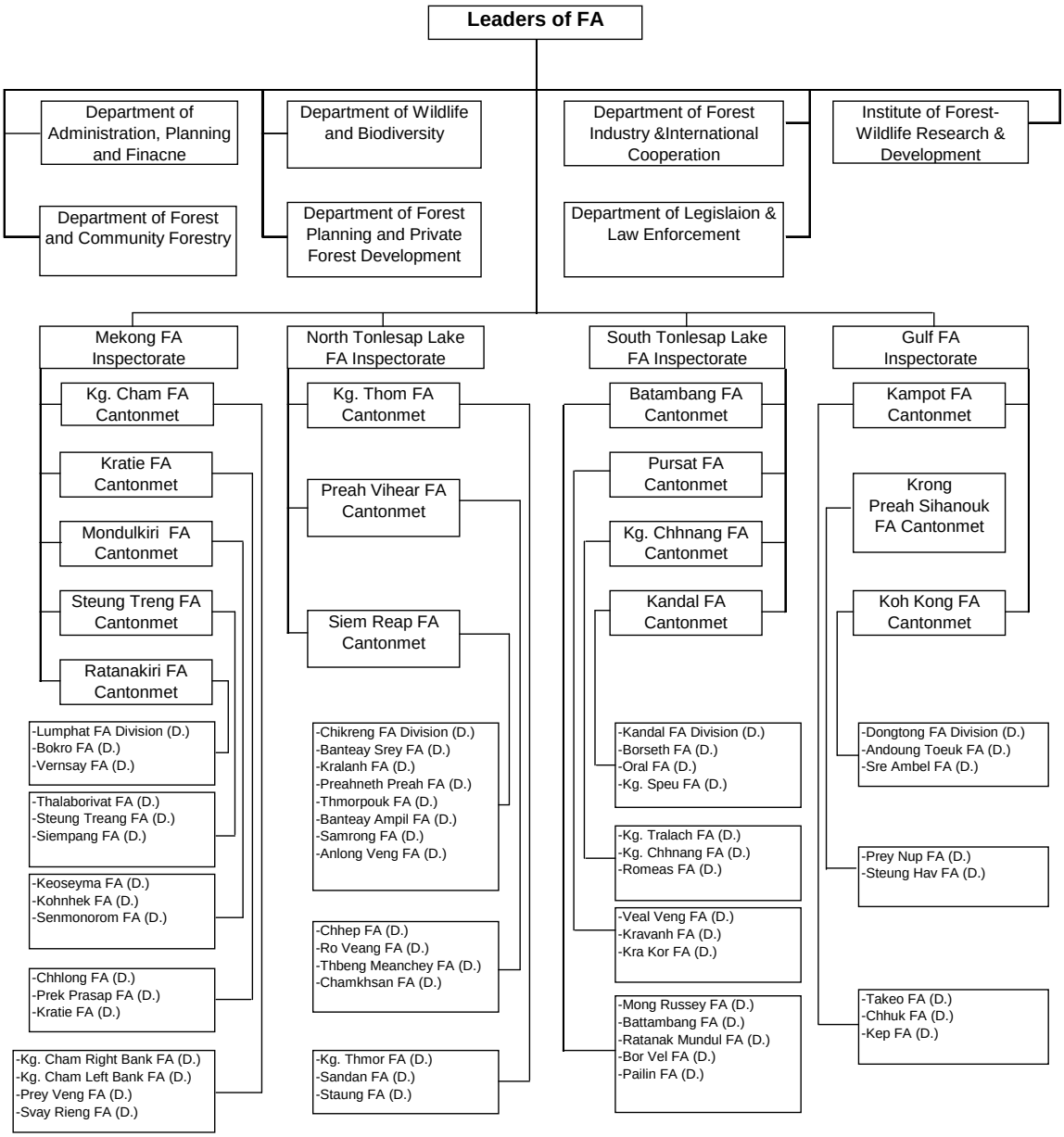


Figure 1　Organizational Structure of FA

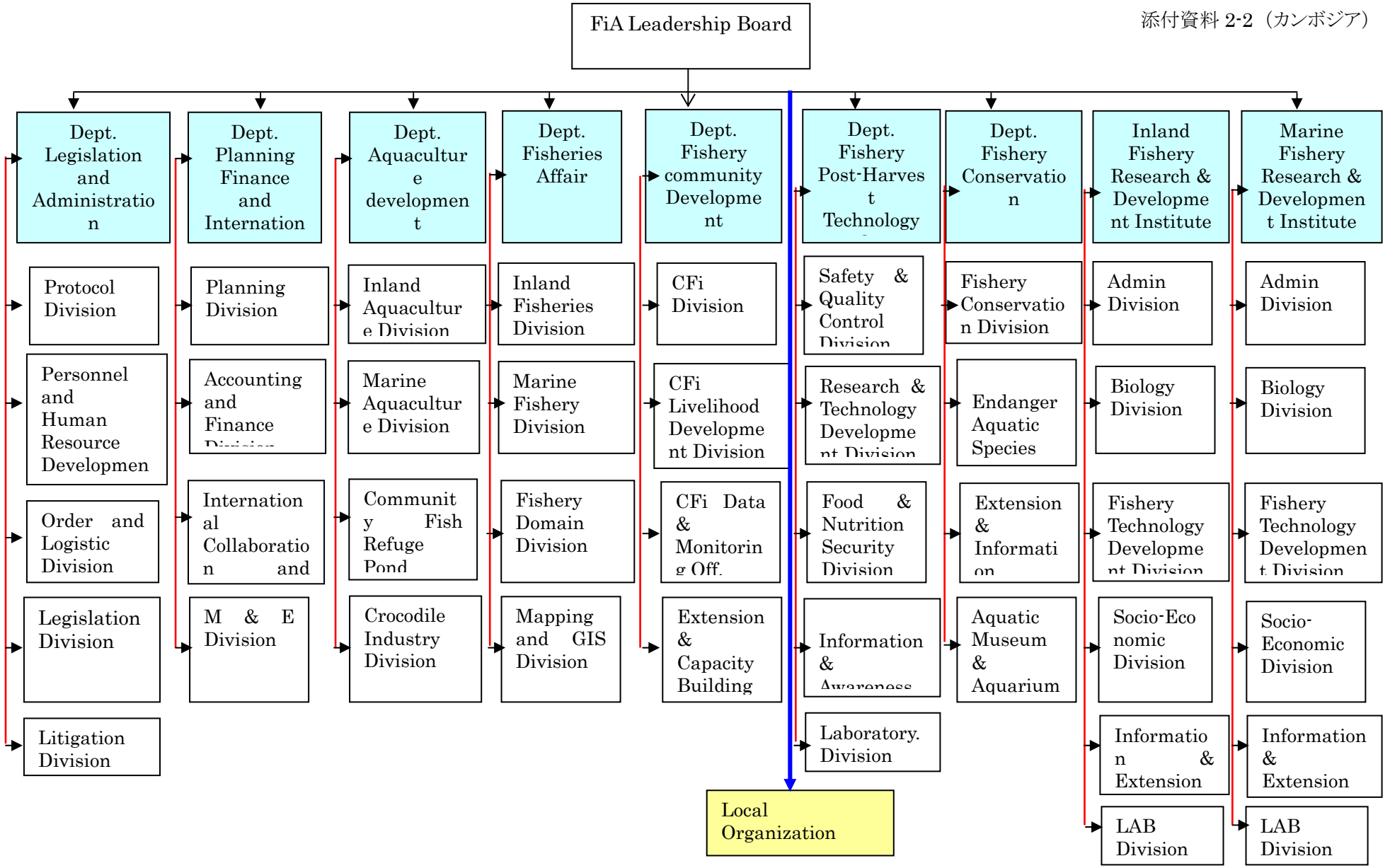


Figure 2　Organizational Structure of FiA

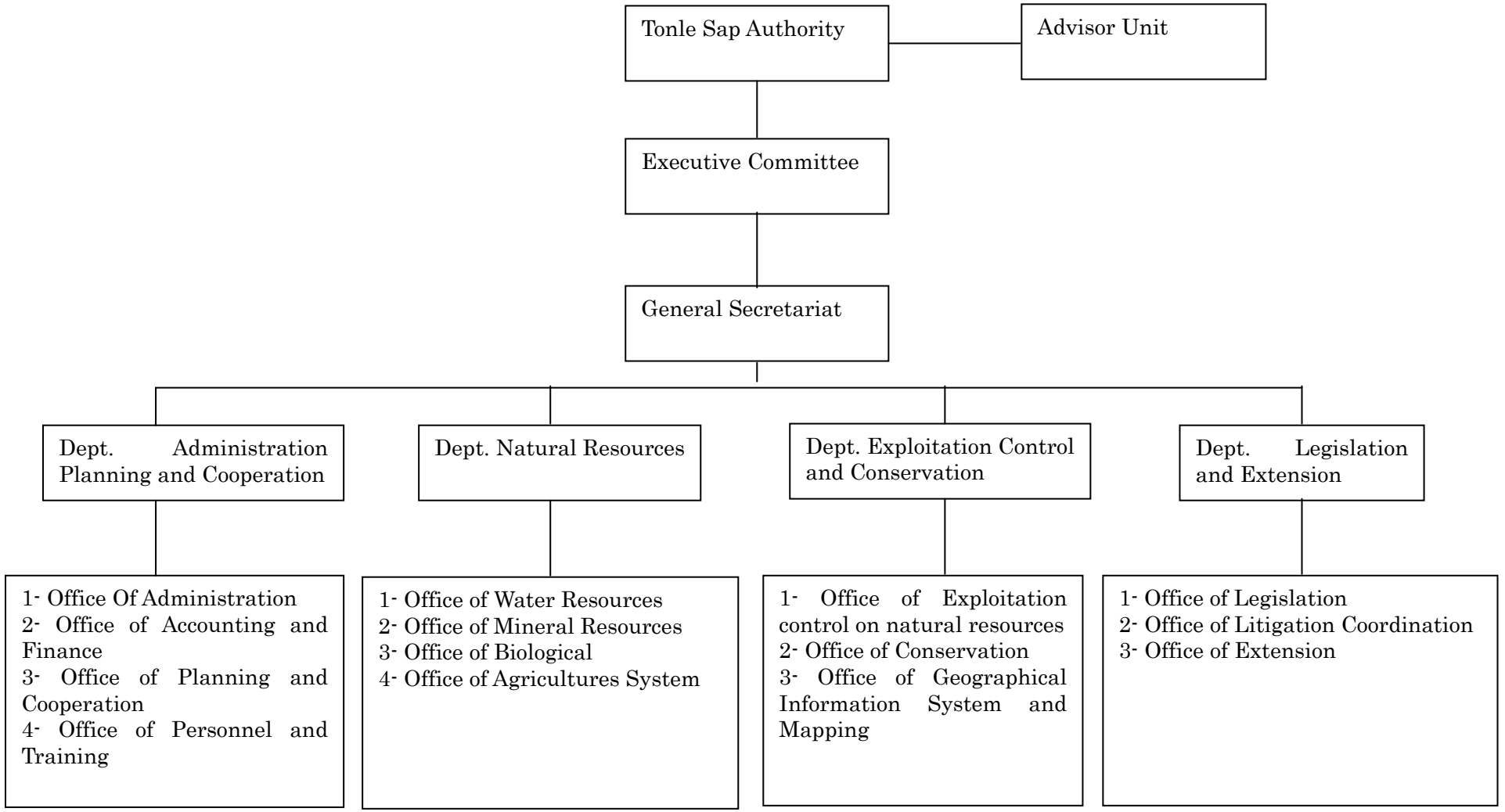


Figure 3　Organizational Chart of Tonle Sap Authority

Meeting / Field Memo

No. of Memo: 1	
1. Topic/Purpose	Meeting with General Department of Administration for Nature Conservation and Protection
2. Participants	Mr. Sokheng Novin (Director of Department of National Park), Mr. Sophal Sreng (Head of Office of International Cooperation), and Ms. Ly Sophorn (Deputy Director of Department of Administration, Planning, Accounting and Finance)
3. Place	Department of National Park, 3rd floor of MOE Building
4. Date & Time	May 25, 2010

5. Points of Discussion/Observation

(1) Cambodia proclaimed 23 protected areas by the royal decree in November 2003. The 23 protected areas are composed of seven (7) national parks, ten (10) wildlife sanctuaries, three (3) protected landscapes, and three (3) multiple use areas. On top of the 23 protected areas, there are three (3) ramsar sites and one (1) biosphere reserve with three (3) core biosphere areas.

(2) Protected Area Law was enacted in 2008. The law stipulates that the protected areas shall be zoned into four (4) zones, namely, i) core zone, ii) conservation zone, iii) sustainable use zone, and iv) community zone.

(3) MOE has tried to involve local communities in management and conservation of protected areas in partnership with international and local organizations (donors and NGOs). A total of 84 community protected areas have been established in the protected areas so far. The community protected area is the part of the protected area to be managed by local communities who exchange a long-term agreement with MOE on management and protection of the assigned area. The agreement gives local communities the legal basis for their use of land as well as resources but at the same time obligates them to protect the assigned area and resources in accordance with the relevant legislations.

(4) Several NGOs have worked with MOE for the establishment of the community protected areas. MOE is currently preparing the guidelines (Prakas) on the implementation of community protected area based on the results of three years pilot activities.

(5) Zoning was only made in three protected areas (Phnom Prich WS, Phnom Samkos WS, and Virachey NP) so far. However, no zoning map has yet to be legally approved by sub-decree.

(6) There used to be a WB project in Virachey, named Biodiversity Protected Area Management Project (BPAM Project). The project was completed in 2008 and not extended or succeeded by its phase-2 project. Accordingly, there was a study planned on the assessment of mining potential in the area and WB did not agreed on the conduct of the study.)

(7) There are several actors currently working in the protected areas in the country, such as:

- FFI in Phnom Aural WS and Pnhom Samkos WS
- WCS in Kulen Promtep WS
- WWF in Phnom Prich WS and Lomphat WS
- UNDP and ADB in Tonle Sap Biospher reserve
- NGO founded by Anjelina Jory in Samulat MUA
- NGO in Botum Sakor NP

(8) DNP (Department of National Park) is seeking the assistance in managing the Virachey National Park, especially in: i) implementing the management plan, ii) carrying out a biological research, and iii) protecting the national park.

(9) DNP prepared a proposal of protecting forests and national parks in the trans-boundary areas between Cambodia and Lao PDR (including Virachey NP) and submitted it to ASEAN Center for Biodiversity (ACB) before. But ACB did not take up the proposal.

(10) It seems difficult to work in the trans-boundary between Cambodia and Thailand since there is still a border conflict between the two countries at present.

6. Notes/Issues: None

(1) A further follow-up data collection and discussions will be carried out.

Meeting / Field Memo

No. of Memo: 2	
1. Topic/Purpose	Meeting with Forestry Administration
2. Participants	Mr. Hong Sun Tra (Deputy Director of Department of Forestry Industry and International Cooperation), Ms. Hort Ainunn (Department of International Cooperation), Mr. Pak Chealy (Head of Office of GIS and Remote Sensing)
3. Place	FA
4. Date & Time	May 25, 2010

5. Points of Discussion/Observation

(1) There are two protected area systems in the country, i) protected areas under the jurisdiction of MOE and ii) protected forest managed by Forestry Administration. The former were designated by the royal decree in 1993 without any researches in the protected areas, while many of the latter were recently proclaimed by the sub-decree based on the field researches on biodiversity in the respective areas.

(2) In fact, some of the protected areas were occupied by anti government groups in 1993. Since the government was not able to touch such areas, the areas were designated as protected areas.

(4) The Protected Area Law stipulates that the protected area shall be approved by the sub-decree. In a sense, there is no protected area legally approved by the sub-decree in accordance with the Protected Area Law so far.

(5) A simulation research on the biodiversity conservation intensity projected that most of the biodiversity intensive areas in the Mekong regions may disappear. Some in the borders between Cambodia and Lao PDR, Cambodia and Vietnam, and Lao PDR and Vietnam may remain. In a way, they can be considered as the core areas for the ecosystems.

(6) In Cambodia, there are many IBAs and more than 600 bird species inhabit the country.

(7) Forestry Administration (FA) is the focal point of CITES as well as the leading agency for Convention on Biodiversity Conservation.

(8) Major actors that are currently working in the field of biodiversity in the country are:

- Wildlife Alliance Southern Cardamonms PF and Botum Sakor NP
- Flora and Fauna International in Phnom Samkos WS
- Conservation International in Central Cardamoms PF
- WWF in Mondul Kiri PF and Phnom Prich WS
- WCS in Seima PF
- WCS and ITTO in Preah Vihear PF
- UNDP and ADB in Tonle Sap Biospher Lake
- DANIDA/IDRC/IUCN in Peam Krasop WS

(9) FA expects Japanese ODA support in the forestry and biodiversity conservation sectors according to the Green Mekong Initiatives.

(10) Department of Wildlife and Biodiversity Conservation, FA considers expects JICA to provide its assistance to the following aspects:

- Capacity development of the staff (including rangers) and local communities in biodiversity conservation
- Infrastructure development in the protected forest, such as access road, guard station, ecotourism center, etc.

(10) It is important to involve local communities in the management of protected forest/area and establish a mechanism to generate substantial benefit/income for local communities. (11) In many projects assisted by international organizations, most of budgets allocated to the project are used for remunerations for foreign experts and only limited funds are allocated for the field activities and development activities in the field. More money should be used for actual development in the field.
6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 3	
1. Topic/Purpose	Meeting with the Project on Capacity Building for the Forestry Secotor, Phase II
2. Participants	Mr. Takayuki Sato (Chief Advisor), Ms. Junko Koumoto (Community Forestry II), Mr. Makoto Fukuyama, (Community Forestry)
3. Place	Project Office
4. Date & Time	May 26, 2010 AM 8:00-9:00

5. Points of Discussion/Observation

(1) The project activities are composed of training of FA staff on plantation establishment, silviculture techniques, forest planning and community forestry and implementation of field projects on community forestry in 7 villages in 5 districts.

(2) The field project aim to assist the FA field staff and local communities in the fulfillment of the requirement for community forestry in accordance with the sub-decree of community forestry.

(3) One project site has faced the difficulty in determination of the boundaries of community forest area. There are some overlaps in land use with land concession as well as private users.

(4) Demarcation of the permanent forest estate (forest land) is one of the big challenges that FA needs to tackle. The government policy states that about 60% of the total land in the country should be classified as the forest land. However, many land concessions have been issued recently across the country, especially in Kompong Speu, Rattana Kiri, and Mondul Kiri. It might be difficult for the government to secure 60 % of the country area for the forest land.

(5) Although the demarcation of the forest land is one of the top priorities in the National Forestry Program, which was recently finalized by the government, it would years or over a decade to delineate the boundaries of all the forest lands in the country.

(6) As the pressure on the land has become high, local communities are attracted to the community forestry scheme so as to secure the land tenure of their land.

(7) The strengthening of law enforcement is quite important for conservation of forest and biodiversity. The current major issues on law enforcement are the lack of transportation means, limited capacity of the rangers, and low salary of the staff.

(8) Protected areas are managed by MOE, while protected forests are managed by FA. The major roles of the cantonment of FA are the management of the protected forests and control of illegal activities.

(9) In principal, there is no local community residing in the protected area. However, the customary use of forest resources by local communities living in the areas adjacent the protected forest is allowed.

(10) Since the management of the protected forest by FA is not sufficient, the Wildlife Alliance have hired rangers by itself to protect the protect forest in Kho Kong Province.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 4	
1. Topic/Purpose	Meeting with Coordinator of NFP
2. Participants	Dr. Sokh Heng (Coordinator of NFP / Deputy Director of Institute for Forest and Wildlife Research and Development)
3. Place	FA
4. Date & Time	May 26, 2010, 10:30-11:30

5. Points of Discussion/Observation

(1) A total of six programs are proposed in the National Forestry Program (NFP), which was finalized recently. The is a sub-program relating to biodiversity conservation under Program 2: Forest Management Program. The sub-program is named "Conservation and Wildlfe Resource Conservation."

(2) The NFP does not clearly state the priority program, but the program/sub-program listed at the top of the programs/sub-programs is given high priority. In fact, the demarcation of forest boundaries is the top priority task among other tasks.

(3) The protected forests cover about 1.5 million ha of the land. There are still many things to do with regard to the management of the protected forests, such as i) measurement of carbon stock in the protected forests, ii) wildlife researches, iii) capacity development of the staff, iv) field implementation of those activities, and v) management of protected forests in coordination with local authorities and other departments.

(4) The NFP also has a program on capacity development: Capacity Development and Research Development Program (Program 5). The program is comprised of three sub-programs: i) capacity development, ii) research development; and iii) extension.

(5) In order to formulate the NFP, a taskforce composed of a wide range of stakeholders was formed. Since the NFP covers several facets in the forestry sector, a similar type of organization is required for implementation and monitoring of the NFP in a coordinated manner. Technical Working Group of Forestry and Environment (TWG-E&F) agreed to keep the taskforce for implementation of the NFP as a secretariat.

(6) For implementation of the NFP, a five-year work plan will be formulated. Since some activities were already implemented by the development partners, the five-year plan will be prepared in line with the existing activities.

(7) DANIA plans to assist FA in the identification of the potential areas for community forestry.

(8) No one from MOE has participated in the process of formulating the NFP. It is not easy to coordinate with MOE.

(9) The limited number of the staff and lack of capacity of the staff are the main concerns over the management of the Institute for Institute for Forest and Wildlife Research and Development.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 5	
1. Topic/Purpose	Meeting with Taskforce for combating climate change in FA
2. Participants	Mr. Hour Lim Chhun (Deputy Director of Department of Forest Industry and International Cooperation), Mr. Chea Nareta (Member of REDD Taskforce/Department of Forest and Community Forestry)
3. Place	FA
4. Date & Time	May 26, 2010 PM 2:30 – PM 4:00

5. Points of Discussion/Observation

(1) A taskforce was formed with participation of FA, MOE, MLMUPC, and some NGOs as observers. The main activity of the taskforce for combating climate change in FA is to prepare a REDD road map with the assistance from UNDP/FAO.

(2) FA is currently implementing three REDD pilot projects with the assistance of NGOs and private companies for the measurement of the carbon stocks and preparation of a PDD.

- Odder Meanchey Province: REDD+CF Project (13 CF sites supported by PACT and Clinton Climate Initiative (CCI))
- Mondul Kiri Province: REDD + Conservation Project
- Siem Reap Province: REDD+CF Project (2 CF sites supported by CCI)

(3) In the project in Odder Meanchery, a PPD was already prepared and approved in accordance with CCB standard, while that based on VCS is under preparation. By the end of 2010, both documents will be ready. The project in Mondul Kiri is in the process of the project preparation and that in Siem Reap has just started.

(4) In the project in Siem Reap, the following activities have been carried out so far: i) capacity development of communities to enforce the law, ii) assistance in the preparation of forest management plan, and iii) livelihood development through training of local communities on possible livelihood options. In addition, the project is also planning to develop a sub-national MRV system covering three provinces (Odder Meanchy, Siem Reap and another province).

(5) The benefit sharing mechanism between FA and local communities has not been discussed yet. Local communities have expected cash income from the protection of CF area. The interviewee showed the personal opinion that at least 50% of the credit should be allocated for the benefit of local communities.

(6) There is a sub-decree defining that FA has a right to sell carbon credit. In order to make a CF+REDD project sustainable, it is crucially important to establish a reasonable benefit sharing mechanism with mutual agreement with local communities.

(7) MOE also has an office for combating climate change. In general, MOE focuses more on adaptation measures, while TF of FA focuses on mitigation measures.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 6	
1. Topic/Purpose	Meeting with Department of Community Forestry, FA
2. Participants	Mr. Meas Makara (Director of Department of Forestry and Community Forestry), Mr. Long Raranakoma (Deputy Director of Department of Forestry and Community Forestry), and Mr. Pak Chealy (Deputy Director of Department of Forestry and Community Forestry)
3. Place	FA
4. Date & Time	May 27, 2010 AM8:00-09:00

5. Points of Discussion/Observation

(1) Major difficulties in the implementation of community forestry are to: i) take approval from the government (Prime Minister) for registration, ii) identify the boundaries of CF area, and iii) get support from the provincial government in some provinces.

(2) As of now, a total of 124 CF communities have been registered and another 460 sites are in the process of registration.

(3) Major limitations/constraints on the application of community forestry are: i) the quality of local NGOs (e.g., lack of coordination with local government, overemphasis on political advocacy, and lack of technical knowledge), ii) lack of human resources in the local offices of FA, iii) land conflict with economic development projects and concessions, iv) lack of sustainability after the NGO's assistance for a limited time, and v) long process for CF approval/registration, especially for having the approval from PM.

(4) The NFP proposes that the process of CF registration should be revised by moving the first step (approval of PM) to the last step in the process. At the same time, the NFP targets that a total of 2 million ha of forest will be allocated for 1,000 community forestry communities by 2030.

(5) FA is planning to assess and determine the areas potential for community forestry with the financial assistance form DANIDA. To this end, the stakeholder meetings will be organized in the provinces.

(6) A national CF coordination committee has been recently organized at the central level. Development partners, relevant NGOs, and other stakeholders participated in the committee as members. The main aims of the committee were to: i) share information (e.g., experience and lessoned learned) among the members and ii) coordinate with each other.

(7) Similar committees will be organized be FA cantonments with participation of relevant government offices and NGOs working in the respective localities.

(8) In the future, CF will have the following four CF types: i) Community forest (a scheme to allocate mainly degraded/deciduous forests to a group of local communities), ii) Partnership forest (a scheme to allocate forest to a commune council for protection), iii) Community-based production forest (a scheme to high value forest to local communities), and iv) Community protected forest (a scheme to protect natural forest in a collaborative manner).

6. Notes/Issues:

DANIDA has supported FA, FiA, ad Ministry of Land in six provinces in the implementation of the government plans of the respective organizations/related sectors.

Meeting / Field Memo

No. of Memo: 7	
1. Topic/Purpose	Meeting with Department of Wildlife and Biodiversity (DWB), FA
2. Participants	Mr. Chheang Dany (Project Manager of ITTO project)
3. Place	FA
4. Date & Time	May 27, 2010 AM 10:00-11:00

5. Points of Discussion/Observation

(1) FA focuses on the conservation of ten priority forests in cooperation with development partners. At present, WWF and WCF are working in north-eastern part of the country, namely Mondul Kiri PF and Seima PF, respectively. In north part, WCF with ITTO engages in the management of Preah Vihear PF, while Wildlife Alliance is implementing the Biodiversity Corridor Project in Southern Cardamon PF. Conservation International (CI) has supported FA in the conservation of PFs in the Cardamom hills.

(2) One carbon credit project in Stung Treng is currently under preparation. There are three projects are being implemented or pipelined, namely, one in Odder Meanchey supported by CCI and EU, another one in Siem Reap, and the rest in Stung Treng supported by UNDP.

(3) About 1.5 million ha of PFs were managed by the Forest Administration (FA). In fact, FA has conducted the conservation activities in the field since 2000, although most of PFs were proclaimed by the sub-decree/parkas after 2003. However, the accomplishments made by FA are not satisfactory as compared with its ideal level. The conservation activities need to be further reinforced.

(4) One of the difficulties that FA has faced is the lack of budget for operations. A very small amount of money is used for management of protected forests. Accordingly, FA is given about US$ 4.0 million by donors and other international organizations annually, but about a half of the given budget is used for foreign experts hired by donors/international organization. US$ 2.0 million is not enough to manage 1.5 million ha of PFs.

(5) It is necessary to give due attention to conservation of the trans-boundary forests in order to conserve wildlife and biological diversity in the country.

(6) The positive effects/results generated through the activities of NGOs, which have been the main actors in the field of biodiversity conservation in the country, are: i) conservation activities in place; ii) livelihood improvement support provided to local communities; and iii) conservation momentum promoted. On the other hand, the negative thing is the high remuneration cost for foreign experts hired.

(7) The Department of Wildlife and Biodiversity (DWB) considers that the following aspects need to be addressed for improvement of management of protected forests.

- Lack of the number of staff (one staff covers about 20,000 ha at present) and lack of competent staff (or lack of staff's capability)
- Insufficient infrastructure set-up for management of protection forests and especially introduction of eco-tourism.
- Lack of a mechanism where sustainable forest management can be implemented
- Limited legislation on biodiversity conservation

(8) Local communities rarely reside within the boundaries of PFs since PFs used to be designated as forest concession areas.

(9) There is a need to reinforce the capacity of local staff and rangers concerned with protected forests. In particular, equipment and facilities of protect forests and training for local staff and rangers are

required.

(10) DWB developed a proposal for JICA according to Mekong Action No. 63 or Green Mekong Initiative.

(11) Birdlife, Japan visited the simpan area in Stung Treng Province in 2009 and reported to FA that a detailed research on biodiversity was needed for such an area.

6. Notes/Issues:

A questionnaire form was given to the officer of DWB in the meeting. The filled-out questionnaire form will be given to the survey team at a future date.

Meeting / Field Memo

No. of Memo: 8	
1. Topic/Purpose	Meeting with Wildlife Sanctuary Department (WSD), General Department of Nature Conservation and Protection (GDNCP)
2. Participants	Mr. Sy Ramony (Director of WSD)
3. Place	Office of WSD, GDNCP
4. Date & Time	May 27, 2010 AM 11:00-12:00

5. Points of Discussion/Observation

(1) The Wildlife Sanctuary Department (WSD) used to be the office under the Department of Nature Conservation and Protection before 2008. As the Department of Nature Conservation and Protection was upgraded to the general department, WSD also became the department separating from the National Park Department.

(2) WSD currently manages 10 wildlife sanctuaries, while the National Park Department (NPD) is responsible for managing 13 other protected areas, namely 7 national parks, 3 protected landscapes, and 3 multiple use areas.

(3) Major activities of WSD are to: i) manage and protect the wildlife sanctuaries as a law enforcement agency in the protected areas and ii) undertake researches and studies on flora and fauna in the wildlife sanctuaries.

(4) Each protected are has one PA director. A couple of PA directors are supervised by one cluster head and one deputy cluster head. A total of eight cluster heads oversee all the protected areas. The cluster head is regarded as Deputy Director of GDNCP in the central office, while the position of the deputy cluster head is held by the head/director of Provincial Department of Environment. By this arrangement, GDNCP can coordinate with the relevant departments/agencies when a national park has any problems, such as illegal exploitation and land use conflict with another sector.

(5) On the other hand, the PA director also coordinates with local authorities, such as the head of local government units (district government office and commune) and police authority to control the activities in the protected area.

(6) Several NGOs have assisted WSD in the law enforcement, information dissemination to and education of local communities, and mobilization/organization of local communities for the Community-Based Protected Area agreement (CPA agreement).

(7) A total 84 CPA agreements, which cover 93,339 ha of the protected areas and 15,796 households in 104 villages, have been registered so far.

(8) The following protected areas have assistance from the development partners for management.

- Phnom Sumkos Wildlife Sanctuary: FFI
- Botum Sakar National Park: Frontier
- Kulen Promtep Wildlife Sanctuary: WCS
- Lomphat Wildlife Sanctuary: WWF
- Phnom Prich Wildlife Sanctuary: WWF
- Phnom Aural Wildlife Sanctuary: To be confirmed
- Peam Krasop Sanctuary: IUCN
- Dong Peng Multiple Use Area: to be confirmed

(9) The protected areas in the north-eastern part of the country often have land-use conflicts with land concessionaires.

(10) The following are the issues to be addressed for improvement of the protected area management of WSD.

- Capacity development of the staff
- Assistance in researches in the protected areas

6. Notes/Issues:

A meeting to discuss the initial ideas on the potential projects/interventions will be organized in the second week of June.

Meeting / Field Memo

No. of Memo: 9	
1. Topic/Purpose	Meeting with Department of Convention on Biodiversity, MOE
2. Participants	Dr. Heng Chan Thoeum (Acting officer of the department)
3. Place	Office of the department, MOE
4. Date & Time	May 27, 2010 PM 3:00-4:00

5. Points of Discussion/Observation

(1) The department was used to be the office. It was recently upgraded to the department along with the department of climate change.

(2) Since the department was newly established. There is no written document showing its mandates. But generally the mandates of the department are: i) implementation of CBD, ii) coordination with relevant organizations in planning, designing, and policy making, iii) clearing house mechanism, and iv) agreements relating to biodiversity conservation, natural resource management and clean development mechanism.

(3) The priority should be given to "in-situ conservation" in biodiversity conservation. Land encroachment must be a big issue in the management of protected areas, especially Snoul Wildlife Sanctuary and Phnom Bokor National Park.

(4) WB, EU, UNDP, CIDA, and DANIDA are the major supporting organizations/agencies for the implementation of adaptation measures.

(5) The department for combating climate change is responsible for coordination with other department for REDD, while other technical departments (wildlife sanctuary, national park, etc.) can be directly involved in the implementation of a REDD project.

(6) There have been few progresses on the National Biodiversity Strategy and Action Plan (NBSAP) so far.

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 10	
1. Topic/Purpose	Meeting with Fisheries Administration
2. Participants	H.E. Srum Limsong (Deputy Director General of Fisheries Administration), Dr. So Nam (Director of Inland Fisheries Research and Development Institute)
3. Place	Office of Deputy Director General of FiA, FiA building
4. Date & Time	May 28, 2010 AM 9:00-10:30

5. Points of Discussion/Observation

(1) The Tonle Sap Lake is the core area for fish and bird species. Hence, MAF and MOE have tried to protect its core areas with the assistance from development partners. However, fisheries resources have been exploited by fishing over years.

(2) Flooded forest around the Tonle Sap Lake is the most important area for biodiversity conservation in the lake since it is the breeding and nursing area of fish. Despite its importance, the flooded forest has been deforested by cutting, conversion of land into a farm, and firewood collection.

(3) The rainy season is the breeding season for fish. The water depth becomes more than 9 meter in some part of the lake. Many fish comes to the lake to spawn in the rainy season. Likewise, the upper part of the Mekong River is also important for fish stock since there are several spawn areas for large fish (e.g., giant cat fish) and migrant fish species in the upper part of the Mekong River. Accordingly, more than700 species inhabit in the Tonle Sap Lake and Mekong River.

(4) Major threats to the freshwater ecosystem in the country are: i) land conversion and deforestation of flooded forests; ii) drought caused by climate change; and iii) construction of dams on the main stream of the Mekong River.

(5) Drought will change the hydrologic regime in the Tonle Sap Lake and the Mekong River basin. Change of flooding condition and pattern may affect the breeding season of fish and mobility of fish (migration pattern of fish). At the same time, the shortage of agricultural production caused by drought may increase fish catch by farmers as they rely on fishing for their livelihoods.

(6) FiA prepared project proposals on i) the study on the effects of climate change; and ii) the education program on the effect of climate change.

(7) A total of 469 community fisheries (CFis) have been established. Out of 469 CFis, 35 are coastal communities and the rest are freshwater fisheries communities. Accordingly, almost all the potential areas for CFis have already introduced CFi. Although a number of CFi were established, the management of CFi needs to be improved in terms of i) capacity of local communities to implement the management plan and ii) economic incentive/income to local communities involved.

(8) Management of mangrove is under the jurisdiction of FiA and MOE.

(9) The potential activities that FiA would like to request to JICA are: i) conduct of scientific researches on fish species and physical environment in fish sanctuaries in the Tonle Sap Lake and important spawn areas in the upper part of the Mekong River and ii) assistance in the improvement of the implementation and management of CFis.

(10) At present there are eight fish sanctuaries in the Tonle Sap Lake. There has been no research made in the fish sanctuaries. On the other hand, almost all the CFi communities are not active accordingly.

6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 11	
1. Topic/Purpose	Meeting with Community Fisheries Development Department, FiA
2. Participants	Mr. Pech Bunna (Deputy Director of CFDD, FiA)
3. Place	Office of CFDD, FiA building
4. Date & Time	May 28, 2010 AM 11:00-12:00

5. Points of Discussion/Observation

(1) A total of 479 Community Fisheries have been established. Out of 479, 299 CFis have exchanged the CFi agreement and 236 CFis were officially registered.

(2) There are 173 Cfis around the Tonle Sap Lake, of which about CFis have been supported by the ADB initiated project named the Tonle Sap Sustainable Livelihood Project, which has been implemented by the Ministry of Interior with financial assistance from ADB.

(3) In addition to the ADB-funded project, OXFAM has also supported 10 CFi communities in Kompong Thom. There are some other NGOs providing similar support to CFi communities.

(4) There is not support give to CFi communities in Kandal Stung, Pursat, Takeo, and Oddar Meanchey.

(5) Some information and data are available in the website of Tonle Sap Biosphere Reserve. (www. Tsbr-ed.org)

6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 12	
1. Topic/Purpose	Meeting with Reaserch and Community Protected Area Development Department (RCPADD), GDNCP
2. Participants	Mr. Srey Marona (Director of RCPADD), Mr. Meas Sothunvathanak (Chief of the office of CPA development)
3. Place	Office of RCPADD, MOE building
4. Date & Time	May 28, 2010 AM 15:00-16:30

5. Points of Discussion/Observation

(1) At present, many protected areas have been under threat of over-exploitation caused by local communities residing in and around the protected areas. It is quite difficult to stop them from using natural resources (NTFPs and firewood) in the protected areas since they significantly rely on the resources for their livelihoods.

(2) The main purpose of Community Protected Area (CPA) is to address the issue of conflict between socio-economic activities of local communities and biodiversity conservation in the protected area. The scheme of CPA aims to regulate the exploitation activities of local communities while allowing them to use natural resources in the protected area in a sustainable manner. Its concept is quite similar with that of community forestry.

(3) As of this moment, a total of 84 CPAs have been established with participation of 15,796 HHs in 104 villages across the country. The total coverage under CPAs is 93,339 ha.

(4) PA Law states the participation of local communities in management of the protected areas in Chapter 4. The law also states that local communities can use the natural resources only for domestic purposes in the sustainable use and conservation zones.

(5) Eco-tourism may be one of the necessary activities for improving the economic conditions of local communities. Eco-tourism activity will create opportunity for local communities to sell NTFPs and wild-fruits/agricultural products to tourists and to run a small business, such as restaurant and homestay.

(6) It usually takes two to three years to go through all the processes of CPA establishment (from community organization to registration). When mapping of the allocated area, field staff or an implementing body will conduct a ground truth survey with the forest cover map.

(7) There is a need to establish a database on PCAs so that the department could manage the status of PCA systematically.

(8) There are still many potential areas to introduce PCA, especially in Rattana Kiri, Cardamon areas, and Coastal area.

(9) Major difficulties in the implementation of CPA are: i) technical knowledge on zoning and ii) preparation of a 15-year management plan.

(10) One of the difficulties in working in the northern part of the country is the availability of NGOs/human resources who have experiences in working with ethnic minorities.

6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 13	
1. Topic/Purpose	Meeting with GIS unit, FA
2. Participants	Mr. Pak Chealy (Deputy Director of Department of Forestry and Community Forestry)
3. Place	Office of GIS Unit, FA building
4. Date & Time	May 31, 2010 AM 09:00-10:30

5. Points of Discussion/Observation

(1) The data that GIS unit handles are: i) status of forest; ii) forest cover maps in 96, 2002, and 2005; iii) forest concession data; iv) protected forests; v) CF communities; vi) forest classification; and forest statistics. The unit also has some data on social concession and economic concession. But most of them are managed by Department of Planning, MAFF.

(2) The major tasks of GIS unit are; i) data management; ii) preparation/creation of maps; and boundary demarcation.

(3) Accordingly, FA needs to demarcate the boundaries of the permanent forest estates as long as 12,000 km in total. FA demarcated more than 1,000 km-long boundaries as of now. DANIDA plans to support FA in the extending the demarcation of 400 km-long boundaries in 2010. There is still a need to have external support to facilitate the boundary demarcation in the country.

(4) The issues to be addressed on forest management are: i) conflict with economic and social concessions; ii) lack of zoning in the protected forests, iii) limited forest areas with clear boundaries; and iv) difficulty in making boundaries.

6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 14	
1. Topic/Purpose	Meeting with Development Partners and Members of TWG-FE
2. Participants	DANIDA, FAO, FFI, PACT, CI, WCS, AIDA, WWF
3. Place	Embassy of Denmark PM 14:00 - 16:00
4. Date & Time	May 31, 2010

5. Points of Discussion/Observation

(1) At present FA and FiA have the long-term strategic plans and the major funding institutions, such as DANIDA and ADB, have also coordinated with the strategic plans. JICA needs to review and coordinate with the plans.

(2) Biodiversity conservation in the Forestry Strategic Plan must be the most important reference. In fact most of the organizations working in the biodiversity conservation sector gave the comments on it for finalization. Although it is general.

(3) Database on biodiversity information in the countrywide, which can help the government understand the value and concept of biodiversity, would be useful. There is a need to look at the impact of climate change on biodiversity conservation.

(4) Climate change is the long-term issue that would cause effect to biodiversity, but the urgent issue on biodiversity conservation is deforestation and illegal wildlife trade.

(5) World Bank started the gap analysis in the protected area system three years ago but there has been no report submitted or shared so far.

(6) PACT has implemented a national community forestry program and is currently supporting 13 communities with training of local communities. It is the critical moment for promotion of community forestry since the legal framework of community forestry is in place and local communities can get the land tenure in the community forestry area legally. Since the middle of 2006 when the community forestry sub-decree was enacted, a total of 96 communities have received tenure right and 300 more are in the pipeline. At the same time, the government set a target of increasing community forestry agreements to cover 2 million ha in the country. PACT developed a standard training model for local communities to go through the legal process for community forest.

(7) DANIDA has supported the local FAs (cantonments) in six provinces (Mondul Kiri, Ratana Kiri, Kratie, etc.) in the development of the provincial development plans and planning to support them in the implementation. However, DANIDA can not cover all the aspects of the development plan and will put its focus on community forestry and livelihood support. It is also noted that a sustainable forest management program will be implemented in the western part of the country under the co-financing of DANIDA and GEF.

(8) DANIDA primarily focuses on community forestry (Objective 4 of NFP). Hence it would be significant complement to the existing activities, if JICA would support the aspects relating to biodiversity conservation and climate change issues, which is Objective 2 of NFP. There are less support in the field of biodiversity conservation.

(9) MOE should be the key player in forest protection, climate change, community forestry on the basis of REDD and biodiversity conservation. At present, the capacity level of MOE is not as high as FA is. Hence FFI has worked on the capacity development of MOE. In fact the support to MOE has been limited as compared to FA so far.

(10) One of the greatest impacts on biodiversity in the country would be the construction of dams on the main stream of the Mekong river. It would also adversely affect the livelihoods as well as nutrition intakes of local communities in the country. If JICA could work with the government to develop some alternatives or a mechanism to avoid the dam construction, it would greatly help the conservation of valuable biodiversity in the country.

(11) A recent WWF study on climate change reveals that the functions of the exiting flooded forests are the most effective measure to mitigate the impact on aquatic ecosystem in the country.

(12) The payment for environment services (PES) should be more addressed especially in Cambodia. There is a need to support the government in developing a policy or framework to move forward on the PES.

(13) FAO has not worked in the protected areas but worked for community forestry in 16 community forestry sites in the north eastern provinces including the development of training curriculum of the university and capacity development of FA. FAO is also implementing a carbon credit project on a regional level, which covers Indonesia, Thai, Laos, Philippines and Cambodia. In the project, the community forestry area is used for modeling of REDD.

(14) FAO will implement a regional-based coastal management project covering nine countries. The concept note on the project is being finalized. The project mainly focuses on mangrove rehabilitation in the framework of community fisheries.

(15) There is also an UN-joint program on cultural forest led by FAO in four provinces in the country.

(16) It is important for JICA to understand the process and aim of the NFP preparation. It has been prepared in close coordination with local FA offices and with the aim of developing the capacity of FA, especially those at the cantonment level. It is also important for JICA to work in the NFP framework. Hence it is recommended that JICA should look at the gap between the vision of NFP and the activities conducted/planned and focus on the improvement and acceleration of the current momentum.

(17) There have been a lot of works done on biodiversity conservation since 1998 and a series of documents prepared and researches on key species made so far. At the same time many cases of community forestry, which is effective in forest management as well as biodiversity conservation have been implemented in the field.

(18) In terms of management of fish sanctuaries in Tonle sap, CI is in the process of a review of fish sanctuaries in Tonle Sap with FiA. As a result of the review, we expect to have information of fish stocks, conditions of aquatic ecosystems, and management practices effective and ineffective in biodiversity conservation.

(19) There is also a need to strengthen the community fisheries communities especially around the fish sanctuaries, in addition to the research on how the activities in the fishing lots affect the fish sanctuaries.

(20) SRI has been increasingly introduced in the Tonle Sap region. SRI can produce a high yield of rice but at the same time cause water pollution of Tonle Sap Lake due to the excessive use of fertilizer and use of specific/banned agrochemical. Since Tonle Sap Lake has a quite unique ecosystem in the world and is in fact one of the biological hot spot, it is important to carry out a research/study on the biodiversity of the lake addressing the current interventions as well as the possible impacts made on the lake ecosystems.

(21) In addition, there is also a need to do a hydrological modeling for assessing the hydrologic changes

caused by the dam construction. It would help to know the water dynamics in the Tonle Sap Lake and potential effect in the flooded areas and the ecosystem in the lake and give the government useful information for decision making and cost-benefit analysis especially on a dam construction project in the basin.

(22) The main issue in biodiversity conservation in the Mekong region is to me the lack of coordination/cooperation among the sectors of the governments in the Mekong region. Many protected areas overlap with land concessions or government development projects such as mining and plantations in the region. Many NGOs have provided assistance in the field over years, but there is a need to put the focus on the policy level. Capacity development or establishment of a mechanism that would help the governments conserve the biodiversity and challenge the climate change issue at the same time should be one of the areas to be tackled.

(23) DANIDA has engaged in the establishment of community forestry communities over years. Based on such long experience, DANIDA is thinking of focusing its support on the maintenance of community forestry communities rather than the increase of new community forestry communities. In addition to the registration, preparation of a management plan, implementation of the activities planned in the initial years, and development of linkages with potential funding sources for continuation of the activities are key issues to be tackled to maintain the sustainability of community forestry. It is therefore advisable not to focus on the scaling up the community forestry area but to pay attention to the quality of the results in on the ground.

(24) It is important to work under the coordinating framework of TWG and to share the responsibilities, especially in the assistance community forestry. In fact. One of the issues that the development partners have to look at is the demarcation of forest boundary, which require a large amount of budget as well as time.

(25) In addition to the demarcation of forest boundaries, forest inventory is also one of the areas that DANIDA likes to expect the JICA's cooperation since JICA has expertise related to the subjects and the inventory needs a certain amount of investment.

(26) It is important to consider how to involve the private and informal sectors in the framework of combating climate change and sustainable development.

(27) In order to assist the government in making proper decisions, it is also important to value the ecosystems/biodiversity/natural resources including REDD and PES in the protected areas. There has been no nation-wide survey conducted on valuation of the protected areas so far though there have impartial assessments made in several places.

(28) The important issue to be addressed in community forestry is to enable local communities to manage the community area in a sustainable manner. Though they regard the forest within the boundaries demarcated as forest protected, but those outside the boundaries are often regard as valueless or areas for free exploitation. There is a need to integrate a mechanism to earn a certain benefit or value from the natural resources into the community forestry. Based on the experience the community forestry activities undertaken by RECTF, three years are not sufficient to capacitate local communities to develop a sustainable funding mechanism and make them understand the perception of community forestry.

(29) At present the main aim of the community forestry is to secure the land tenure for local communities.

(30) In the case of community forestry, the government just approves the community forestry land but not

village land. It might cause the future conflict on land tenure in the future. (31) We need to assist MAF in the preparation of a strategic land use plan. Although there is a good management plan on the ground, there are many cases where development programs take place in the protected areas. (32) The line ministries should come together and develop a integrated land use plan. However, the support from the development partners should be necessary.
6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 15	
1. Topic/Purpose	Meeting with Conservation International
2. Participants	Mr. Seng Baura (Country Director of CI)
3. Place	Office of CI
4. Date & Time	June 02, 2010 AM 9:00-11:00

5. Points of Discussion/Observation

(1) Conservation International (CI) was established and registered in Cambodia in 2001.

(2) Central Cardarmon Protected Forest used to be the forest concession area. After the forest concession moratorium, the area was abandoned, and then, CI worked with FA to designate the area as a protected forest. It was officially gazetted in 2002. Since then, CI has assisted FA in management and conservation of Central Cardamon Protected Forest.

(3) In the beginning, CI put its focus on law enforcement organizing 100 law enforcement teams in collaboration with FA rangers as well as police/solders. Recently, CI change the core approach from "regulatory" to "participation/community-based." Then, CI started the community engagement program, which introduces a scheme to provide i) agricultural extension services, such as ii) health care services, and iii) community development.

(4) In 2006, CI started the conservation steward program (CSP) in two communes, where local communities were involved in protection and conservation activities with payment. They have joined the patrol work and clamp down illegal activities, such as logging and hunting. A member who joins the patrolling can earn US$ 3-4/day from CI.

(5) In addition to the patrolling work, local communities participate in the preparation of a land use plan and the establishment of a commune natural resource committee.

(6) CI also implemented an awareness raising activity for children in four communities.

(7) In 2007, CI assisted FiA in management of one of the fish sanctuaries in the Tonle Sap Lake. Since the result of the assistance work was remarkable, CI plans to expand the same activity to other sanctuaries. In fact, CI agreed with FiA to support FiA in surveying eight (8) fish sanctuaries in the lake to grasp the physical conditions of the sanctuaries.

6. Notes/Issues: None

Field Survey Report for the Data Collection Survey on Biodiversity Conservation in Asian and African Regions

Vietnam

June 2, 2010

1. Outline of the Survey

1.1. Background of the Survey

Mankind heavily depends on biodiversity in our lives. Nevertheless, it is reported that the biodiversity on earth is in a critical condition as over 40,000 species become extinct every year due to various human activities, such as deforestation, over hunting, water pollution and others. Efforts to conserve biodiversity have been reinforced internationally after the adoption of the Convention on Biodiversity (CBD) at the United Nations Conference of Environment and Development in 1992. The Government of Japan has also actively worked on the conservation of biodiversity since then as a country that ratified the convention. This year is the last year of the 2010 biodiversity target adopted by the Conference of the Parties (COP 6) held in the Netherlands in 2002. Furthermore, Japan will host the tenth meeting of the COP in October 2010 as the chair country and is expected to play an important role in leading the activities on biodiversity conservation not only domestically but also internationally.

The Japan International Cooperation Agency (JICA) has successfully implemented a number of cooperation projects/programs on biodiversity conservation. Because of its long and successful achievements, the international community expects JICA to make more contributions, towards COP 10, to the conservation of biodiversity in developing countries. In particular, the countries in Asian and African regions need further assistance in biodiversity conservation since there are many biodiversity hot spots and untouched natural forests still remaining in the regions.

Given this background, JICA was determined to conduct a survey to collect and analyze relevant information/data concerning biodiversity conservation and forestry-related measures against climate change, identifying the needs for future cooperation/assistance in the same subjects in the Asian and African regions.

Following initial desk study and discussions with JICA, the following eight countries were selected from the possible 78 countries; four in Asian and another four in Africa:

- Vietnam
- Philippines
- Cambodia
- Lao RDP
- Uganda
- Botswana
- Ethiopia
- Tunisia

The selected countries are considered strategically important for biodiversity conservation in the regions and in need of JICA's interventions.

The field surveys consisted of numerous activities, including:

- Discussion of work plan with JICA branch office and relevant government organisations
- Interviews with relevant organisations for data collection
- Discussions on needs for assistance in biodiversity conservation and forestry
- Examination of possible project potential.

1.1. Survey Team

The survey team was composed of five consultants, with each visiting one or two countries to conduct the field surveys described above. The team members were assigned countries based on past experience, language ability, etc.

Name	Position	Responsible for
Yoji Mizuguchi	Team Leader	Cambodia & Philippines
Hideki Imai	***Co-team Leader for Asian region***	***Vietnam & Lao PDR***
Yayoi Yoshioka	Biodiversity/Climate Change (forest conservation) for Asian region	Philippines
Hiromi Yasu	Co-team Leader for African region	Uganda & Botswana
Pirran Driver	Biodiversity/Climate Change (forest conservation) for African region	Ethiopia & Tunisia

1.2. Schedule of Survey

The Survey in Vietnam was conducted between the 24th June and the 2nd June 2010. A Detailed breakdown of the survey activities is provided in **Appendix-1**.

2. Situation Analysis of the Biodiversity Conservation and Forestry Sectors

2.1. Current relevant policies, strategies and plans

Major policies and regulations related to biodiversity conservation are briefly described later.

2.2. Current legislative set-ups, regulations and guidelines

- ditto -

2.3. Present situation of the sectors

The data collection at focal agencies such as, Biodiversity Conservation Agency (BCA) under MONRE, Departments of Directorate Forestry under MARD has not collected enough. Major status of sectors related to biodiversity conservation is briefly described later.

2.3.1 Biodiversity conservation and threats

The situation of biodiversity conservation is described hearing basis form MARD, MONRE, donors, and international NGOs.

1) Special use forest (SUF)

The numbers and areas (ha) of approved/proposed special use forests are shown below:

Table 1 Categories and areas of approved protected areas in Viet Nam

Categories	Number	Area (ha)			
		Total natural land area	Forestland	Non forestland	Water surface
I. National Park	30	1,088,026	932,371	77,855	67,010
IIa. Nature Reserve	58	1,060,959	910,335	150,624	-
IIb. Species and Habitat Protected area	11	38,777	28,268	10,509	-
III. Historical, Culture and Landscape Protected area	45	78,129	60,555	17,575	-
IV. Scientific and experimental forests	20	10,652	9,925	727	-
Sub-total of approved areas	164	2,276,543	1,941,454	257,290	67,010
Sub-total of proposed areas	185	2,469,739	(ND)	(ND)	(ND)
Total	349	4,746,282	1,941,454	257,290	67,010
Data in 2008	233	3,365,490	2,880,056	418,424	67,010
Balance	116	1,380,792			

Table 2 Categories and areas of proposed protected areas in Viet Nam

Categories	Number	Area (ha)
		Total natural land area
IIa. Nature Reserve	30	1,088,026
IIb. Species and Habitat Protected area	68	1,231,397
III. Historical, Culture and Landscape Protected area	15	51,888
IV. Scientific and experimental forests	72	98,428
Total	185	2,469,739

Source: Department of Nature Conservation, Directorate of Forestry, MARD, 2010

- The total number of Protected Areas (PAs) is 349, total areas is 4,76,282 ha. Approximately 116 areas and 1,380 thousands ha are increased compared with data in 2008.
- MARD prepared “Sourcebook of Existing and Proposed Protected Areas in Vietnam, Second Edition” (Sourcebook) on 2004 for all SUF areas including proposed areas at that time (funded by World Bank and cooperating with the Embassy of Netherlands (CIDA) and some agencies).
- The Sourcebook includes several data such as, management history, topography & hydrology, biodiversity values, conservation issues, and conservation needs. However, reconnaissance of species was conducted by literature review, did not include lists of species and not updated yet.
- The present condition of treats to biodiversity is not comprehended, because there are some forest rangers managing the areas but they do not have enough capacity for biodiversity conservation, and monitoring system is not established.
- The areas of rich forests (primary forests) are still reducing.
- Threats to biodiversity in the SUF are i) encroachment/illegal hunting or logging, and ii) infrastructure development (dams, roads, etc.).

2) Marin Protected Area

- 4 marine protected areas have been approved and 12 marine protected areas are proposed in accordance with hearing from the Institute of Aquatic Economy & Planning (IAEP), Directorate

of Fisheries, MARD.

- The Table below shows status of Marine Protected Areas.

Table 3 Status of Marine Protected Areas

	Name of MPA	Province
1	Dao Tran	Quang Ninh
2	Co To	Quang Ninh
3	Cat Ba	TP. Hai Phong
4	Da Bach Long	Hai Phong City
5	Hon Me	Thanh Hoa
6	Con Co (2009)	Quang Tri
7	Son Tra Hai Van	TT.Hue
8	Chu Lao Cham (2004)	Quang Nam

	Name of MPA	Province
9	Ly Son	Quang Ngai
10	Hon Mun (2002)	Khanh Hoa
11	Nam Yet – QD Truong Sa	Khanh Hoa
12	Phu Quy	Binh Thuan
13	Con Dao	Ba Ria Vung Tan
14	Ohu Quoc (2005)	Tinh Giang

() shows approved year and they are under management (hearing from a member of the Institute)

Source of name of MPA: MAP of Marine Protected Areas in Vietnam 2010 (Institute of Aquatic Economy & Planning, Directorate of Fishery, MARD)

- "A report commissioned by the Sustainable livelihood in and around Marine Protected Areas in Vietnam" was prepared by MARD, funded by the Danish Embassy (DANIDA) through the Development cooperation for the Environment (CCE).
- The report describes a strategy for conservation of the marine protected areas with involving local people and improvement of their livelihood. The report also includes 5 sites report (Nha Trang Bay MPA, Cu Lao Cham MPA, Con Dao proposed MPA, Phu Quoc MPA, and Bach Long Vi proposed MPA). However, there are no data of biodiversity inventory.
- In accordance with hearing from IAEP and Science/Technology and Environment Department (STE), in the most of coral reefs in Vietnam have been got damage. However, they are still alive. The threats to the coastal zone ecosystem are over harvesting/usage of natural resources by fisheries, development activities (fish/shrimp ponds, reclamations, etc.). The over harvesting is caused by the poverty of the fisheries.
- In accordance with the Center for Natural Resources and Environmental Studies (CRES), there are three major mangrove forests in Vietnam, the first one is located in the Red River Delta and the second one is located around Mong Cai (city), and the third one is located in Mekong River Delta. The areas of mangrove forests are increasing recently by replanting and rehabilitationwith good management. However, there are only 18 natural mangrove forests remain in Vietnam and the others are associate (the quality of the mangrove forest is not high). The reasons of stress on the mangrove forests are, i) illegal cutting for establishment of aquaculture, ii) over harvesting for fire wood by the local people, iii)natural disaster, iv) infrastructure development, and v) land based pollution.

3) Wetland

- 2 wet land (Bau Sau (Crocodile Lake) Wetlands and Seasonal Floodplains, Xuan Thuy Natural Wetland Reserve) have been certified as the Ramsar convention office.
- In accordance with hearing from CRES, there are 68 major wetlands in Vietnam. But, the database of the wetlands is not established yet.
- Biodiversity Conservation Agency (BCA), Vietnam Environment Administration (VEA),

MONRE has no data base for wetlands.

- CRES, BCA, and international NGOs pointed out the high risk of the wetland biodiversity.

3. Stakeholder Analysis

3.1. Government organisations

There are three focal departments for biodiversity conservation issue in Vietnam, BCA-MONRE, DNC-MRAD, and Directorate of Fisheries – MARD.

1) BCA-MONRE

BCA is under VEA, MONRE. The numbers of staff members of divisions of BCA are shown below:

Table 4 Number of staff members of Divisions under BCA

Posision/Divisions	Number of Staff Memebrs
Director	1
Vice-Director	1
Biodiversity Conservation planning Division	5
Ecology Division	4
Species & genetic resourses & biosafety Division	7
Administraive Office	11
Office 79	5
Total	34

(Tasks)

- Responsible for preparation of the Convention on Biological Diversity (CBD), National Biodiversity Strategy Action Plan (SBSAP), COP10, Ramsar Convention,
- Management/coordination of law of biodiversity,
- Wetland/coastal zone diversity conservation

(Concerning recently)

- Mangrove forests/wetlands management
- Improvement of standards related to coastal zone/wetland/climate change adaptation
- Master Plan (M/P) preparation for integrated biodiversity management (on going)
- Legislation formulation, implementation of law of biodiversity

2) DCN-MARD

DNC is under Directorate of Forestry0MARD. The numbers of staff members of each division have not provided yet.

(Tasks)

- DNC is the responsible for biodiversity conservation issue and climate change issue in MARD.
- Data system formulation including GIS system
- Management of the Special Use Forest (SUF; National Park, Nature Reserve, Species and Habitat Protected area, Historical/Culture and Landscape Protected area, Scientific and experimental forests) (this includes mangrove forests, wetlands)
- Technical advice to National Park Management Offices and local management organizations

(Provincial People's Committee (PPC), DRAD)

(Concerning recently)

- Database formulation of SUF (GIS, Mapping) and updating existing database (Requesting data to all management offices of SUF is on going.)
- Management of SUF

3) IAEP-MARD, (STE)-MARD

IAEP (Institute of Aquatic Ecosystem and Planning) is under the Directorate of Fisheries, MARD.

The organization chart has not been provided.

STE (Science/Technology and Environment Department) is the one of the Departments under MARD, has responsibility for policy preparation, planning and supervising of management of the economic development. The planning of management system of Marine Protected Areas (MPAs) and the international coordination are one of their tasks.

(Tasks of IAEP)

- Their major task is development of economic planning. For this task, they have been established i) hydrology model, ii) cat fish aquaculture system, and they are developing GUS system. All of them are used as supporting tools.
- Management of the MPAs
- Sustainable use of marine resources (on-going project by the Vietnam Government budget)

The hearing was conducted to the both parties related to the costal zone management. Their concerning on the management of MPA is described Chapter 4.

3.2. Donors and international organisations

1) World bank

Mr. Daglas J. Graham had an interaction with the JICA Team and his opinions concern to the biodiversity issue in Vietnam were shown below:

(Mountain Area)

- The National Parks are facing high threat to biodiversity conservation. The major issues are:
- National Park system: Many infrastructures (dam, hydropower system, roads, etc) have been established in the national parks. Enhancement of the Government Policy is necessary to control this. UNDP would establish a system to control the development using GEF fund.
- Not good coordination between Forestry sector and Environment sector.
- (Related to marin ecosystem)
- The Vietnam Governmentally interest in marine ecosystem is not high.
- Over fishing is one of problems.
- Collaboration of International NGOs and National NGOs is effective for marine ecosystem conservation.

2) GTZ

Mr. Ha and Ms. Glz had an interaction with the JICA Team and his opinions concern to the biodiversity issue in Vietnam were shown below:

(GTZ approach on Protected Areas management)

There are three key issues as below:

- Capacity building of the forest rangers (communication with local people, education of people in the fields)
- Develop of the financial system of the State Government and the Local Governments.
- Coordination between he forestry sector and Environment sector

3.3. Others (NGOs and private sector)

1) BirdLife

Mr. Jonathan Charles Eames had an interaction with the JICA Team and his opinions concern to the biodiversity issue in Vietnam were shown below:

(Maintain Area)

- Illegal wildlife trading and illegal cultivation (dams, roads, etc.) in National Parks are major risks on biodiversity conservation.
- One of solutions is the management of National Parks by the National NGOs involving the local people. Basically, management of landowner is expected.

2) WWF

Mr. Dung and Ms. Mathews had an interaction with the JICA Team and his opinions concern to the biodiversity issue in Vietnam were shown below:

- Some unique species are in the central highland areas in Vietnam.
- Deforestation/degradation of forests impact on the downstream such as species and hydrology.
- The forest area is increasing by plantation in Vietnam, but the quality of forest is degreasing.

(Mountain Area)

- The project in the Southern part (Kan National Park) is on going. The difficulties of the project are i) separation of biodiversity areas without connection each other in the same National Park, ii) encroachment of local people based on poverty, iii) infrastructure development, iv) the forest ranger's activities are same as forest polices, v) shortage of Government budget, vi) not good coordination between Forestry sector and Environment sector, and vii) unclear responsibilities of each organization of the Vietnam Government.

(Coastal zone)

- One of the biggest impacts on the biodiversity is aquaculture (shrimp).
- Soil erosion is high risk for mangrove forests.
- The impact by the upper stream areas on the downstream, such as lower change of river flow. It impacts on mangrove forest. And degradation of mangrove forest introduces big damages by the climate change.

3) IUCN

Mr. brunner had an interaction with the JICA Team and his opinions concern to the biodiversity issue in Vietnam were shown below:

- The condition of biodiversity in Vietnam is very serious.

(Protected Areas)

- Killing of wildlife in Protected Areas is not controlled (for example, rhino)
- One of solutions is supporting small scaled National NGO, it reduce the cost much and effective much.
- Some of endemic species are also facing high risk without evidence to be conserved.

(Coastal and Marine zone)

- It is effective to support the Government in long term.
- As same as the Protected Area, small scale National NGO is much effective to solve the issue at coastal/marine zone.

4. Needs Assessment

4.1. Policy direction

4.2. Potential interventions required

[Biodiversity Conservation Program]

1) Database establishment Project

Most of the database related to the biodiversity conservation is spread to several governmental organizations in accordance with the assessments to three focal Departments in MARD and MONRE. The existing data were mainly the results of individual project. Therefore, nobody understand which database the whole Vietnam Government keeps, which organization keeps, and what kind of data system are existing. BCA is now planning to formulate the database of biodiversity in whole country, DNC is collecting data from all SUFs, and IAEP's GIS database establishment is on going.

1. In accordance with this situation, an integrated data base establishment and management system of the database should be necessary.

2. The existing databases would be collected and analyzed i) components, ii) category, iii) targeted area, etc. And mutual/lack of components/areas would be reviled.

3. Some sub-project would be formulated to fill out the lacks.

4. Management system would be established and the responsible organization will be determined to manage the database.

2) Wetland Management Project

The existing technical support projects for management of National Parks, forest areas, and some of costal zone have been conducted or some of them are on going. However, only a few supports have been conducted for the wetland management in Vietnam. The wetlands in Vietnam are studied to evaluate economically in 2003 by UNDP and UNEP funded by GEF. In 2005, the Study of overview of wetlands status was conducted by the Vietnam Environment Protection Agency (VEPA) and IUCN conducted with contribution by Sida. In accordance with the overview study, 10 caostal wetland sites are listed as the highest value in Vietnam named, (1 Tien Ye Estuary, 2 Back Dang Estuary, 3 Van Uc Estuary, 4 Ba lat Estuary, 5 Kim Son Tidal Flat, 6 Tam Giang-Cau Hai Lagoons, 7 Tra O Marsh, 8 Dong Nai Estuary, 9 Tien Estuary, and 10 Southwest Ca Mau Tidal Flat.

In the past 5 years, Vietnam has developed rapidly. Therefore, the overview should be review again. And the technical cooperation would be necessary for management at the evaluated sites.

3) Costal zone management Project

There are not enough database of the coastal zone as same as the situation of wetlands. However, IAEP has proposed 16 Marine Protected Areas and 4 of them have been approved and under management. Technical support project for management on Chu Lao Cham MPA has started funded DANIDA. Howver, the other three MPAs (Con Co, Hon Mun, Ohu Quoc) are under management without support and they are required to provide the technical support.

4) National Park management Project

DNC managed the 30 national Parks. In accordance with needs assessment, there are some technical supports have been conducting such as JICA project at Bidoup-Nui Ba Natinal Park, and WWF's Project. However, the National Parks which includes costal zone such as, Ba tu Long Natonal Park, Cat Tien National Park, Com Dao National Park are still necessary to support the management.

5) Necessary support components for 2) to 4) Projects

The proposed projects 2) to 4) are the technical assistant support Projects, except the Study on wetlands because it includes review study. And the risks on the biodiversity are almost same as i) encroachment by local people, ii) infrastructures impacts, and iii) weakness of normal people's awareness.

The necessary components in common with these projects are proposed as below:

A) Technical assistant for management with local people,

B) Improvement of the income or generation of additional income of the local people,

C) Raising the awareness of biodiversity,

D) Financial system development,

E) Monitoring system establishment, and

F) Coordination between different Government organizations.

(Meeting) / Field Memo

No. of Memo: 1	
1. Topic/Purpose	Inception report, schedule
2. Participants	Mr. Egashira (JICA), Mr. Mtsuzawa (JICA expert), Sutdy team (Imai)
3. Place	JICA Office
4. Date & Time	24 May 2010, 13:00 – 16:00

5. Points of Discussion/Observation

-Confirmation of the study schedule

The situation of the REDD activities in Vietnam was described by Mr. Egashira as follows:

(1) The on-going project (JICA study, conducting by JOFCA and JAFTA) aims to determine the proper lands for AR/CDM and REDD. The study plans to conduct the forest inventory with development of GIS system. The Finland's project for REDD is only a part of this.

(2) Most of the requirements for REDD would be carried out by the JICA study above. The components for the next step such as monitoring, reporting, and verifying would be necessary in near future. But these activities are also necessary to wait for the general agreements of methodologies, and the situation of them are not clear now. If possible, it is advised to recommend the necessary activities for the next step.

(3) The forest corridor: the ADB project might conduct that at near Hue. But the requirement is not so strong yet in Vietnam.

(4) The trans-boundary issue was discussed by FLEGT (Forest law Enhancement, Governance and Trade) in March this year.

(5) The assistance on the national park management: JICA (Bidoup Nui Bo National Park), GTZ, and WWF are conducting this issue.

(6) PES (Payment for Environmental Service): The pilot projects in Son-La/Lam Dong Province have been conducted. Vietnam side would like to expand the PES for forest area using these results for nation-wide. However, that does not include the biodiversity/carbon stock issues. Therefore, the MONRE would like to start PES for biodiversity. But it has not started yet.

(7) Mr. Matsuzawa suggested as follows: 1) the wetland management is not enough in Vietnam, 2) the conservation of the marine area was under-control of MARD before. But it was changed to MONRE, 3) the integrated management project for marine conservation, or coral reef project would be difficult for the Japanese experts.

(8) Wetland issues: 1) 4 Ramsar wetlands have been registered, 2) the wetland management project would be necessary as one of activities of climate change adaptation at the coastal area including the assessments and evaluations.

(9) The MONRE and DONRE have limited experiences of implementation and their history is short. Therefore, it is necessary to assist them, especially the technical assistances are required for them.

(10) Mr. Mtsuzawa recommended that there is positive possibility. The staff members of the Biodiversity Conservation Agency (BCA) is about 30, and most of half of them are working for the biodiversity conservation issue.

(11) The wetlands in Vietnam have potential for the tourism resource.

(12) Mangrove forest management: Some of NGOs conduct plantation and conservation activities in the Northern area. In case the villagers can get profit the activities can be continued but in the other case the activities would be stopped. There would not remain the lands for mangrove plantation, because the land-owners of the remaining lands do not want it. Also, there are many conflicts between mangrove plantation and developments.

6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 2	
1. Topic/Purpose	Meeting with the ICD (International Cooperation Department), MARD
2. Participants	Mr. Chau (Deputy Director), Mr. Minh, Study team (Imai, and Tran)
3. Place	ICD Office
4. Date & Time	25th May 2010, 08:30 – 09:30

5. Points of Discussion/Observation

After having a brief explanation of the outlines of the studies by the team member, the Deputy Director showed his appreciation about the Data Collection Survey on Biodiversity Conservation in Asian and African Region. Some highlights of the discussions are summarized as follows:

(1) Mr. Chau explained the structure of MARD. And he suggested the departments which the study team needs to visit.

Mr. Chau explained some points regards to the biodiversity conservation issues in Vietnam as below:

(2) About 73% of population in Vietnam are living in the remote areas. the agriculture is important for them. In this aspect, the climate change issue is serious. The climate change issue may lead food crisis, deforestation and it impacts on the ecosystem.

(3) MARD prepared the “issues of framework in National Forest for 2009 to 2020”.

(4) Mangrove forest and ecosystem is important. (5) Climate change issue: 1) adaptation is necessary, 2) C.C. would lead reduction of the quality/quantity of species in the forest areas, 3) C.C. leads forest fire, 4) C.C. leads sea level up and it leads reduction of food production. Finally, people would increase harvest in the forest and the forest areas would be reduced. Therefore, C.C. issue should be considered. (6) CITES: Vietnam has been receiving assistance from the World Bank, WWF, GEF, IUCN, Japan, USAid, Sida, Finland, German, and Swedish for the CITES. (7) Capacity developments for i) marine resource protection, ii) biodiversity conservation and iii) climate change adaptation are required. Especially, for the management of the coastal zone is required. (13) MPA (Marine Protected Area): MAP management in Nyatrang/Da-nang were assisted by collaboration of Dania, GEF-fund, USAid and IUCN. But, the other MPAs management need technical assistances, because i) villagers' understanding, ii) policies, and iii) experiences are limited. (14) Recommended issues for assistance: 1) Fish ecosystem conservation, ii) Greenhouse gas emission in Forestry section, 3) protection of tuna-fish. Mr. Minh recommended the issues for assistance as follows: (15) Forest/biodiversity conservation in the North-west area, (16) Assistance (especially funding) for the conservation of coastal forest area in the central area, and (17) Assistance for development project in Mekong Delta. The loan project was approved by MARD and Vietnam is waiting for decision of Japan.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 3	
1. Topic/Purpose	Meeting with the Department of Nature Conservation (DNC) of DoF, MARD
2. Participants	Mr Dung (Deputy Director), Ms. Hoa, and Study team (Imai, and Tran)
3. Place	DNC Office
4. Date & Time	25th May 2010, 09:35 – 11:40
5. Points of Discussion/Observation	

Some highlights of the discussions are summarized as follows: (1) DNC is a responsible department for biodiversity conservation in MARD. (2) Requests for information of Special Use Forests (SUFs) to each management unit were just sent. (3) NDC would like to revise/update the database of SUFs, because the present database is old (prepared in 2003). (4) Most of the boundaries of National Parks are clearly determined at the site. (5) JICA's forest conservation system is used for the SUF conservation too (allocation, guidelines, improvement of livelihood, etc.) (6) Trans-boundary issue: each country has own policy for this, and basically this issue should be treated by each country. The meetings with the neighboring countries were held once or twice. (7) DNC has no idea about corridor among the conservation areas. WWF and GTZ would assist this issue in some National Park projects.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 4	
1. Topic/Purpose	Meeting with the BCA of VEA, MONRE
2. Participants	Mr Cuong and 5 members, Study team (Imai, and Tran)
3. Place	BCA Office
4. Date & Time	25th May 2010, 14:00 – 16:00
5. Points of Discussion/Observation	
Some highlights of the discussions are summarized as follows: (1) BCA's functions: CBD cinvention, Ramsar wetland management, Cartagena protocol, management/coordination of laws on biodiversity conservation, preparation/update of NBSAP (2) MONRE has responsibility on wetland/coastal zone conservation. (3) The law of biodiversity says MONRE is the responsible organization for biodiversity conservation management, but actual managements of forests/SUFs/Marine are under-control by MARD. BCA (MONRE) is waiting for the decision by the Prime Minister (which organization has responsibility). (4) One Ramsar wetland has been registered, and BCA is preparing the other inland wetland to be	

registered.

(5) The inventory in wetlands is urgent and necessary for wetland management.

(6) MONRE (BCA) is preparing the master plan of wetlands whole Vietnam. It should become integrated and coastal zone protection.

(7) Standards for coastal area/wetland conservation, climate change needs to be improved.

(8) Master plan of biodiversity conservation management is under preparation by BCA and it would be finalized in 2011.

(9) For the preparation of master plan above, i) gene bank/botanical garden establishment, ii) GIS system, and iii) inventory (species/ecosystem) are necessary.

(10) BCA is preparing the outline of the master plan above and will provide it to the study team. However, it would not be provided at last.

6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 5	
1. Topic/Purpose	Meeting with the World Bank
2. Participants	Mr Graham (WB), Mr. Egashira (JICA), Study team (Imai)
3. Place	WB Office
4. Date & Time	27th May 2010, 10:00 – 10:45

5. Points of Discussion/Observation

Some highlights of the discussions are summarized as follows:

(1) WB is not conducting any assistance on the biodiversity conservation except GEF funding. No loadn project would be prepared for this field.

(2) The Tiger issue is important in world-side.

(3) A mission for monitoring system project for climate change will come to Vietnam.

Mr. Graham told his personal opinions as follows:

(4) Discordance between MARD and MONRE is big problem for the biodiversity conservation issue. It is the first priority to be done. WB invited the both parties once, but it did not work at all. It maybe impossible.

(5) Strengthening of policy dialogue is important for the national park conservation, because a lot of

roads and buildings have been constructed in the SUFs. (6) The climate change would impact on the marine ecosystem, but the impacts (sea level, sea water temperature, etc.) are unclear. Vietnam Government has no interest on this issue, and nobody can take actions. (7) The ecosystem in coastal area has been destroyed mostly by over-fishing.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 6	
1. Topic/Purpose	Meeting with the BirdLife
2. Participants	Mr Eames (BirdLife), Mr. Egashira (JICA), Study team (Imai)
3. Place	BirdLife Office
4. Date & Time	26th May 2010, 16:00 – 16:45
5. Points of Discussion/Observation	

Some highlights of the discussions are summarized as follows:

(1) Mr. Eames pointed out the significant issues on biodiversity conservation in Vietnam as follows: 1) illegal hunting/trading of wildlife, ii) illegal construction (hydropower, road, etc.) which are conducted by Vietnam Government. There is no cooperation among the ministries.

(2) The demand of oysters/shrimps are much high, and the pressure by over-fishing impact on coastal zone ecosystem.

(3) A monitoring project in the ADB project area (corridor initiative project) was contracted once but it was canceled.

(4) The trans-boundary issue: Laos and Cambodia would not want to take actions for this. The logs harvested in Laos/Cambodia are transported into Vietnam mostly. A MoU should be prepared, but no information.

(5) Assistance for the national NGOs is necessary. There is only a few national NGOs in Vietnam.

(6) Protected Area management is required. The private management by the land owners are the best way. In this case, a national NGO would manage the area with certificate from the Vietnam Government.

(7) Database of wildlife in Vietnam might be prepared by WWF or C.I.

(8) BirdLife prepared the database of endemic bird areas of the world (ISBN 0 946888337).

6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 7	
1. Topic/Purpose	Meeting with WWF
2. Participants	Ms Mathews, Mr. Dung (WWF), Mr. Egashira (JICA), Study team (Imai)
3. Place	WWW Office
4. Date & Time	27th May 2010, 9:00 – 10:00

5. Points of Discussion/Observation

Some highlights of the discussions are summarized as follows:

(1) WWF is conducting the pilot projects in the central highland (Hue, Quang tri, Quang Nam)

(2) The impacts of the activities in the upper-stream are significant to the lower stream.

(3) The forest condition in Vietnam is changing. Forest value/quality is getting lower than before. The natural forests are decreasing.

(4) WWF is conducting the management assistance project in the Southern area. The difficulties of this project are; i) population pressure and increasing the artificial forests cause the poor biodiversity. The core areas are scattered. The area is small and decoupled. Therefore, the biodiversity in those areas are getting poor and poor. ii) encroachment by plantation activities (Cashu, coffee) and hunting.

Mr. Dung described his opinions regard to the serious problem on the biodiversity conservation in Vietnam as follows: i) Poverty of villagers, especially ethnic groups, ii) development activities (dam, roads), iii) quality of forest rangers (they are similar to polices), and vi) limited budget for conservation.

(5) MONRE's capacity in both of central/local is limited. They have institutional and capacity problems are there.

(6) Mr. Egashira mentioned about REDD: The policy for the biodiversity conservation has been prepared. But, the implementation capacity of MONRE is limited too.

(7) The responsibility for the biodiversity in Vietnam is unclear, because MONRE insists they are the focal point but MARD is implementing the management.

(8) The treats in the coastal zone: i) increasing of aquaculture (shrimp), ii) mangrove forest degradation, soil erosion, iii) impacts by the degradation in the upper-stream leads problems in the coastal zones.

(9) WWF monitors i) change of the water level in Tore sup (Cambodia), ii) fish ecosystem in the Mkong river. (10) Trans-boundary: the meetings among the counties were held. But, that was just only initial stage and finished. (11) Basic data of ecosystem in Vietnam is scattered, because most of them were collected by project-wise.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 8	
1. Topic/Purpose	Meeting with DNC 0f DoF-MARD
2. Participants	Mr Dung, Ms.Hoa, Study team (Imai)
3. Place	DNC Office
4. Date & Time	28th May 2010, 9:00 – 10:00
5. Points of Discussion/Observation	
Mr. Dung told his opinions about some issues in the department to be solved as follows: (1) Protected Area (PA) management project: 1) Preparation of Master Plan for all PAs including database development (GIS), and 2) management capacity development in particular PAs. (2) Management of coastal area: 1) Database development, 2) management capacity development in particular PAs. (3) Wetlands and marine areas' conservation enhancement The responsible organizations for the National Parks (NPs) management are clarified as follows: 1) Management by MARD: the NPs which cover more than two provinces, 2) Management by Provincial People Committee (PPC) 3) Management by DARD, and (4) Sub-department of DARD. PPC decides the responsible organization for the management for (2), (3) and (4) cases above. (4) There are no information of infrastructure in PAs. (5) There are some special National Parks which includes coastal areas and marine area not only mountainous areas. These areas need to be given special attention for management, because the existing management (for the mountainous area) is not enough.	

6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 9	
1. Topic/Purpose	Meeting with Institute of Aquatic Economy Planning
2. Participants	Mr. Nam, Mr. Cuong and other 5 members, Study team (Imai, Trac)
3. Place	Meeting room of Directorate of Fishery, MARD
4. Date & Time	28th May 2010, 14:40 – 16:00
5. Points of Discussion/Observation	
Some highlights of the discussions are summarized as follows: (1) The responsibilities/functions of the institute are; i) preparation of inventory of biodiversity, ii) development planning of coastal area, and iii) establishment of Marine Protected Areas (MPAs). (2) There are 16 MPAs. PM approves the MPAs. 4 MPAs are under management at present. (3) The policy is necessary to be prepared for i) to conserve the fishery resources, ii) to control/limit the expanding the reclamation areas, iii) to conserve the coral leaves and mangrove forests. (4) Support the improving of the livelihood of the villagers can work for conservation of the biodiversity in marine area. The necessary supports (= weakness of the management organization) are mentioned by the institute as follows: i) to involve the people for the biodiversity conservation, because the local NGOs have not developed yet in Vietnam, ii) to generate the additional job to improve the livelihood of the villagers, especially the tourism development, iii) to enhance the governance/regulation, and iv) to develop the capacity for identification of species. (5) The inventory of 30 marine/coastal sites was carried out by ADB about 30 years ago. (6) Implementation of conservation of MPAs would be conducted by the same methodology of the one at the forest areas.	
6. Notes/Issues: none	

Meeting / Field Memo

No. of Memo: 10	
1.	Meeting with BCA

Topic/Purpose	
2. Participants	Mr. An (vice director of BCA), Study team (Imai, Trac)
3. Place	BCA Office
4. Date & Time	28th May 2010, 14:30 – 15:30
5. Points of Discussion/Observation	
Some highlights of the discussions are summarized as follows: (1) The wetland conservation is the first priority, because it is positioned as the top priority activity by the Government policy, and conservation of the wetland (coastal wetland) is important for the climate change adaptation. (2) There are 2 steps of MONRE's activities such as i) setting up the laws, ii) setting up the guidelines/regulations to implement the laws/policies. MONRE has drafted the law on biodiversity conservation and it has been approved by the Prime Minister. 2009, the Plan of MONRE has decided and promulgated. MONRE started the second stage.	
6. Notes/Issues: none	

(Meeting)/ Field Memo

No. of Memo: 11	
1. Topic/Purpose	Meeting with Centre for Natural Resources and Environmental Studies (CRES)
2. Participants	Mr. Thang, Study team (Imai, Trac)
3. Place	CRES Office
4. Date & Time	28th May 2010, 16:00 – 17:30
5. Points of Discussion/Observation	
CRES has conducted mapping of wetlands distribution (68 wetlands) and submitted it to BCA. Therefore, they can not provide the map. (But, BCA say they do not have it though). Some highlights of the discussions are summarized as follows: (1) The mangrove forests areas in Vietnam can be classified into three areas as; i) central coastal area, ii) Red River Delta area (the mangrove tree grows up more than 7m), iii) around Quảng Ninh province (the mangrove tree grows up to 5m only). (2) The necessary actions for mangrove conservation (community base conservation) are; 1) involve	

the local communities, ii) improve the local peoples' livelihood, iii) rise up the awareness of public/Provincial Government/District Government. (3) Cooperation with international agencies is necessary: i) training the local staff members (in Provincial, District, and community level, ii) introduce the techniques for management of ecosystem. (4) For reducing the logging the mangrove, energy reducing is necessary: i) innovation of firing staff, ii) generation of additional income, and iii) bio-gas generation. (5) Institutional enhancement is necessary to conserve the mangrove forest. For this point of view, setting up of a special team in communities is recommended. (6) CRES is concerning on i) Cangio mangrove forest (Natural Reserve), ii) financial support on re-planting mangrove, iii) multiple tree species forest to provide the habitat for aquatic livings (there are 18 mangrove species in Vietnam). (7) The mangrove forests are recovering at present by i) re-planting activities, and ii) rehabilitation with good management. (8) There are still some kind of stress/threats on mangrove forests such as, i) illegal aquaculture (shrimp), ii) over-harvesting for firewood use, iii) natural disasters, iv) infrastructure development, and v) labd based pollution. (9) CRES and Hanoi University have capacity to conduct inventory survey on mangrove forest. (10) Nyatran University has capacity to study on coral leaf, and Institute of Marine Environment and Natural Resources of Haiphone can study on coral leaf and see glasses.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 12	
1. Topic/Purpose	Meeting with GTZ
2. Participants	Mr. Hess, Ms. Eberd, Mr. Ha (GTZ), Mr. Egashira (JICA), Study team (Imai)
3. Place	GTZ Office
4. Date & Time	1st June 2010, 10:00 – 11:00
5. Points of Discussion/Observation	
Some highlights of the discussions are summarized as follows: (1) The GTZ's former approach focused on i) buffer zone, ii) capacity development, iii) education on people, and vi) forest ranger.	

GTZ's new approaches are follows:

(2) Sustainable finance system: It is necessary to develop a finance system to earn budget by Vietnam Government itself including the local governments. A rich Province such holds big company can prepare the budget. A poor province would establish eco-tourism.

(3) Capacity development of forest ranger: It is necessary to change their mind from as policeman to friendly to the local people.

(4) PA management under Province: However, the PA covers several provinces and the important PA could be managed by MARD.

GTZ showed some negative points for biodiversity conservation in Vietnam as follows:

(5) MONRE is a leading agency in accordance with law, but actual implementation is under control by MARD. The cooperation of them is good. This si one of key task.

(6) GTZ does not have information regards to trans-boundary issue among Vietnam, Laos, and Cambodia.

(7) One of weakness for the biodiversity conservation in Vietnam is lack of human resources on biodiversity research.

(8) PES could be used as financial source. GTZ H.Q. will start PES project on August.

6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 13	
1. Topic/Purpose	Meeting with DNC
2. Participants	Mr. Lien (Director of DNC), Mr. Dung (Vice Director), Study team (Imai, Tran)
3. Place	DNC Office
4. Date & Time	1st June 2010, 13:45 – 15:00

5. Points of Discussion/Observation

After the Study team explained the draft idea of future assistance, Mr. Lien showed his ideas/recommendations as follows:

(1) Capacity development in National Parks: The education levels of officials in the management unit are not high. Therefore, training and education on them are necessary.

(2) Education and expansion of knowledge of biodiversity to communities and people living in/around PAs are necessary. If the propaganda would be short, they will start to attach forest.

(3) Involving the minority group to the management. Their traditional products can be sold, and they can improve their life. It can support the conservation of the biodiversity. (4) Development of the traditional knowledge for biodiversity conservation (source: JICA project) (5) Capacity development, establishment of financial system, and policy enhancement (source: GTZ project) (6) Evaluation of impact by the climate change on biodiversity. (7) Establishment of Integrated database: the database of ecosystem of inland, costal area, and marine. (8) The National park with both ecosystem of forest and coastal area is important and enhancement of the management of those are expected.
6. Notes/Issues: none

Meeting / Field Memo

No. of Memo: 14	
1. Topic/Purpose	Meeting with IUCN
2. Participants	Mr. Brunner (IUCN), Mr. Egashira (JICA), Study team (Imai)
3. Place	IUCN Office
4. Date & Time	1st June 2010, 16:00 – 17:00
5. Points of Discussion/Observation	
Some highlights of the discussions are summarized as follows: (1) The situation surrounding the biodiversity in Vietnam has been changing rapidly. Vietnam developed everything in these 15 years but environment condition is very poor. Everything is too late to take action on biodiversity conservation. (2) The model of GEF small grant would be good. The local small NGOs are expected to be developed. (3) The endemic species outside of PAs such as small insects should be conserved. (4) Vietnam Government is agrees with protection of mangrove forest, because it save the human lives. The Government would focus on the particular PAs where they can recognize the value such as eco-tourism. However, they do not pay attention on the other areas without value such as wetlands. The wetlands in Mekong Delta have been changed to the paddy fields. (5) The biodiversity conditions in the forests are too late to be conserved. The forest area has been increased, but artificial forest is not natural. The large area planting can not restore the	

biodiversity. (6) Only MONRE is working for COP10. (7) It is expected to add the PES system on the biodiversity conservation.
6. Notes/Issues: none

Field Survey Report for the Data Collection Survey on Biodiversity Conservation in Asian and African Regions

June 24, 2010
Data Collection Survey on Biodiversity Conservation
in Asian and African Regions

1. Introduction

1.1 Background of the Overall Survey

Mankind heavily depends on biodiversity in our lives. Nevertheless, it is reported that the biodiversity on earth is in a critical condition as over 40,000 species become extinct every year due to various human activities, such as deforestation, over hunting, water pollution and others. Efforts to conserve biodiversity have been reinforced internationally after the adoption of the Convention on Biodiversity (CBD) at the United Nations Conference of Environment and Development in 1992. The Government of Japan has also actively worked on the conservation of biodiversity since then as a country that ratified the convention. This year is the last year of the 2010 biodiversity target adopted by the Conference of the Parties (COP 6) held in the Netherlands in 2002. Furthermore, Japan will host the tenth meeting of the COP in October 2010 as the chair country and is expected to play an important role in leading the activities on biodiversity conservation not only domestically but also internationally.

The Japan International Cooperation Agency (JICA) has successfully implemented a number of cooperation projects/programs on biodiversity conservation. Because of its long and successful achievements, the international community expects JICA to make more contributions, towards COP 10, to the conservation of biodiversity in developing countries. In particular, the countries in Asian and African regions need further assistance in biodiversity conservation since there are many biodiversity hot spots and untouched natural forests still remaining in the regions.

Given this background, JICA was determined to conduct a survey to collect and analyze relevant information/data concerning biodiversity conservation and forestry-related measures against climate change, identifying the needs for future cooperation/assistance in the same subjects in the Asian and African regions.

1.2 Objectives of the Overall Survey

The main objective of the overall survey is to identify the needs for official development assistance in the fields of biodiversity conservation and forestry-related measures against climate changes in the Asian and African regions. Toward this end, the survey team aims to:

i) collect and analyze relevant data and information concerning biodiversity and forest conservation as well as forestry-related measures against climate change in the ODA recipient countries in Asian and African regions;
ii) establish a database using data and information collected;
iii) identify the needs for future cooperation in the conservation of biodiversity and mitigation of/adaptation to climate change;
iv) select eight countries in the regions, four in Asia and another four in Africa, for further examination of the possible cooperation that JICA might be able to implement; and
v) conceptualize a/ potential project/s in the fields of biodiversity conservation and mitigation/adaptation measures in the forestry sector against climate change.

1.3 Background of the Field Survey

1.3.1 Countries visited

As described in the objective of the overall survey, a total of eight counties among the 78 countries, which are strategically important for biodiversity conservation in the regions and in need of JICA's ODA assistance in the same subject, are to be selected for further examination of potential JICA' cooperation. Following initial desk study and discussions with JICA, the following eight countries were selected:

Asian regions: Philippines, Lao PDR, Cambodia, and Vietnam
African regions: Tunisia, Ethiopia, Uganda, and Botswana

1.3.2 Purpose of the Survey

The main aim of the field survey is to further examine the needs for ODA support in the field of biodiversity conservation and conceptualize a/ potential project/s that JICA might be able to work on in the future. Specifically, the following activities are to be carried out in the field survey.

- Discussion of work plan with JICA branch office and relevant government organisations
- Interviews with relevant organisations for data collection
- Discussions on needs for assistance in biodiversity conservation and forestry
- Examination of possible project potential.

1.4 Scope of the Work

1.4.1 Major Activities done by the Survey Team

A member of the study team (referred to as "the Undersigned") has carried out the following activities to fulfill his tasks during his stay in The Philippines.

- Collection and review of existing acts and regulations in the forestry, fisheries, and environmental sectors;
- Collection and review of existing policies, strategies and plans in the same sectors;
- Discussions with government offices and other organizations concerned with biodiversity conservation in the country;
- Field observation of the major ecosystems in the country and/or potential areas for future interventions under the JICA's cooperation; and
- Identification of the needs for future JICA's cooperation in the field of biodiversity conservation in consultation with the relevant government and non-government organizations.

1.4.2 Schedule of the Field Survey

The following table shows the work schedule of the Undersigned from June 06 to June 26, 2010.

Date	Activities
June 06 (Sun)	Arrival at Manila, Meeting with JICA Philippines Office
June 07 (Mon)	Meetings with Foreign Assisted and Special Projects Office-FASPO(DENR), and Office of Tourism Development Planning of DOT
June 08 (Tue)	Meetings with FASPO, ADB and Bureau of Fisheries and Aquatic Resources (DA)
June 09 (Wed)	Meetings with GTZ, USAID, FAO and UNDP
June 10 (Thu)	Meetings with WWF and Ecosystems Research and Development Bureau (DENR)
June 11 (Fri)	Meetings with WB, Conservation International(CI), Environmental Management Bureau (DENR), Forest Management Bureau-FMB (DENR), and Protected Area and Wildlife Bureau-PAWB (DENR)
June 12 (Sat)	Data arrangement
June 13 (Sun)	Data arrangement
June 14 (Mon)	Data arrangement

Date	Activities
June 15 (Tue)	Meetings with Haribon Foundation, and National Mapping and Resource Information Authority (DENR)
June 16 (Wed)	Meetings with FMB and FASPO
June 17 (Thu)	Meeting with PAWB, DENR Regional Director of Region 7
June 18 (Fri)	Trip to Bohor province with PENRO-DENR, Field observation of existing and potential mangrove plantation sites and protected area.
June 19 (Sat)	Trip to Bohor province, Field observation of the fish sanctuary at Balikasag island
June 20 (Sun)	Report writing
June 21 (Mon)	Meeting with PAWB, information collection at BFAR, and report writing
June 22 (Tue)	Meetings with JICA Philippines Office, FMB, ASEAN Center for Biodiversity, and ADB
June 23 (Wed)	Meeting with DOT
June 24 (Thu)	Report submission to PAWB and FMB, Trip to Verde Passage with CI
June 25 (Fri)	Trip to Verde Passage, submission of the report to JICA Office
June 26 (Sat)	Departure from Manila

Appendix 1 gives memos of some of the meetings that the Undersigned has had during the assigned period.

1.5 Purpose and Content of the Field Report

The main aims of this filed report are to report the results of the survey undertaken by the survey team and share the ideas and recommendations that the survey team came up with based on the assessments made. It is noted that all the findings, ideas, and recommendations described in this field report are not necessarily based on the stand and view of JICA, but more on the technical judgment made by the survey team.

The report is composed of four parts, namely, Chapter 1: Background; Chapter 2: Results of the Work (Summary); Chapter 3: Identified Needs for Future Cooperation and Chapter 4: Potential Interventions. Chapter 1 gives the background and outlines of the survey, while Chapter 2 presents the summary of the results of the field survey. The needs for future cooperation in the field of biodiversity conservation are identified and presented in Chapter 4. The last chapter shows the potential interventions that JICA might be interested in and recommendations made by the survey team.

2. Results of the Work (Summary)

2.1 Policy Analysis

2.2.1 Review of the Major National Strategies

The following table shows the key strategies relating to biodiversity conservation in Medium Term Philippine Development Plan (MTPDP) 2004-2010 and Philippines' Millennium Development Goals.

Source	Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
Medium-Term Philippine Development Plan 2004-2010	Sustainable and more productive utilization of natural resources to promote investments and entrepreneurship	a. To create a climate conductive environment for investments and production by implementing at least 10 CDM projects; b. To initiate the development and sustainable utilization of biodiversity resources; and c. To clearly delineate areas for protection, exploration and utilization through the survey and mapping of maritime zones especially focusing on the delineation of municipal waters in offshore islands.
	Focus on and strengthen the protection of vulnerable and ecologically fragile areas	a. To rehabilitate and strengthen protection of critical watersheds; b. To expand coverage and strengthen protection of coastal and marine ecosystem; c. To delineate 6,336 million ha of the areas for protection of biodiversity resources across the country: and d. To develop protected areas with viable management measures
Philippine's Millennium	Plantation and conservation of	Goal 7: to ensure environmental sustainability through integrating the principles of sustainable development into country policies and programmes

Source	Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
Development Goals	protected area	to reverse the loss of environmental resources, such as a. maintaining the forest cover; b. maintaining protected area and the biological diversity; and c. addressing CO2 issues and climate change mitigation and adaptation.

2.2.2 Review of the Strategies of the Relevant Sectors

Simultaneously, the following strategies and national plans of the relevant sectors were also reviewed and analyzed to identify those related to biodiversity conservation in the country.

a. National Framework Strategy on Climate Change, 2010-2022
b. Revised Master Plan for Forest Development (prepared in 2003)
c. CTI-Philippines National Plan of Action (2010-2020)
d. National Ecotourism Strategies (2002-2012)

Tables 1 to 3 show the results of the reviews and its highlights are summarized below.

(1) National Framework Strategy on Climate Change, 2010-2022

a. Implementation of REDD + through: i) enhancement of the forest sector's ability for REDD; ii) strengthening of the government mechanism to ensure equitable benefit sharing with LGUs and communities; iii) promotion of a watershed approach for REDD+; iv) establishment of national baselines and determination of the drivers of deforestation and degradation in the country; v) establishment/implementation of a sub-national REDD MRV system; vi) formulation of national REDD+ communication plan and capacity building program; vii) exploration of possible funding sources for REDD+ and establishment of ling-term financial sustainability of REDD+.
b. Implementation of river basin management through: i) rehabilitation and development of watershed resources; ii) enhancement of the function and services possessed by ecosystems to mitigate the natural calamities/events; iii) institutionalization of a comprehensive river basin management strategy; iv) establishment of appropriate and participatory institutional arrangements with relevant stakeholders; v) introduction of ecosystem-based approaches and natural resource-based economic development activities.
c. Improvement of the resilience of coastal and marine ecosystems through: i) establishment of marine reserve networks; ii) clustering/integration of marine reserves according to "source and sink;" iii) prioritization of protection/management of mangroves, estuaries, sea grasses, coral reefs and beaches as a management unit; iv) strengthening of sustainable, multi-sectoral and community-based coastal resource management mechanisms and ecotourism endeavors; v) expansion of the sink potential of marine ecosystems such as coral reefs and mangroves.
d. Mainstreaming of biodiversity adaptation strategies to climate change by: i) establishment of national baselines, standards and indicators for monitoring of biodiversity conservation programs; ii) strengthening of vertical and horizontal coordination among stakeholders; iii) protection of vulnerable ecosystems and threatened species from climate changes; iv) development of institutional capacities in biodiversity conservation and climate change adaptation; v) establishment of scientific basis for measuring the impacts of climate change ecosystem and species; and vi) mobilization of sustainable funding support to climate change adaptation programs.

(2) Revised Master Plan for Forestry Development (prepared in 2003)

The Master Plan for forest development recommends 10 priority programs in the revised mater plan. Among the proposed programs and activities, the following are considered relevant to biodiversity conservation.

a. Sustainable management of residual forests, other natural forests, arresting forest destruction
b. Forest area expansion through plantation development
c. Protected area and biodiversity conservation
d. Community-Based Forest Management as a cross cutting strategy in all forest management system

(3) CTI-Philippines National Plan of Action (2010-2020)

The CTI Philippines National Plan of Action (CTI-Phil NPOA) has been just prepared by the government in accordance with the CTI Regional Plan of Action. Its major aims are to arrest the accelerating degradation of the natural environment and to conserve the country's biodiversity in the coastal and marine ecosystems in the country. The CTI-Phil NPOA has five goals with 10 strategic objectives. Each objective has several strategies and national actions. Its goals and strategic objectives as well as strategies are summarized below.

a. Identification and management of priority seascapes through i) rapid assessment and detailed scientific studies, ii) promotion of ecosystem-based management; iii) development a capacity building mechanisms; iv) conduct of periodical monitoring and evaluation; and v) ensuring of protection of key biodiversity areas and threatened species.
b. Application of ecosystem approach to management of fisheries (EAFM) through i) development of strong legislative, policy, and regulatory framework for EAFM; ii) improvement of income, livelihoods and food security of coastal communities; iii) sustainable management of tuna stocks; iv) achievement of effective management of coral reef-based fish and ornamentals with the establishment of a CTI forum on international trade on coral reef-based organism
c. Establishment and effective management of marine protected areas (MPAs) through i) introduction of MPA system; ii) completion of a comprehensive map with geo-referenced database of MPA networks; iii) capacity development; iv) coordination among the stakeholders; and v) establishment of public and private partnerships for conservation of coral and marine resources.
c. Achievement of adaptation for climate change through i) implementation of a region-wide climate change adaptation plan for marine and coastal environment/ecosystems; and ii) establishment of national networks on climate change adaptation for marine and coastal environments.
d. Identification and improvement of the status of threatened species through i) preparation and implementation of national conservation action plans for specific threatened species; ii) preparation and implementation of national action plan on invasive alien species; iii) adaptation and strengthening of relevant legislative, policy and regulatory frameworks; and iv) development and implementation of capacity building activities.

(4) National Ecotourism Strategy (2002-2012)

The National Ecotourism Strategy (NES) was developed in 2002 pursuant to Executive Order (EO) 111. The NES views eco-tourism not as an imported concept but a direct response to real needs in

the country and states that successful and sustainable eco-tourism development rests on the following four pillars: i) sustainable management of natural and cultural resources; ii) environmental education and conservation awareness; iii) empowerment of local communities; and iv) development of products that will satisfy visitor needs and position the country as a globally competitive eco-tourism destination. The goals of the NES are to develop globally competitive eco-tourism products, develop responsible eco-tourism markets, optimize community benefits and enhance the quality of visitor experience. Toward this end, the National Economic Program composed of the seven components was also developed. The components and their activities related to biodiversity conservation are highlighted below.

a. Identification of 32 key sites and 55 emerging and potential key sites (*completed*)
b. Development of eco-tourism standards, regulations and accreditation system (*completed*)
c. Development and institutionalization of eco-tourism ethics and institutional guidelines and inventory/database of eco-tourism sites and products (*The status is unknown*.)
d. Enhancement of awareness of eco-tourism among local stakeholders (*Some were conducted on a project basis.*)
e. Establishment of eco-tourism communication network to develop the linkages between/among eco-tourism stakeholders (*The status is unknown.*)
f. Capacity building of the relevant stakeholders (*Some were conducted on a project basis.*)

It has been eight years since the NES and NEP were developed. As the natural environment and socio-economic conditions of the country have been changed since 2002, the NEP needs to be updated based on the current conditions of the country.

2.2 Analysis of the Present Conditions of the Major Ecosystems (Results of SWOT Analysis of the Major Ecosystems)

The survey team did the SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats analysis) to assess the current status of the ecosystems in the Philippines. The results of the analysis are shown in **Table 4**, and summarized below.

Biodiversity	**Results of SWOT analysis**
1. Forest and mountain biodiversity	**Strengths** ・ Provision of the source of livelihood for the population including indigenous peoples ・ Habitats for animals and plants including the threatened species ・ Management of some forest areas as protected areas (PAs) under NIPAS or ancestral domain claims **Weaknesses** ・ Progression of the deforestation ・ Slowed down reforestation activities in the country ・ Conflicting and overlapping roles and mandates of the government agencies PAs and forest areas ・ Limited financial source for the management of forest area and protected area **Opportunities** ・ Increasing interest in the implementation of REDD+ ・ Some initiatives for the Payment for Environmental Services (PES) as well as voluntary trading market ・ Some initiatives for corridor approach for biodiversity conservation **Threats** ・ Habitat loss due to logging operations, slash and burn farming, conversion of the forest lands to the agricultural lands, animal grazing, encroachment of agriculture in uplands, mining developments, and use of exotic species cause the pressure on the forest ecosystem.
2. Inlands Water Biodiversity	**Strengths** ・ Provision of food security, livelihood through fisheries resources and transportation measures ・ Function for the flood mitigation and groundwater recharge ・ Habitats for the species such as waterfowls, semi-aquatic species, plants and amphibians ・ Prioritized management of some areas as PAs under NIPAS **Weaknesses** ・ The deterioration of the condition of the inland waters, such as the decline of fish production, water inflow

Biodiversity	Results of SWOT analysis
	and outflow, and algal contamination, poor water quality ・ Difficulty in implementation of the management plan due to frequent changes in leadership in the implementing bodies, such as local councils ・ No regular and long-term monitoring programs for major waterways **Opportunities** ・ Possibility for the collaboration with the private companies in management of inland waters especially if there have been activities by the company at the localities ・ Potential to be bird watching spots **Threats** ・ Habitat loss due to water withdrawal, overexploitation of the resources including unregulated/illegal fish cage operations, wastewater discharges, sediment contamination, and irrigation and dam constructions ・ Introduction of invasive species such as janitor fish
3. Coastal, marine and island biodiversity	**Strengths** ・ Coverage by the coral triangle, at the center of the high marine diversity composed of coral reefs, sea grass beds, mangrove and beach forests, fisheries, seaweeds, marine mammals and others. ・ Provision of food, livelihoods and recreation ・ Marine Protected Areas (MPAs) established under NIPAS law and local government units ・ Integrated Coastal Resource Management Plans prepared by LGUs with supports from DENR, the donors and NGOs ・ Promotion of mangrove plantation by DENR **Weaknesses** ・ Decrease of mangrove areas ・ Decrease of coral reefs outside MPAs ・ Lack of comprehensive and historical data about the state of the ecosystem ・ Some marine mammals endangered, such as marine turtles and Irrawady dolphins ・ Conflicting mandates and overlapping jurisdictions in implementation of resource management **Opportunities** ・ Regional initiatives such as Coral Triangle Initiatives ・ Some initiatives between governments and private sectors for the conservation of marine resources ・ Promotion of eco-tourism in/around MPAs ・ Initiatives on corridor approaches and the introduction of “ridge-to-reef watersheds”management **Threats** ・ Habitat loss due to chemical pollution and eutrophication, fisheries operations including overfishing and destructive fishing practices, sedimentation, tourism-related activities ・ Invasion of alien species such as ad crown-of-thorns starfish infestations especially for coral reefs ・ Illegal catches of wild animals such as sea turtles

2.3 Review and Analysis of the Activities/Projects undertaken by other Donors and International Organizations

There have been supports from the donors and other international NGOs in biodiversity and forest conservation in the country. Currently, the following projects and activities are implemented or planned for implementation.

Dev. partners	Major activities
ADB	Current Activities - Implementation of Integrated Coastal Resources Management(ICRM) and biodiversity conservation project in 6 provinces in Cagayan, Zambales, Masbate, Cebu & Siquior, and Davao - Capacity development of PO’s in reforestation activities in Negros, Compostela Valley de Surigao de Sur, Agusan de Norte, Surigao de Sur.
FAO	Current Activities - Assistance in conservation and adaptive management of Ifugao Rice Terraces - Rehabilitation of natural forests through prevention of wild fires and promotion of regeneration in CBFM area - Promotion of enterprise development in upland CBFM area Pipe lined activity - Implementation of Regional Linking of Community to Carbon Market
GTZ	Current Activities - 3 projects on development and implementation of policy/strategies on climate changes - Capacity development activities to the government agencies to plan and implement natural resources management and sustainable rural development Pipe lined activity

Dev. partners	Major activities
	- REDD+ piloting in Visaya - Assistance in establishment and rehabilitation of MPAs as a part of CTI - Support to the Climate Change Commission in the development and implementation of a national climate strategy - Assistance in conservation of the natural forest in Panay Island.
Japanese Government through SPCCI/WB	Current Activities - Implementation of the Laguna de Bay Community Carbon Finance Project
JICA	Current Activities - Assistance in coastal resource management to LGU-councils in Iloilo - Research assistance in development of data base and monitoring system of coastal and marine resources (JST)
ITTO	Current Activities - Assistance in development of technical manuals on rattan management and training, and establishment of rattan demonstration plots
NZAID	Current Activities - Enhancement of Natural Resources Management through Enterprise Development - Assistance in institutionalizing an integrated costal resource management system and strengthening capacities of coastal communities, LGU and other stakeholders of Camiguin island
UNDP	Current Activities - Assistance in establishment of Samar Island Natural Park as a protected area (SIBP2) - Assistance in expansion of protected areas declared by LGUs with introduction of PES - Conservation of important areas outside PAs in Luzon, Visaya and Mindanao Pipe lined activity - Implementation of ICRM focusing on fishery resources management in Sulu and Sulawesi. (CTI) - Implementation of research of Tuna in coordination with WWF - Conservation of PAs in Sierra Madre and Panay
USAID	Current Activities - Assistance LGUs in forest and forest and coastal resource management (EcoGov2) - Assistance in environmental law enforcement and capacity development of law-enfosers (PBC) - Assistance in improvement of the fishery management conserving biodiversity (FISH)
Conservation International	Current Activities - Assistance in the coastal resources management in Sulu-Sulawesi Seascape with implementation of PES - Demonstration of CO_2 sequestration in Northen Sierra Madre with application of CCB standard Pipe lined activity - Implementation of activities under NPOA, such as ICRM in Sulu-Sulawesi Marione Ecoregion (SSME), conservation of shark and turtles and introduction of traditional fisheries
World Wildlife Foundation	Current Activities - Implementation of activities under NPOA, such as ICRM in SSME - Conduct of biodiversity related researches - Assistance in conservation of MPAs
Haribon Foundation	Current Activities - Implementation of Governance and Local Development for Endangered (GOLDEN) forests, landscapes and seascapes - Assistance in policy formulation on forestry

2.4 Review and Analysis of the Relevant Legislative Documents

The following major legislation and regulatory frameworks relevant to forest and biodiversity conservation in the county were reviewed in the field work.

- Local Government Code（RA 7160, 1991）
- National Integrated Protected Areas System（NIPAS）Act (RA7586, 1992)
- Philippines Fisheries Code (RA 8550, 1998)
- Wildlife Resources Conservation and Protection Act (RA 9147, 2001)
- Revised Forestry Code of the Philippines (PD 705, 1975)
- Adopting community-based forest management as the national strategy to ensure the sustainable development of the country's forest land resources and providing mechanisms

for its implementation (EO 263, 1995)

- Adopting Integrated Coastal Management as a National Strategy to Ensure the Sustainable Development of the Country's Establishing Supporting Mechanism for Its Implementation (EO 533,2006)
- Rules and Regulations for the Implementation of Executive Order 263, Otherwise Known as the Community-Based Forest Management Strategy (DAO 96-29,1996)
- Revised Guidelines on the Establishment and Management of Community-Based Program in Protected Areas (DAO 2004-32, 2004)

3. Identified Needs for Future Cooperation

3.1 Identified Needs based on the Assessments

Based on the rapid assessment of the current condition of the relevant sectors, past and on-going activities done by the government as well as major donors and funding institutions, and current national policies and strategies, the survey team identified the following are potential needs for future cooperation in the fields of biodiversity conservation as well as forestry-related against climate change.

Needs for Conservation of Terrestrial Ecosystem

a. Preparation for the implementation of REDD+
b. Protection, improvement and sustainable management of forests in major watersheds/river basins
c. Protection of remaining natural forests especially those in the protected areas
d. Enhancement and promotion of community-based forest management

Needs for Conservation of Freshwater Ecosystem

a. Control of invasive alien species
b. Control of fish catches
c. Control of inflow of polluted water into lakes and wetlands

Needs for Conservation of Coastal and Marine Ecosystem

a. Identification and demarcation of important seascapes through assessment and detailed scientific researches
b. Rehabilitation and sustainable management of important coastal and marine ecosystems: mangrove, coral reef, and seagrasses
c. Establishment of national baselines and indicators for monitoring of biodiversity
d. Development of institutional capacities of the relevant organizations in biodiversity conservation
e. Promotion and expansion of EAMF through implementation of integrated coastal management programs together with relevant researches and livelihood assistance to local communities
f. Conduct of regional researches, data sharing among the countries, and preparation of a management plan for sustainable management of tuna stocks in the region
g. Strengthening of MPA management through development of geo-reference database of MPAs, networking of MPAs, capacity development, and development of a sustainable financing mechanism in coordination with public and private sectors
h. Preparation and implementation of national conservation action plans for the major species

Need for Creation of Conducive Environment for Eco-tourism Development

a. Revision of the national eco-tourism development plan through i) update of the key sites and ii) suggested mechanisms to facilitate the implementation of the existing standards/regulations/accreditation system based on the current conditions of the key eco-tourism sites;

b. Development and institutionalization of eco-tourism ethics or “Eco-tourism Code”

c. Development of a database of existing eco-tourism sites and products in the country and strengthening of the information and knowledge sharing system

d. Enhancement of the capacity to develop an environmentally-sound eco-tourism development plan including spatial planning, zoning, assessment of carrying capacity, and visitor management

3.2 Existing DENR’s Project Ideas related to Climate Change

DENR has already identified and conceptualized their potential projects in relation to climate change as listed below. More details of the project ideas (e.g., strategies, activities, implementing agencies, and potential donors) are given in **Table 5**.

1) Integrated coastal enhancement, coastal research, evaluation and adaptive management for climate change
2) Protection and rehabilitation of coastal communities and ecosystems
3) Strengthening of protection and management of vulnerable and fragile ecosystems
4) Strengthening of protection and management of vulnerable and fragile marine ecosystems of small islands
5) Fuel wood plantations and development of biomass energy generating systems
6) Improvement of the management of watershed resources in upper river basins of the selected watersheds;
7) Protection and conservation of natural forest ecosystems;
8) Restoration/Rehabilitation of mangrove forests in typhoon and flood-prone coastal communities; and
9) Mapping and assessment of coastal ecosystems vulnerable to sea level rise

4. Potential Interventions

4.1 Long-listed Potential Interventions

Based on the assessment of the identified needs and capacities of the relevant organizations, the survey team tentatively long-listed the potential interventions as follows:

Needs for Conservation of Terrestrial Ecosystem

For Conservation of Terrestrial Ecosystem and Forestry-related measures against climate change

[Under FMB]

a. Assistance in the preparation of updated forest resource map on a national level with a ground truth survey and capacity development of the relevant organizations for the readiness for REDD

b. Preparation of an integrated watershed management plan of the critical watershed which is vulnerable to climate change and has still highly diversified forest ecosystems

[Under PAWB]

c. Preparation of an integrated management plan of the selected important protected area/s and the surrounding natural forests in consideration of i) river basin approach, ii) community-based management approach, iii) livelihood development support, and iv) introduction of sustainable financing mechanisms (e.g., PES and REDD)
d. Assistance in the strengthening of the capacity to manage a/ critical protected area/s (preparation of a management plan, introduction of community-based protected area management approach, livelihood development support, implementation of a REDD pilot project)

For Conservation of Freshwater Ecosystem

[Under PAWB]

a. Inventory and assessment of the status of the freshwater ecosystems in the country and formulate an integrated management plan of the major freshwater ecosystems including the components relating to scientific researches, pilot activities of PES, livelihood support and collaborative management by the stakeholders

For Conservation of Coastal and Marine Ecosystem

[Under PAWB]

a. Assessment and update of the marine protected areas and fish sanctuaries to prepare a GIS-based database and identify important marine protected area networks including new proposals of establishment of marine protected areas
b. Formulation of a management plan of the critical marine protected area or the area to be designated as a marine protected area in coordination with the pipeline project
c. Implementation of a series of activities necessary for the integrated coastal resource management (ICRM) in the key coastal areas (except those supported by the ADB-funded project)
d. Rehabilitation and protection of coastal ecosystems (mangrove, coral reef, and seagrasses) with participation of local communities and introduction of the integrated coastal resource management concept/approach to attain the sustainable resource management in a collaborative manner among the relevant stakeholders

[Under BFAR]

e. Assistance in the regional coordination with other CTI countries for researches, data sharing and discussions of management of tuna stocks in the region

[Under NAMRIA]

f. Assistance in the establishment of baseline data on coastal ecosystems and resources vulnerable to climate change in the country

For Creation of Conducive Environment for Environmentally-sound Eco-tourism Development

[Under DOT]

a. Revision of a national eco-tourism development plan including i) an inventory of key ecotourism sites (existing and potential sites), ii) re-assessment of the status of the key eco-tourism sites, iii) examination of a mechanism to facilitate the implementation of the standards, regulations and accreditation system; iv) introduction of adaptive management system, v) implementation of pilot projects in the selected areas.

   (This should be implemented in coordination with the pipeline JICA project.)

4.2 Evaluation of the Long-listed Potential Interventions

The long-listed projects are evaluated in terms of: i) relevance, ii) appropriateness of size (as compared to the capacity of the corresponding government agency), iii) necessity, iv) urgency, v) expected impact and vi) underlying risks, for evaluation. As a result of the evaluation given in the next table, the following projects/interventions are tentatively evaluated as priority ones.

a. Assistance in the preparation of updated forest resource map on a national level with a ground truth survey and capacity development of the relevant organizations for the readiness for REDD
b. Assessment and update of the marine protected areas and fish sanctuaries to prepare a GIS-based database and identify important marine protected area networks including new proposals of establishment of marine protected areas
c. Rehabilitation and protection of coastal ecosystems (mangrove, coral reef, and seagrasses) with participation of local communities and introduction of the integrated coastal resource management concept/approach to attain the sustainable resource management in a collaborative manner among the relevant stakeholders

Results of Evaluation of Long-listed Potential Interventions (Draft)

(1) Terrestrial

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Recommend
Assistance in the preparation of updated forest resource map on a national level with a ground truth survey and capacity development for REDD	Development study	High (to climate change)	Mid.-High	High	High	High	None	**High**
Preparation of an integrated watershed management plan of the critical watershed	Development study	High	High	Medium	Medium	Med.-High	None	Medium
Preparation of an integrated management plan of the selected important protected area/s and the surrounding natural forests	Development study	High	High	Medium	Medium	Med.-High	None	Medium
Assistance in the strengthening of the capacity to manage a/ critical protected area/s	Tech. coop. type project	High	Medium	Medium	Low-Med	High	This should be done after the planning.	Medium

(2) Freshwater

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Recommend
Inventory and assessment of the status of the freshwater ecosystems in the country and formulate an integrated management plan of the major ecosystems	Development study	High	High	High	High	Medium	It may be difficult to control invasive alien species.	Med.-High

(3) Coastal

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Recommend
Assessment and update of the marine protected areas and fish sanctuaries to prepare a GIS-based database and identify important marine protected area networks	Development study or Dispatch of experts	High	High	High	High	Med.-High	None	**High**
Formulation of a management plan of the critical marine protected area	Development study	High	High	Med.-High	Medium	Medium	There may be land conflict issue.	Medium
Implementation of the integrated coastal resource management (ICRM) program in the key coastal areas	Tech. coop. type project or Loan project	High	High	Med.-High	High	Medium	There is an on-going project funded by ADB in some regions.	Med.-High
Rehabilitation and protection of mangrove, coral reef, and seagrasses with participation of local communities and introduction of the ICRM concept/approach	Loan project	High	Med.-High	High	High	High	None	**High**
Assistance in the regional coordination with other CTI countries for researches, data sharing and discussions of management of tuna stocks in the region	Dispatch of expert to CTI	High	High	High	High	High	None	**High**
Assistance in the establishment of baseline data on coastal ecosystems and resources vulnerable to climate change in the country	Development study	High	High	Med.-High	Medium	Medium	None	Medium

(4) Conducive Environment for Environmentally-sound Eco-tourism Development

Potential interventions	Type of assistance	Relevance	Appropriateness	Necessity	Urgency	Impact	Risk	Recommend
Revision of a national eco-tourism development plan	Development study	High	High	Med.-High	Medium	Medium	None	Medium

Table 1 Summary of the National Framework Strategy on Climate Change 2010-2022

Strategic objectives	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
Implementation of REDD+	a. To review, harmonize, and where necessary formulate, enabling policies towards enhancing the forestry sector's ability to reduce emissions from deforestation and forest degradation b. To strengthen the governance mechanism in REDD+ coordination and implementation by establishing appropriate institutional arrangements to ensure equitable benefit sharing with local government units and communities; c. To promote a watershed approach towards REDD+ planning, implementation, and enforcement, pursuing options to improve the protection and sustainable management of forests, and the enhancement of forest carbon stocks and biodiversity; d. To collaboratively establish a broad science-based REDD+ research and development agenda which, among others, identifies relevant national baselines, the drivers of deforestation and degradation in the country, and the social, policy, and carbon-cycle aspects of REDD+ in the Philippines; e. To establish and implement a subnational REDD+ measurement, reporting, and verification (MRV) system, scaling up to a national-level system commensurate with the improvement of capacities and resources; f. To formulate and implement a national REDD+ communication plan and capacity building program; g. Explore and capitalize on opportunities for financing REDD+, establishing long-term financial sustainability and resilience by seeking multiple funding sources, establishing contingencies and investing in self-sustaining local-level programs.
River Basin Management	a. To rehabilitate and develop watershed resources through resource use improvement and governance improvement; b. To enhance vulnerability and adaptation assessments; c. To enhance ecosystem services to control droughts, floods and landslides; d. To institute a comprehensive river basin management governance strategy; e. To establish appropriate and participatory institutional arrangements with local government units, private sector, and civil society organizations; and f. To reduce climate change risks and vulnerability of watershed ecosystems and biodiversity through ecosystem-based management approaches, conservation efforts, and sustainable ENR-based economic endeavors such as ecotourism.
Building-up and improvement of the resilience of coastal and marine ecosystems and communities	a. To establish marine reserve networks through active participation of local communities to serve as sources of marine propagules to replenish biodiversity in shallow water habitats; b. To determine optimal clustering and locations of marine reserves according to "source and sink"; c. To prioritize protection/management of mangroves, estuaries, sea grasses, coral reefs and beaches as a management unit to derive maximum benefits from synergistic interactions of these five ecosystems that result in enhanced marine productivity; d. To strengthen sustainable, multi-sectoral and community-based coastal resource management mechanisms and ecotourism endeavors; and e. To manage and expand the sink potential of marine ecosystems such as coral reefs and mangroves
Mainstreaming biodiversity adaptation strategies to climate change in policies, plans and programs	a. To establish national baselines, standards and indicators for monitoring progress in implementing biodiversity conservation programs; b. To strengthen vertical and horizontal coordination among government agencies, civil society groups, academe and other organizations in implementing biodiversity conservation and adaptation strategies to climate change; c. To protect vulnerable ecosystems and highly threatened species from climate change impacts; d. To develop institutional capacities in biodiversity conservation and climate change adaptation at the national, regional and local levels; e. To establish scientific basis for measuring the impacts of climate change ecosystem and species diversify; and f. To mobilize sustainable funding supports to climate change adaptation programs.

Table 2 Summary of the Revised Master Plan for Forest Development (prepared in 2003)

Program related to biodiversity conservation	Activities related to biodiversity conservation
1.Policy Reforms and Institutions Development	- Harmonization of forest other policies affecting the sector - Retrofitting the PFA as a line agency, and as: firstly, a land management agency and secondly, a forest resources management agency, separation of the authority and enterprise functions of the PFA (public forest administration) - Capacitation of forestry institutions, institutional reforms - National Council for Sustainable Forestry (NCSF)
2.Prioritization/watershed integrated land use planning simultaneous with forest boundary delineation	- Assessment for prioritization of watersheds - Watershed land use planning - Forest boundary delineation/mapping
3.MIS, IEC and R & D enhancement	- Updating of central PFAMIS - Upgrading of regional MIS facilities - Regional information gathering systems development - Forestry and environmental education - Information, Education and Communications - Research and development
4.Sustainable management of residual forests, other natural forests, arresting forest destruction	- Delineation/demarcation of protection and production forests - Development of JV, CP & PS models/mechanisms - Implementation of JV, CP & PS
5.Forest area expansion through plantation development, ANR, other means	- Commercial plantation - Forest rehabilitation
6.Protected area and biodiversity conservation	- Establishment of 93 PAs - Delineation/demarcation of 5 PAs by law - Management, development and conservation
7.Forest industries rationalization and development	- Rationalization - Provision of new technologies in forest utilization - Improvement of infrastructures - Establishment of community-based industries - Establishment of a Forest Industrial Board
8.Sustainable management of grazing lands	- Identification, demarcation, and planning - Implementation of sustainable management
9.Full development of M & E and C & I system for all forest types and management systems	- M&E satellite photos - M&E systems upgrading/development - C&I development for all types of forest types and management systems
10.CBFM as a cross cutting strategy in all forest management systems	- Enhancement of CBFM implementation in existing sites - Identification and appraisal of new sites - Establishment and CO of new sites - Livelihood/enterprise development

Table 3 Summary of the CTI Philippines National Plan of Action (2010-2020)

Goals	Strategic objectives	Timeframe	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
Priority seascapes designed and effectively managed	Priority seascape programs identified, with management and investment plans	2010-2020	a. Conduct rapid assessments of existing seascape programs (2010) b. Conduct rapid assessments of potential new seascape programs (2012) c. Conduct detailed and relevant scientific studies in the bio-physical and socio-economic areas (2015)
	Priority seascape programs fully functional	2010-2020	a. Adapt a general model for a fully functional seascape program (2010) a. Secure social and political support with accompanying legal and political support with accompanying legal and institutional mechanisms at the different government levels (2012) c. Promote ecosystem based management (2015) d. Engage the private sector (2015) e. Mobilize financial resources necessary for supporting “priority seascape” programs (2015) f. Establish seascape capacity building and learning mechanisms (on-going) g. Conduct periodic monitoring and evaluation of existing seascape programs (on-going) g. Ensure that seascapes encompass key biodiversity areas and help protect threatened species (2012)
Ecosystem Approach to Management of Fisheries (EAFM) and other marine resources fully applied	Strong legislative, policy, and regulatory frameworks for EAFM in near shore and pelagic fisheries developed	2010-2012	a. Identify ecological, social-cultural, economic and institutional elements of EAFM and their inter-relationships (2012) b. Review and strengthen existing legislative, policy and regulatory frameworks (2011) c. Institutionalize EAFM within the government (2012) d. Determine fishing capacity and implement programs to reduce fishing over-capacity (2015) e. Formulate and implement Phil POA regional Plan for IUU (2015) f. Join together in negotiations of fishery access agreements (2015) g. Review and redirect perverse economic subsidies and other economic barriers in the fishery sector (2015) h. Engage the fishing industry in supporting EAFM (2015) i. Monitor conservation status of all major fisheries species to determine if they are threatened (2012) j. Improve functional implementation of fisheries management within municipal waters (2017)
	Improved income, livelihoods and food security of coastal communities across the region through a new sustainable coastal fisheries and poverty reduction initiative (COASTFISH)	2010-2012	a. Define and map poverty and fisheries zones to be targeted (2011) b. Design and launch a national CTI COASTFISH Initiative (2012) c. Collaborate around the mobilization of significant new financial investments to support COSTFISH (on-going) d. Collaborate aound the mobilization of significant new financial investments to support COASTFISH (on-going) e. Promote best practices on sustainable full-cycle mariculture and aquaculture practices (on-going) f. Address over-capacity for resource use and attendant health concerns, causing or as an effect of coastal resource management (CRM), as needed (on-going) g. Provide safety nets for over-exploitation through provision of sustainable livelihood opportunities
	Sustainable management of shared tuna stocks achieved for all species of tuna exploited in the region, with special attention to spawning areas and juvenile growth stages	2010-2020	a. Develop collaborative research, information-sharing, strategies for protection of spawning and juvenile growth areas, and financing mechanisms (2010) b. Establish a National Forum on Tuna Governance (2010) c. Develop a comprehensive plan on the markets and trade of tunas and explore ways to utilize its potential to get due benefits with other global trading partners (2012) d. Mobilize private sector leaders (on-going)
	A more effective management and more sustainable trade in life-reef fish and reef-based ornamentals achieved	2010-2020	a. Develop a collaborative work program on management of and international trade in coral reef-based fish and ornamentals, i.e., jointly supported research information-sharing, system analysis, and strategies for addressing the supply and demand sides of the trade (2010) b. Establish a CTI forum on international trade in coral reef-based organisms (2010)
Marine Protected	Coral Triangle-Philippines MPA	2010-2020	a. Coral Triangle-Philippines MPA System (CT-Phil MPAS)in place and fully functional (2010)

Goals	Strategic objectives	Timeframe	Key strategies relating to biodiversity conservation and forestry-related measures against climate change
Areas (MPAs) established and effectively managed	System (CT-Phil MAPS) in place and fully functional		b. Complete and endorse a comprehensive map and corresponding geo-referenced database of MPA networks to be included in CT-Phil MPAS (2012) c. Collaborate to build capacity for effective management of the CT-Phil MPAS (on-going) d. Collaborate around mobilizing sustainable financing for the CT-Phil MPAS (2010) e. Collaborate on the establishment of effectively managed MPAs and network of MPAs (on-going) f. Establish a public/private partnerships or working group for engaging the relevant industries, primarily tourism and travel, oil and gas industries industry, in supporting CTMPAS (2010)
Climate change adaptation measures achieved	Region-wide early action climate change adaptation plan for the near-shore marine and coastal environment developed and small island ecosystems developed and implemented	2010-2011	a. Complete assessment of current climate trends and future projections, vulnerabilities based on current climate risks and trends and formulated strategies to reduce vulnerabilities to climate risks (2011) b. Conduct assessment of current capacities to establish baseline and identify priority gaps and develop capacity-building programs (2012) c. Develop country specific plan of action to address the most important and immediate adaptation measures based primarily on analyses using existing models (2011) d. Mobilize resources to finance the implementation of the climate change adaptation measures (2011)
	Networked national centers of excellence on climate change adaptation for marine and coastal environments are established and in full operation. The most important and immediate adaptation measures are identified based primarily on analyses using existing models.	2010-2013	a. Design and implement a pilot phase for national centers of excellence (2012) b. Support scientific researches, economic analysis and valuation studies on climate change impacts including studies of the economic cost of action and inaction (2012) c. Develop and implement communications and information management strategies (2012) d. Enhance the current mandate and terms of reference of designated “focal point” to incorporate regional sharing of ideas, models, and information, and organize discussion on policies and practices, among others on climate change adaptation on coastal and marine (2012)
Threatened species status identified and improved	Improved status of sharks, sea turtles, seabirds, marine mammals, corals, seagrasses, mangroves and other threatened marine flora and fauna species will no longer be declined (2015), followed by a clear trend toward an improved status (2020), as key steps for preventing their extinction and supporting healthier overall marine ecosystems (2020)	2010-2020	a. Assess species status by supporting on-going and new assessment programs (2012) b. Complete and implement Philippines” National Shark Action Plan (2012) d. Complete and implement Philippines” National Sea Turtles Conservation Action Plan (2012) e. Complete and implement Philippines” National Seabird Conservation Action Plan (2012) f. Complete and implement Philippines” National Marine Mammal (Cetaceans and Dugons) Conservation Action Plan (2012) g. Complete and implement region-wide Conservation and Active Recovery Action Plan for Targeted Reef Fish and Invertebrate Species in critical condition h. Complete and implement Philippines National Plan of Action on Invasive Alien Species i. Adopt and strengthen 1) local and national legislative, policy and regulatory frameworks and 2) regional and international agreements on threatened species, and put in place supporting networks and information management systems (2013) j. Jointly develop and implement capacity building activities that support the above actions on threatened species

Table.4 SWOT analysis by the type of biodiversity in the Philippines

Biodiversity	Results of SWOT analysis
1. Forest and mountain biodiversity	**Strength** ・ Approximately 30 % of population including some 12 to 15 million indigenous peoples depends on forests for their survival and whose cultures revolve around their interactions with their natural environment. ・ Forest area functions as habitats for animals and plants including the threatened species. especially ・ Some of forest area has been protected under NIPAS and designated as Key Biodiversity Area ・ Also, some forest areas proclaimed as Protected Area (PA)s has been managed with Protected Area Community Based Resource Management Agreements (PACBRMA) with an aim of conservation of the area. ・ Portions of Forest lands are covered by ancestral domain claims with implementation of Ancestral Domain Sustainable Development Plan for the sustainable use of natural resources based on the indigenous knowledge.
	Weakness ・ Deforestation has been progressed. The percentage of the forest lost in the Philippines is the seventh fastest in the world as of 2008. ・ The law enforcement and prosecution is not sufficient to confiscate illegal trade of wild life species. ・ There is difficulty to grasp latest trend of the forest area since the forest cover map has not been updated since 2003. ・ There is lack of monitoring activities at the logging and other extractive activities especially in areas of high species increase in forest biodiversity. ・ Reforestation activities in the country have slowed down. ・ There are a conflicting and overlapping roles and mandates of LGUs, DENR, NCIP, the Certificate of Ancestral Domain Titles and legitimate immigrants inside PAs and forest areas. ・ The financial source for the management of forest area and protected area is limited.
	Opportunity ・ There has been increasing interest in the implementation of REDD+. Currently the National REDD+ Strategy is under preparation. ・ Including REDD+ , the Payment for Environmental Services (PES) have been put in trial by Donors and NGOs, such as water user fee in the lower watershed to be paid for the reforestation activities in the upland as well as voluntary trading market, e.g., the Climate, Community and Biodiversity Project Design Standards with supports from the private company. ・ There are some initiatives for corridor approach e.g., conservation of corridor in Eastern Mindanao.
	Threats ・ Human interventions such as legal and illegal logging operations, slash and burn farming, conversion of the forest lands to the agricultural lands, animal grazing, encroachment of agriculture in uplands infrastructure and housing projects, pollution derived by solid waste and pesticides, mining developments, and use of exotic species cause the pressure on the forest ecosystem. ・ There have been high demands for timber and wood products.
2. Inlands Water Biodiversity	**Strength** ・ The inland water biodiversity provide food security, livelihood through fisheries resources and transportation measures as well as contribute to the flood mitigation, groundwater recharge and water purification. ・ Also, the species such as waterfowls, semi-aquatic species, plants and amphibians depend on the habitats at inland waters. ・ Some of inland waters such as Taal Lake and Agusan Marsh have been proclaimed as PAs under NIPAS and attract tourist attentions for its landscapes. ・ Also, there is the Ramsar-designated area in the some marshes, such as Agusan Marsh. ・ DENR-EMB has monitored the water quality in 525 water bodies in accordance with the classification to determine its suitable water use. ・ The management plans of the inland waters have been developed by the local authorities in the sites such as Laguna Lake and Agusan Marsh. ・ There are 20 priority river basins identified to take actions against deterioration.
	Weakness ・ The deterioration of the condition of the inland waters, such as the decline of fish production, water inflow and outflow, and algal contamination, poor water quality has been observed. ・ Although some local council were set up for the development of the management plans of the lakes, the frequent changes in leadership in the council made it difficult to implement their mandates. ・ There are no regular and long-term monitoring programs for major waterways. ・ There has been conflicting mandates, overlapping jurisdictions in implementation of the strategies and management plans.

Biodiversity	Results of SWOT analysis
	Opportunity ・ Some inland ecosystems have potential to be bird watching spots, such as Candaba Swamp. ・ For the management of lakes, there might be the possibility for the collaboration with the private companies especially in case that there has been hydropower development at the lakes. ・ There is a local initiative to register the marsh, such as Agusan Marsh as UNESCO World Heritage Sites.
	Threats ・ Human interventions such as water withdrawal, overexploitation of the resources including unregulated/illegal fish cage operations, wastewater discharges, sediment contamination, and irrigation and dam constructions caused impact on the inland water biodiversity. ・ Also, introduction of invasive species such as janitor fish has caused near-extinction of local endemic species.
3. Coastal, marine and island biodiversity	**Strength** ・ The Philippines is located within the coral triangle, at the center of the high marine diversity composed of coral reefs, sea grass beds, mangrove and beach forests, fisheries, seaweeds, marine mammals and others. ・ The coastal ecosystems provide many direct and indirect benefits, including food, livelihoods, recreation, and protection from erosion. ・ There are more than 500 marine protected areas (MPAs) established under NIPAS law and local government units to promote sustainable use of the coastal and marine resources. ・ Integrated Coastal Resource Management Plans have been prepared by LGUs with supports from DENR, the donors and NGOs. ・ There has been 10,500 has of mangrove plantation by DENR during 2004-2009.
	Weakness ・ There has been significant decrease of mangrove areas in the country. ・ Outside MPAs, there has been a general decrease of coral reefs in trend except Sulu Sea and Celebes regions. ・ Most locally managed MPAs have little or no value in terms of biodiversity. ・ There is lack of comprehensive and historical data to better understand the state of the ecosystem. ・ Critically endangered marine turtles have been observed in Region XI. ・ Also, there are only less than 100 Irrawady dolphins found in the country. ・ There has been conflicting mandates, overlapping jurisdictions in implementation of the strategies and plans for integrated resource management.
	Opportunity ・ There have been implemented or set up some multinational agreements to protect coastal and marine resources, such as Coral Triangle Initiatives. ・ In order for the conservation of marine turtles and dugongs, there have been some initiatives between governments and private sectors, such as a Memorandum of Agreement between DENR, Davao City and Davao Light and Power Company, Inc. ・ Adequate management of MPAs can contribute to the promotion of eco-tourism as, e.g., diving sites. ・ There is an initiative for corridor approaches by NGOs, such as establishment and management of a network of MPAs in the Verde Passage. ・ The initiatives on the management of “ridge-to-reef watersheds” by local councils have been taken.
	Threats ・ The major direct threats are chemical pollution and eutrophication, fisheries operations including overfishing and destructive fishing practices, sedimentation, habitat alteration due to e.g., population pressure such as logging and tourism-related activities, invasion of alien species such as ad crown-of-thorns starfish infestations especially for coral reefs, and illegal catches of wild animals such as sea turtles.

Table 5 Summary of Existing DENR's Project Ideas related to Climate Change (The Final Report of Preparatory Study for Projects on Measures against Climate Change, JICA, 2009)

Sector/Theme	Outcome	Strategy	Activity	Implementing Agency	Implementing Partner	Donor	Measurable Output/Target	Timeframe	Cost(USD)
1. Adaptation									
1.1.Biodiversity									
1.1.1 Terrestrial ecosystem management	Strengthened protection and management of vulnerable and fragile ecosystems	Rehabilitation of priority mangroves and coastal ecosystems Protection and better management of wetlands and inland freshwater ecosystems Protection and better management of Protected Areas	- Characterization of mangrove areas, coastal, beach forest and wetlands and inland freshwater ecosystems (including depth and flow regimes) - Establishment of database on biodiversity (flora and fauna) including migratory birds - Impact and vulnerability assessment and mapping - Assessment of foreshore and reclaimed areas - Documentation of best practices, indigenous knowledge and other community initiatives related to climate change adaptation - Land use planning: identification of most suitable use of the land based on soil properties, slope, climate in the area, species to be planted (if any) , for grazing purposes or for conservation or protection - Project Formulation (Reforestation, rehabilitation, IEC, capability building, upgrading of production. research laboratories, and ICT facilities, biodiversity conservation (including migratory birds). The proposed projects that will be formulated include: reforestation/rehabilitation of degraded habitat of threatened and endangered speices, including protected areas, training of communities in and around PA on conservation of natural resources particularly biodiversity found in the ar - Identify potential areas for inclusion under protected area management - Monitoring/ evaluation on key services of the mangrove beach areas ar - Adaptation planning for critical ecosystems and species - Livelihood development - Community development (health, education, skills development, policy a markets for the products and availability of technologies for production. T - Regulation of land conversion (policy formulation)	DENR rgional offices,FMB, ERDB, PAWB, NAMRIA,UPLBCFNR, FPRDI, MGB	DPWH, DANIA, upland communities, educational institutions, NGOs; LGUs Civic groups Military group	-	- Increased area of mangroves - Number of rare and threatened species protected - Number of areas identified for potential Protected Area management - Increased catch of fishermen - Database on biodiversity established - Increased volume of carbon sequestered - Data on population of flora and fauna, data on depth and flow regimes of inland fresh water bodies - land use cover maps of mangrove areas and coastal ecosystems, wetlands and inland freshwater areas - Erosion rate reduced - Number of best practices and indigenous knowledge on climate change adaptation documented - Number of research facilities upgraded - Number of livelihood projects established - Policies on mangroves and coastal ecosystems formulated and issued - IEC and capability building conducted	5-10 years	50 million
1.1.2 Marine ecosystem management in small islands	Strengthened the protection of vulnerable and fragile marine ecosystems of small islands	Integrated marine ecosystem management of small islands	- Inventory/population studies on wild fauna/flora - Characterization of ecosystems, ecological studies - Mangrove protection and rehabilitation including beach nourishment - Indentify potential areas for protected area management - Buffer zone establishment - Mapping (preparation of various thematic maps of the areas though GIS) - Adaptation planning for critical ecosystems and species - Coral bleaching response activities/measures - Monitoring and evaluation of main causes of large marine mammals such as whales that get stranded on the shores and determining stranding response measures to same them. (Most likely reason why mammals are stranded on shore is sickness or they are lost) - Monitoring of migratory species - Establishment and operation of Networks of National Centers of Excellence on Climate Change - Adaptation for marine and coastal ecosystems. (This center is not yet established but proposed) - Capacity building of stakeholderscommunities, LGUs, DENR field officers, etc. on conservation of marine resources especially in small island ecosystems - Documentation of best practices in marine ecosystem rehabilitation - Mainstreaming of climate change adaptation into policies/plans/progran - Implementation of payment for environmental services (PES)	PAWB, DENR Regional offices, PAWS, NAMRIA	LGUs, communities, educational institutions, NGOs	-	- Area of mangrove rehabilitated/planted - Number of potential Protected Areas including buffer zones identified and established - Improved beach nourishment, number of wild fauna/flora inventoried - Maps of the area prepared, area of corals prevented from bleaching - Number and species of migratory fauna and fishes, number of operational Network of National Centers of Excellence on climate change adaptation for marine and coastal ecosystems - Number of persons trained on climate change, number of policies where climate change adaptation in incorporated - Implementation of PES - Number of IEC/capacity building activities conducted - Number of best practices in marine ecosystem rehabilitation documented - PES implementation	5-7 years	30 million

Sector/Theme	Outcome	Strategy	Activity	Implementing Agency	Implementing Partner	Donor	Measurable Output/Target	Timeframe	Cost(USD)
1.2. Water resources management									
1.2.1 Integrated watershed management	Integrated watershed management and development (priority watersheds)	Protection and rehabilitation of priority watersheds through community based development and management	- Characterization of watersheds including vulnerability assessment and mapping - Inventory of threatened or endangered flora and fauna found in the watershed including their population, location, habitat status, and similar data/information about biodiversity to develop the database on biodiversity - Land use planning to identify most suitable use of the land based on soil properties, slope, climate in the area, species to be planted (if any), for grazing purposes or for conservation or protection) - Identify potential areas for protected area management - Identification of potential areas for Reduced Emission from Deforestation and Forest Degradation (REDD) - Reduced impact of logging - Improved silvicultural practices - Establishment of seed production areas, forest and clonal nurseries - Improvement of grassland management - Reforestation (research on drought-resistant species) - Agroforestry development - IEC, Capability Building to include upgrading of research laboratories an - Biodiversity conservation - Monitoring/ evaluation of key watershed services - Community development including livelihood development - Policy and institutional development (including improvement of investme	DENRregional offices, FMB, ERDB, PAWB, NAMRIA, UPLB-CFNR, FPRDI	DPWH, NIA, upland communities, educational institutions, NGOs, LGUs	-	- Increased land use cover - Protection of rare/threatened flora and fauna - Reduced erosion rate - Improved stream flow, increased volume of carbon sequestered - Increased agricultural production - Reduced area of slashand-burn agriculture - Land use cover maps of watersheds - Number of areas identified for potential Protected Area management - Number of areas potential for REDD identified - Number of seed production areas and clonal nurseries established - Number of IEC/capacity	5-10 years	50 million
1.2.2.Integrated Water Resources Management (IWRM)	Improvement of water resources management and governance	Sustainable management and development of watersheds by stakeholders	Rehabilitation of prioritized watersheds (e.g., watersheds of Amburayan River, Bito River, Libuganon river etc.), including the following: -Establishment of watershed database -Capacity building of stakeholders on mainstreaming climate change	DENR-FMB and its regional offices	DA-NIA, DPWH, LGUs, DAR, upland communities, educational	-	- Assessment report on soil and water conservation measures - report on updated watershed information Informed and capacitated stakeholders	Ongoing under DA's own funds	DA's funds under regular program
2. Mitigation									
2.1 Land use, land use change and forestry									
2.1.1 Afforestation/ Reforestation	Wood fuel plantations/ biomass energy systems development	Fuelwood plantation establishment; use of wood from sustainably managed plantation as source of energy	- Assist communities dependent of fuelwood to develop fuelwood plantations -Provide efficient technologies for charcoal production Research on biomass to energy technologies - IEC, capability building on technology application - Upgrading of research laboratories and ICT facilities - Enzyme-processed green charcoal and bioethanol production wood	DENR regional offices, FMB, ERDB,UPLB CFNR and other educational institutions,FPRDI, local communities dependent on fuelwood and charcoal production	LGUs, NGOs	-	- Area of fuelwood plantations developed, - Number of families participating - Amount of carbon sequestered	5 years	15 million

Sector/Theme	Outcome	Strategy	Activity	Implementing Agency	Implementing Partner	Donor	Measurable Output/Target	Timeframe	Cost(USD)
	Natural resources and environment of watersheds restored	Improvement of the management of watershed resources in the upper river basins of selected watersheds	Technical assistance, loan and small grant projects for Integrated Natural Resources and Environment Management Project (INREM) – TA: (Phase 1) For priority watersheds in selected river basins, preparation of the strategy and investment program including its strategic environmental assessment, climate change implications, associated adaptation measures, and national food requirements (Phase 2) A feasibility study for a sector development program – Loan: Reforestation and assisted natural regeneration in Chico, Agno, and Marikina in Luzon; Tigum Aganan and Wahig–Inabanga in the Visayas; and Lake Lanao and Muleta/Manupali watersheds in Mindanao – Small Grant: – Formulation of a replicable GISbased climate impacts risk atlas for the loan target watersheds – Formulation of an integrated adaptation risk management plan – Adaptation campaign for watershed management – Preparation of sample templatefor operational guide to adaptation	DENR		ADB	– TA * Strategy and investment program for priority watersheds in selected river basins * Feasibility study report * Policy reform agendas identified – Loan * TBD. – Small grant * A replicable GIS–based Climate Impacts Risk Atlas * Integrated Adaptation Risk Management Plan * Sample Template Adaptation Operational Guide	TA: Completed Loan: 6 years (2010 –)	TA:1.15 million Loan:165 million Small grant:100,000
Forest protection	Conservation of natural forest and reducing emission from deforestation and forest degradation (REDD)	Protection and conservation natural forest ecosystems	– identify existing natural forests including mangroves – develop and implement protection measures involving local communities – Provide scheme for compensating local communities – IEC capability building	Local communities in and around	DENRregional offices, FMB, PAWB,	–	– Area protected and conserved – Amount of carbon pool in the conserved forest areas	5 years	5 years
Mangrove restoration	Restored mangrove forests of typhoon and flood–prone coastal communities in the Philippines	–Enhance coastal habitat of existing mangrove and beach type forest and enpowerment of coastal communities on climate change	– Rehabilitate and restore degraded coastal areas – Enhance existing mangrove and beach type forest habitats in the coastal zones – Capacitate coastal communities on climate change impacts (typhoon–prone areas in Bicol region)	State Universities & Colleges (c/o PCARRD)	–	–	–	3 years	270,000

Meeting / Field Memo

No. of Memo: 1	
1. Topic/Purpose	Meeting with Foreign-Assisted & Special Projects Office (FASPO), DENR
2. Participants	Ms.Cristina M.Regunay, (OIC-Chief, Multilateral Investments Program Division, MIPD)
3. Place	FASPO conference room
4. Date & Time	07 June 2010, 10:00 – 12:00

5. Points of Discussion/Observation

(1) In January 2010, the Strategic Planning workshop was organized by GEF to identify the priority projects with CEPF.

(2) Basically, the past/on-going projects by donors regarding the bio-diversity and climate changes are classified in grant-aid with ADB, WB, GTZ, KFWU, and project-typed-aid with USAID. Among them, WB-GEF funded to "Philippines Climate Change Adaptation" and GTZ to "Adaptation to Climate Changes-ACC". Also, ADB has currently implemented "Integrated Coastal Resource Management Project", which consists of Institutional and Policy Development, Coastal resource assessment and covers region 2,7,3,5 and 1. B

(3) Regarding Integrated Coastal Management, there is Executive Order issued by DENR.

(4) Currently DENR is under rationalization to right-size each bureau considering their mandates. The administration units of each bureau will be unified under the department. During the process of the rationalization, there was a discussion to abolish ERDB although the bureau was maintained finally considering the possibility to set the research center under ERDB.

(5) As per REDD, FMB is currently working on the preparation of the National Strategy. GTZ is also supporting the REDD implementation.

(6) In the coastal resource management project, BFAR is collaborating in the livelihood assessment.

(7) In listing the potential projects, It is recommended to refer to the project list prepared by JICA Study Team on Climate Change.

6. Notes/Issues:
(1) The team will organize a meeting with Ms.Moonie from EcoGov-2 on June 07.

Meeting / Field Memo

No. of Memo: 2	
1. Topic/Purpose	Meeting with Department of Tourism
2. Participants	Mr. Rolando (Director of the Office of Tourism Development Planning), Yoshioka
3. Place	Office of Tourism Development Planning
4. Date & Time	07 June 2010, 15:00 – 17:00

5. Points of Discussion/Observation

(1) Currently the technical cooperation on tourism statistics has been implemented with the support from JICA. The project targets region 2, 4, 6 and 7 with an aim to develop the capacity of regional officers in grasping the tourism trends, such as No. of visitor, the place to stay, duration of stay, etc.

(2) For the ecotourism development, DOT is responsible for the planning. In case of protected area, DOT coordinates with PAWB for acquisition of the relevant information. LGU is implementing agency of eco-tourism together with the private sectors.

(3) In 2002, National Ecotourism Strategy was developed. NES describes the setting up of the committee

which members are PAWB and DOT. The guidelines for the implementation of the strategy are yet to be developed.

(4) Also, the Standards and Certificates for eco-tourism activities and relevant facilities, such as eco-guiding, eco-lodges, and eco-tour, was developed. The office of tourism standards under DOT is responsible for certification. With the certification, the titular such as LGU and private sector will obtain benefits regarding tax payment, employment, and duties for importing goods. There is no obligation to obtain the certification and it is voluntary-based system. Up to date, 3 eco-lodges and 2 eco-tours were certificated under the system.

(5) NZ-AID has supported DOT in 1) preparation of the NES, 2) Implementation of NES, such as the development of the standards and certification, and 3) implementation of the business model programs in Banawe (tour guide program), Hunded islands (by youth group), Bohol (dolphin watching organized by the fisherfolks), Lake Sebu(handicraft by women), Mt. Mayon (trekking, handicraft). DOT has been charge in preparation of the eco-tourism development plan, community organization, implementation of the trainings, and monitoring.

(6) Also, JICA has provided assistance for the master plan study and loan project in the tourism development in Palawan. The loan project is composed of i) ECAN zoning by DENR, and ii) Prevention measures against the soil erosion by DPWH. Further intervention by JICA can be implemented in the other areas, such as Visayas, since there has been concentrated in Northern Palawan.

(7) GTZ implemented ecotourism program, named BIMP.

(8) Issues discussed at the eco-tourism committees are i) unification of the understanding of the definition of "eco-tourism" and ii) making the development plan of eco-tourism to implement NCS.

(9) Based on the above issues, there are some potentiality in implementing the projects such as 1) preparation of the development plan of NCS with guidelines and 2) communication plan (IEC).

6. Notes/Issues:
(1)

(Meeting)/ Field Memo

No. of Memo: 3	
1. Topic/Purpose	Meeting with FASPO, staffs working at ADB and USAID projects relevant to coastal resource management.
2. Participants	Ms. Moonyeen Manrique (Staff of FASPO, also working in EcoGov funded by USAID), Ms.Juanita. S. Nacino (Staff of FASPO, working in ICRMP funded by ADB, Yoshioka
3. Place	Office of FASPO
4. Date & Time	08 June 2010, 09:00 – 12:00

5. Points of Discussion/Observation

(1) EcoGov funded by USAID consists of 2 phases: EcoGov1 composed of 1) forest management, 2) Coastal management and 3) solid waste, focusing on planning, EcoGov2 composed of same topics as Ecogov 1 plus Sanitation, focusing more on implementation steps.

(2) EcoGov2 aims to enhance capacity development of government agencies, such as FMB, PAWB, EMB-DENR and LGUs in their jurisdiction area.

(3) In project implementation, co-management agreements are concluded by DENR with other

government agencies based on the necessity.

(4) Under EcoGov, the coastal resource management includes zoning plan such as MPA plan, CRM plan and fisheries plan which require law enforcement.

(5) There are conflicts between Municipality and DENR in the jurisdiction of the coastal area, since BFAR issues fish pond lease agreement, DENR for foreshore lease agreement, CBFMA and mangrove. In addition, LGUs can proclaim MPAs under municipal ordinances.

(6) The preparation of ICRMP can commence from participatory coastal resource appraisal which require community's involvement to determine the existing resources in the coastal area.

(7) EcoGov mainly have assisted LGUs to proclaim MPAs with assistance from PAWB, BFAR and regional offices.

(8) It is possible for LGUs to form coastal alliance of LGUs.

(9) The difficulty in CRM is how to find the financial sources since investment on MPA does not generate revenues. Therefore, Ecogov also promote capacity development of livelihood activities and eco-tourism.

(10) Ecogov has a component of coastal law enforcement which support LGUs in patrolling boat and equipping with radio system to regulate the illegal activities.

(11) ICRMP is a loan project funded by ADB started in August 2007 which has project components such as policy and institutional strengthening for PAWB, implementation of ICRM and biodiversity conservation, enterprise development and social and environmental services and facilities (LGU).

(12) There is EO533 regarding ICRM. As assistance from ICRMP, the activities programmed under policy strengthening are delineation of responsibilities, user fees and resource rents for coastal resources, such as mangrove, coral reef, beach, foreshore fisheries, and mariculture, marine and coastal pollution, mangrove management, foreshore management, and coastal ecotourism.

(13) Preparation of ICRM starts from PCRA by BFAR, then Municipal Coastal Environment Profile which cover from upland to coastal area are prepared. Based on the MCEP, ICRM plan shall be prepared. The plans are reviewed by PAWB under ICRMP.

(14) ICRMP covers 5 regions such as region 2,3,5,7, and 11. Each region shall have the centers for biodiversity monitoring and IEC. The project aims to capacitate 30 researchers.

6. Notes/Issues:
(1) Project evaluation document of ICRMP, some reports of EcoGov were provided.

Meeting / Field Memo

No. of Memo: 4	
1. Topic/Purpose	Meeting with Bureau of Aquaculture and Fisheries, Department of Agriculture
2. Participants	Mr. Gil A. Adora,(Assistant Director of BFAR), Yoshioka
3. Place	Office of Assistant Director,BFAR
4. Date & Time	08 June 2010, 16:00 – 17:30
5. Points of Discussion/Observation	

(1) BFAR is incorporate in ICRM for livelihood development, especially in preparation of inventory of livelihood projects relevant to fisheries and provision of training to the fisherfolks.

(2) BFAR has offices at 3 levels: National responsible for overall direction of implementation of the

activities, regional responsible for implementation of projects in provinces and municipalities, and provinces which coordinates with LGUs in implementation.

(3) The principal law in the fishery area is fishery code.

(4) BFAR provide technical supports for seaweeds production, such as establishment of nurseries, material inputs, organizational supports, and research activities in laboratories. There is collaboration of research activities with the universities.

(5) There are some initiatives on survey on Climate Change impacts on coastal resources by the universities.

(6) As a strategy in fisheries, National Fishery Strategy Plan was developed in 2007. National Seaweeds plan, which aims to develop the technology of cultivation, was also prepared in 10 years ago.

(7) About the coastal resource management, there is overlap of jurisdiction between BFAR and LGU since each can establish fish sanctuaries under their regulations.

(8) With regards to the issues of coastal and marine resources are degradation of habitat and resources, lac of capital financing to the fisherfolks, lack of industry and marketing, and pollution by the sedimentation.

(9) For cultivation of seaweeds, Mindanao is one of the recommended sites for its climatic characteristics.

6. Notes/Issues:
(1) The information such as National Fishery Industrial Strategy and organization structure of BFAR will be provided.

(Meeting)/ Field Memo

No. of Memo: 5	
1. Topic/Purpose	Meeting with Ecosystem Research and Development Bureau, DENR
2. Participants	Mr. Marcial C.Amaro, Jr,(Director of ERDB), other division chiefs, Yoshioka
3. Place	ERDB conference room
4. Date & Time	10 June 2010, 15:30 – 18:30

5. Points of Discussion/Observation

(1) ERDB is a research body in DENR which consists of 9 divisions and 1 experimentation center.

(2) Coastal resource division has 20 staffs. Their main area of research activities are biodiversity, bio-safety, bio-security, and climate change. The division has 2 laboratory coworking with NGO and JIPRO so far.

(3) ERDB has submitted a proposal to JICA on Carbon flags tower (?) to measure the carbon stocks, which was not accepted.

(4) ERDB has interest in implementing the basic data collection at the protected area to set up the baselines which are necessary for biodiversity monitoring.

(5) ERDB has been financially supported by the organizations such as DOST, NRCD, NAPCOR, LLDA, Michigan State University, ACIR, AusAIR, MGB, UNDP, FAO, EU, JICA, and GTZ.

6. Notes/Issues:
(1) The list of proposal research activities by ERDB was given.

Meeting / Field Memo

No. of Memo: 6	
1. Topic/Purpose	Meeting with Conservation International
2. Participants	Mr. Enrique A Nunes, Ma.Agnes M.Payson, Juan R Acay (CI), Yoshioka
3. Place	CI meeting room
4. Date & Time	11 June 2010, 11:00 – 13:00

5. Points of Discussion/Observation

(1) CI has implemented REDD relevant activities in Northern Luzon supported by TOYOTA. There are demonstration plot of CO2 sequestration which has also project components such as reforestation in PAs and livelihood activities. Currently the site obtained Gold Level under CCB standards.

(2) There are 4 major intact forests in Philippines, such as Sierra Madre, Samar Island, Palawan and Eastern Mindanao (terrestrial biodiversity), Sulu-Sulawesi and Verde Passage Island (marine biodiversity).

(3) Japanese NGO, More Trees also supports CI's activity in Northern Luzon for carbon offset trade, sequestration and validation.

(4) CI is trying to connect PAs in important corridors such as Sierra Madre with possible establishment of REDD+ plots.

(5) In Verde Passage, CI is working on PES at Bandai dada with the private company, First Gen.

(6) Relevant to protection of Verde Passage, EO 578 has issued.

(7) Under CI's activities on coastal resource management in Verde Passage, Joint protection order has been issued by the municipalities Looc and Lubang.

(8) In the coastal resource management, there is perception mapping process where the community identify the resources in and around their locality including fish resources with an aim to identify MPAs as well as to delineate "no take zone", " fish reserved area (hook and line)" and "fishery reserved area".

(9) Under CI's projects there has been prepared MOA with Philippines National Police to regulate illegal fishings.

6. Notes/Issues:
(1) Continuous discussions more focusing on CTI will be done in 15 June.

Meeting / Field Memo

No. of Memo: 7	
1. Topic/Purpose	Meeting with EMB, officers in charge for IACCC
2. Participants	Ma Gerada Asuncion (EMB, IACCC), Yoshioka
3. Place	EMB office
4. Date & Time	11 June 2010, 13:15 – 14:00

5. Points of Discussion/Observation

(1) Currently, the report on 2nd communication for CC is under preparation. It is expected to finalize in the end of this month.

(2) Philippines is not applied NAPAs which just is applicable for LDCs. There are some listing activities by sector to prepare NAMAs.

(3) Climate Change act was issued in 2009. And climate change office was established under DENR and now is supported by GTZ.

(4) Although there were some trials to prepare PDD for ARCDM, there have been no projects implemented due to the complication of application system.
6. Notes/Issues: None

Meeting / Field Memo

No. of Memo: 8	
1. Topic/Purpose	Meeting with PAWB
2. Participants	Dr. Antonio C. Manila (Assistant Director of Protected Area and Wildlife Resources), Mr. Carlo C.Custodio(Chief of Ecosystems Management Specialist, PAWB), Yoshioka
3. Place	Office of Assistant Director
4. Date & Time	11 June 2010, 16:40 – 18:30
5. Points of Discussion/Observation	
(1) The main policies for biodiversity conservation in the country are NBSAP and CTI-NPOA. (2) As per the on-going projects on coastal resources management, ICRM has been implemented with ADB and GEF, which focuses on implementation of ICRM plan with the detailed action plans. ICRM will finish in 2 years and progress is still 20 % possibly due to the complexity of the fund mobilization from ADB, GEF and the government. So far, 26 municipalities of total 80 municipalities drafted ICRM. (3) There is certain difficulty in setting up the data base due to difficulty in collecting data and suppoting funds. (4) Under ICRMP, the baseline for each target area shall be collected for monitoring use in order to examine the impacts by the implementation of ICRMP on coastal resources. (5) With an aim to manage PAs in a sustainable manner, the community-based projects have been implemented at PAs. (6) There is necessity for some technical measures to control invasive species as lake management. (7) As per CTI, the protected area management unit and biodiversity management unit are responsible.	
6. Notes/Issues: (1) Continuous discussions more focusing on possible intervention on biodiversity shall be discussed on 17 June.	

Meeting / Field Memo

No. of Memo: 9	
1. Topic/Purpose	Discussion about the potential interventions and possible candidate place
2. Participants	Ms.Neria A.Andin (Assistant Director, FMB), other unit chiefs, Mizuguchi, Yoshioka
3. Place	Office of Assistant Director, FMB
4. Date & Time	16th of June 2010, 14:30 – 17:00
5. Points of Discussion/Observation	
(1) CIDA has provided assistance in the preparation of National REDD+ Strategy. (2) A NGO named NTFP is also implementing REDD+ demonstration projects in Palawan. (3) There is a necessity to implement REDD+ preparedness activities in the country as well as the capacity development for FMB on REDD+. (4) Also some watershed approach project with an aim of biodiversity conservation can be implemented	

under FMB which aims to apply REDD+ and PES in the watershed level.

(5) It is planned to implement Yen Loan Attached TA, training component of FMP.

(6) PAWB does not have much experience in loan projects.

6. Notes/Issues:
(1) 17th July, the meeting with Regional Director with the Study Team will be organized for necessary arrangement for the field visit.

Meeting / Field Memo

No. of Memo: 10	
1. Topic/Purpose	Discussion about the potential interventions and possible candidate place
2. Participants	Mr. Carlo C.Custodio(Chief of Ecosystems Management Specialist, PAWB), Mizuguchi, Yoshioka
3. Place	Office of Ecosystem Management, PAWB
4. Date & Time	17th of June 2010, 14:00 – 17:00

5. Points of Discussion/Observation

(1) As per coastal resources management, there have been projects implemented by donors. Although sometimes Integrated Coastal Management Plan is not working (currently there are more than 100 LGUs with ICM plan) since there is no detailed action plan. Since the LGUs are main implementing body, the instability of leadership affects the implementation of ICM plan. To make ICM plan more sustainable, the projects need to focus more on the capacity development of the communities so they can work without depending external factors.

(2) USAID's coastal resource management projects had output indicator, but there was no evaluation of the outcomes of the project which let the stakeholders to consider the results in long term.

(3) There are some initiatives by DENR to reforest mangrove at the abandoned fishpond areas.

(4) In 2003, it is estimated that there is 450,000 ha of mangrove area (249,000 rehabilitated and 100,000 natural-grown) in the country.

(5) In terms of the importance of the biodiversity in the country, Verde Passage is known as their richness of biodiversity, where Conservation International has implemented projects.

(6) Regarding the jurisdiction of LGUs in the coastal area, the definition of Municipal water is less than 15 km.

(7) There is a necessity to strengthen the networks of the protected area for corridor conservation.

(8) Even though ADB has implemented Integrated Coastal Resource Management, there are still many municipalities which need such an intervention.

(9) As per mangrove plantation, there are existing projects at Bohol. In Getafa, there are 1,500 ha of mangroves with seaweed production. It is estimated that there is still 1,000 ha of expansion of mangrove coverage. There are 5 POs developed in the northern Bohol.

(10) In terms of suitability for the plantation, acceptance of the community, willingness by LGUs, Bohol can be the potential area for the establishment of mangrove plantations.

(11) In Bohol, there are also national park in BIllar with 9,350 ha of PA.

6. Notes/Issues:
(1) Contact of PENRO, Bohol was given.

Meeting / Field Memo

No. of Memo: 11	
1. Topic/Purpose	Discussion of ideas by JICA Study Team on possible biodiversity conservation projects
2. Participants	Dr. Antonio C. Manila (Assistant Director of Protected Area and Wildlife Resources), Mizuguchi, Yoshioka
3. Place	Office of Assistant Director
4. Date & Time	22 June 2010, 10:00 – 12:00

5. Points of Discussion/Observation

(1) Regarding the protection of Tuna, it is important to exchange the research information of Tuna, such as Bluefin Tuna since Philippines are the place for spawning.

(2) There is necessity to conduct forest inventory since the previous survey was done in 1998. Even FMB has updated the forestry statistics annually, there seems to be no changes in the coverage of natural forest since then.

(3) Currently there is a proposal to change the forest act, which was issued in 1978. There have been discussions in last 5 congresses.

(4) Regards the master plan of inland waters, there is some initiative in Laguna Lake to develop the plan. However, still there is necessity to develop it in other important inland waters.

(5) There is a necessity to tackle with invasive species, especially which introduced in the inland, such as janitor fishes.

(6) Still there are not so much initiatives in implementation of Integrated Coastal Resources Management in MPAs. Under NIPAS, there are still 10 to 15 MPAs, while more than 500 MPAs under municipality.

(7) In MPAs, the fishery activities are permitted based on the internal rules of regulation based on the zoning.

(8) In order to manage MPAs, community based protected areas management approach can be applied. Already there are some initiatives in Tubahata island and Arastayasan Island. In some cases, the private sectors also participated in conservation of MPAs, such ash Maranpaga Natural Gas.

(9) Some PAs has land tenure issues. In addition, there are conflict between management bodies such as LGU and LLDA.

(10) There is difficulty in data sharing especially in regional level due to difference of permissible level by the government to access the information.

(11) PAWB has no experience so far to work with JICA Loan.

(12) JICA supported in development of NIPAS law in 1992 and JWRC also collaborated in some research activities.

(13) In community-based activities, staffs of CENRO work together with POs in coordination with NGOs.

(14) In involvement of local communities in the PA management, there is PACBARMA(Protected Area Community-Based Resources Management Agreement), which is similar to CBFMA. There are 50 PACBARMA, so far.

(15) Regards the regulation for the cutting mangroves, RA761 bans the cutting of mangroves. Accordingly, mangroves are expected as function just for restoration and protection.

(16) There is a possibility to apply REDD for mangrove related activities.

(17) Community involvement is required for forest protection. They can participate as forest rangers

voluntary in coordination with the DENR.
6. Notes/Issues: (1) The submission of the final report will be on 24th 8:00 am.

Meeting / Field Memo

No. of Memo: 12	
1. Topic/Purpose	Discussion of ideas by JICA Study Team on possible forestry projects
2. Participants	OIC for the Assistant Director, Ms Yago(JICA), Mizuguchi, Yoshioka
3. Place	FMB, DENR
4. Date & Time	22 June 2010, 14:30 – 15:00
5. Points of Discussion/Observation	
(1) As per the needs identified, there is a necessity to develop the forest resources map since there has been no update since 2003. (2) With regards to the preparation of the integrated watershed management plan, already there have been some initiatives at around 100 watersheds with the integrated watershed management plan. (3) In order to implement the proposal FMB hope JICA could facilitate to reach some fund sources.	
6. Notes/Issues: (1) The list of watersheds with integrated watershed management plan and sample of the plan shall be sent by e-mail.	

Meeting / Field Memo

No. of Memo: 13	
1. Topic/Purpose	Discussion of possible coordination with ACB in biodiversity projects
2. Participants	Mr. Rodrigo U. Fuentes (Executive Director of ASEAN Center for Biodiversity), , Mr. Reynaldo F. Molina (Resource Mobilization Specialist, ACB) , Ms.Yago (JICA), Yoshioka
3. Place	EMB-DENR
4. Date & Time	22 June 2010, 15:30 – 17:00
5. Points of Discussion/Observation	
(1) ACB is planning to create the trust bank for biodiversity conservation named Asian Biodiversity Fund which has function as self-recovery fund at regional level. (2) ACB is a coordination body in 1) implementation of capacity development, 2) dissemination of biodiversity information, 3) Public awareness raising, and 4) policy development at regional level. In total there are 15 technical in 4 units, each for abovementioned tasks. ACB can find the suitable resources to enhance the capacity of the stakeholders of biodiversity conservation, e.g., government agency and academic researchers. (3) Currently, ACB is coordinating with the Ministry of Environment in Japan for implementation of ESABI (East South Asian Biodiversity Information Center), which focuses on capacity development of resources in the Asian countries in the area of Taxonomy. Also, there has been coordination with JICA's mangrove project in Indonesia for capacity development, information management, IEC and biodiversity information. (4) ACB aims to fill the knowledge and technical gaps between Asian countries on biodiversity conservation. Currently the focusing areas of ACB are 1) invasive species, 2) ABS, 3) Climate Change, and 4) wildlife illegal trading. (5) As per CTI, ACB has been coordinated with ADB on consultative basis. It is considered that ACB can	

contribute to CTI in terms of knowledge and information management since there have been implemented relevant researches, such as Marine Gap Analysis in coordination with WWF to analyze the effectiveness of the protected areas.

(6) In collaboration with other donors such as USAID, ACB can support organization of trainings and forums sharing the cost based on the agreement.

(7) ACB has supported Asian countries in the establishment of Clearing House Mechanism, an information system of biodiversity conservation. Data base development takes time and ACB provides continuous trainings to the government agencies.

(8) ACB has willingness to join in regional initiatives and promote use of their existing data/information considering their function as a regional research center.

6. Notes/Issues:
(1) Guidebook for establishment of Marine Gap Area shall be sent by e-mail.

Meeting / Field Memo

No. of Memo: 14	
1. Topic/Purpose	Discussion on potential needs identified by the Study Team for ecotourism development
2. Participants	Mr. Rolando (Director of the Office of Tourism Development Planning), Ms.Yago (JICA), Mizuguchi, Yoshioka
3. Place	Office of Tourism Development Planning
4. Date & Time	23 June 2010, 09:00 – 10:00

5. Points of Discussion/Observation

(1) The preparatory study on yen loan projects on sustainable tourism management was conducted in February, 2010. The project titled "Central Philippines Comprehensive Infrastructure Development Project which consists of 1) capacity development of the stakeholders, 2) ECAN zoning, 3) Soil conservation measures and targets Palawan, Bohor and Cebu. The project includes environmental components under CTI flame which require coordination with DENR in such projects as declaration of MPA, zoning and coastal resource management. The proposal of the project was already submitted to NEDA. It is not still clear the timing of sending the appraisal mission for the project.

(2) The implementation status of the National Ecotourism Strategy(NES) is summarized as follows:

- Development and institutionalization of eco-tourism ethics, institutional guidelines and inventory/database of eco-tourism sites and products: Just inventory of the sites is on-going due to the budget limitation.
- Enhancement of awareness of eco-tourism among local stakeholders: Some IEC materials have been produced, working with media for PR of ecotourism area.
- Establishment of eco-tourism network: The newsletter was used to be published and distributed to the stakeholders, but the activities have not been continued due to the budget limitation.
- Capacity building of the relevant stakeholders: The private sector has some initiatives to set up the ecotourism school in Subic with support from Pacific Travel Association and LGUs

(3) There was consultation by NZAID to start the project on eco-tourism development, especially in development of the products and information dissemination of tourism

(4) There is a necessity to revise NES periodically. Due assistance can be consider under Yen-loan

technical cooperation (JICA office)

(5) Regards eco-tourism standards, regulations and accreditations, still there is no necessity to revise, but capacity development for the stakeholders shall be required considering the current situation that still limit number of entities working on accreditations/standards.

(6) The information system needs to be strengthened through web-pages since DOT receives many inquires on eco-tourism. Besides setting up the system, the focus shall be put on the collecting the information required.

(7) As per the carrying capacity of the site, DENR is responsible for visitor management. To date, there is no the baselines for limitation of visitors and carrying capacity of the sites.

6. Notes/Issues:
(1) Final report of the study will be submitted to DOT in the next week.

案件候補概要表（プロジェクトプロファイル）

国名：ラオス

タイトル	FRCD 職員のうち、特に Management Unit 職員の保護区管理及び生態系保全に関わる技術の能力強化
背景	ラオス国では、農林省森林局森林資源保全課が、生物多様性保全区域（National Biodiversity Conservation Area：NBCA）を設定し管理している。これまでに全国 23 箇所の NBCA が設立され、農林省の県農林事務所（PAFO）及び郡農林事務所（DAFO）が現場の保護区管理を行っている。 ラオス国では、森林被覆率は依然として高く、豊富な生物種を擁し、他の東南アジアの国と比較して天然資源が豊かな状況にある。しかしながら、森林被覆率は低下傾向にあり、天然林の面積は年々減少しているなど、森林の質の低下は著しい。森林荒廃は、森林を生息域とする生物種にとって大きな脅威となっている。 NBCA は、主に各国ドナー及び NGO の支援の下で管理が行われているが、それらはプロジェクトベースでの支援となり、支援が終了すると管理活動も滞りがちとなり、自立発展性の確保が大きな課題となっている。特に、現場レベルの管理責任を有する PAFO 及び DAFO 職員の能力向上は、NBCA 管理を進める上で大きな課題となっている。
プロジェクト目標	全国の NBCA の現場管理主体である PAFO 及び DAFO 職員の保護区管理に関する知識、管理能力が強化され、ラオス国において生物多様性保全管理に関する知識が集積される。
プロジェクト対象地域	全国
実施機関	農林省森林局森林資源保護課（FRCD）、PAHO、DAFO
主要活動	• NBCA 管理ユニットを中心とした現場管理職員の研修ニーズの把握 • 林業研修センターにおける、FRCD 職員による生物多様性に関するカリキュラム作成支援 • 各種マニュアル、ガイドラインの策定 • 全国の NBCA 管理ユニット（PAFO、DAFO）職員の研修実施支援（NBCA 周辺の住民の啓蒙普及、住民参加型アプローチ、住民との協働管理/パトロールシステム、生計向上支援、保護区のゾーニング、エコツーリズムシステム、資金調達システム　等） • トレーニングセンターにおける人的資源データベース作成支援 • 各 NBCA で実施されているパイロットプロジェクトの成果（能力開発支援、管理活動支援の内容等）の蓄積作業の支援 • 蓄積された各種パイロットプロジェクトの成果を分析し、全国の NBCA 管理ユニットにフィードバックするシステムづくりの支援
実施期間	3～5 年間
実施スキーム	専門家派遣/技術協力事業
投入（想定される専門家）	長期専門家：研修計画 短期専門家：GIS、データベース構築、住民参加型保護区管理、組織開発、エコツーリズム
期待される成果	• 全国の NBCA 管理ユニットの職員の NBCA 管理に関する能力が向上し、NBCA 管理が改善する。 • 林業研修センターがラオスの生物多様性保全に関わる各種情報（人的リソース、カリキュラム、ガイドライン等）を整備し、情報ソースとしての役割を有するようになる。
環境社会面で配慮すべき事項	特に無し。
補足	特になし。

案件候補概要表（プロジェクトプロファイル）

国名：ラオス

タイトル	**農林省　畜産・漁業局　漁業課を対象とした政策支援及び基礎情報データベース構築支援**
背景	ラオス国では、NBCA 区域以外の箇所における水生生物・野生生物の保全について、農林省畜産・漁業局が法令整備、政策提言、各種ガイドライン・マニュアル等の作成を担っている。しかしながら、直接の担当部署である漁業管理課では、2009 年に漁業法を整備したばかりで、淡水生態系の保全管理のために必要な法令・政策は、未だ整備されていない。また、淡水生態系に関する位置情報、生物種情報、利用状況などの基礎的情報も未整備である。 これらの整備が遅れている背景として、当該責任部局である漁業管理局の職員の能力の不足が挙げられる。彼らは生物多様性保全に関する知識が乏しく、政策案作成のための基礎的知識が不足し、政策の方向性を検討することが難しい状況にある。 ラオスにおける淡水域生態系は、地方の農民にとって重要な蛋白質供給源であるため、生態系の利用と保全の間で対立が生じている状況にある。結果として、生物多様性保全に係る政策の整備と、的確な管理の実施に係るニーズが高く、管理主体である漁業管理課に対して、基礎情報データベースの整備、政策案作成に対する支援が必要である。
プロジェクト目標	本提案プロジェクトの目的は、NBCA 以外の淡水生態系保全管理のための政策提言の責任機関である、農林省畜産・漁業局漁業管理課に基礎情報データベースが構築され、政策案作成及び関係政府機関への説明と協議が進められ、淡水生態系保全管理に係る政策案が最終化されることである。
プロジェクト対象地域	全国
実施機関	農林省　畜産・漁業局　漁業管理課（FCD）
主要活動	• 既存政策及び情報のレビューを通じた必要な政策と情報データベースの検討 • 基礎情報データベース（GIS データシステムを含む）の構築支援 • 淡水生態系保全を進めるための政策案の作成と関係機関への説明・協議
実施期間	3 年間
実施スキーム	専門家派遣/技術協力プロジェクト
投入（想定される専門家）	長期専門家：淡水域生物多様性政策 短期専門家：GIS、データベース構築
期待される成果	淡水生態系に関する基礎情報データベースが整備され、且つ淡水生態系の保全・管理に資する政策が承認されることで、漁業管理局がラオスに分布する生物多様性保全の観点から重要な湿地や湖沼などの淡水域を適正に管理する準備が整う。
環境社会面で配慮すべき事項	特に無し。
補足	WWF が淡水域での住民参加型漁業資源管理事業を進めており、これらの活動との整合性を保つよう留意する必要がある。

案件候補概要表（プロジェクトプロファイル）

国名：カンボジア

タイトル	**森林局及び自然保護局職員の保護区管理能力の強化支援**
背景	カンボジアは、近年急速に森林荒廃が進んでいるものの、未だ国土面積の約 60%は森林が残存し、東南アジアにおいては貴重な陸上生態系を残している国の一つである。その豊富な森林資源を反映して、同国は国土の約 26%を保護地区と指定し、政府による管轄下においている。保護地区は、農林水産省森林局と環境省自然保護局によって、別々のシステムに準じて管理されているが、両組織とも保護区管理を十分に進めるだけの体制が整備されておらず、多くの保護区はドナーや NGO によって保護活動が行われているのが現状となっている。特に、生物多様性保全や保護区管理は、カンボジアにとって新しいテーマであるため、中央及び現場レベル共に、必要な人材が不足している。 一方で、JICA はこれまで森林分野の人材育成に焦点を置き、2000 年の初めから協力を行ってきた。森林法の理解を深めると共に、森林技術（育苗、育林）やコミュニティフォレストリーに関わる技術を中心に研修を行い、森林管理を進めるのに必要な人材の育成に貢献してきている。現在実施中の人材育成プロジェクト（フェーズ 2）は、2010 年 12 月に終了を予定しており、現在のところ後継案件の実施は予定されていない。
プロジェクト目標	人材育成プロジェクトで培われた研修実施に関わるノウハウや、整備された施設を活用し、森林局のみならず環境省自然保護局を対象に、生物多様性保全及び保護区管理に必要となる技術に関わる研修実施を通じて、同分野の中央並びに現場レベルの職員を育成することを目的とする。
プロジェクト対象地域	全国の森林局及び環境省職員
実施機関	森林局
主要活動	• 森林局及び自然保護局、並びに地方事務所職員の保護区管理と生物多様性保全に関わる研修ニーズの把握 • 研修ニーズと保護区管理の現状に応じた研修プログラムの策定 • 研修実施に必要なリソースパーソンの調達 • 森林局の Institute for Forest and Wildlife Research and Development による研修実施及び管理の支援 • 各保護区の状況や保護区管理に関わる活動や経験を共有するためのワークショップの開催
実施期間	3 年間
実施スキーム	専門家派遣及び JOCV 派遣
投入（想定される専門家）	長期専門家：保護区管理／研修プログラム作成 JOCV：研修支援
期待される成果	研修を通じて、保護区管理に関わる両組織の職員の能力が向上し、保護区の適正管理に貢献する。 森林局 Institute for Forest and Wildlife Research and Development の研修プログラムの実施・管理能力が向上し、政府機関職員の能力向上を進めるために有効な組織となる。
環境社会面で配慮すべき事項	特に無し。
補足	特になし。

案件候補概要表（プロジェクトプロファイル）

国名：カンボジア(ラオスを含む)

タイトル	保全の価値が高い保護地区､特に東北部に広がるベトナム／ラオスと国境をまたいだ保護地区の保全支援
背景	カンボジアは、近年急速に森林荒廃が進んでいるものの、未だ国土面積の約 60%は森林が残存し､東南アジアにおいては貴重な陸上生態系を残している国の一つである。その豊富な森林資源を反映して、同国は国土の約 26%を保護地区と指定し、政府による管轄下においている。貴重な森林生態系は、国境付近に多く広がり､特に東北部のベトナムとラオスの国境付近に多く残存している。東北部には保全区が連続して分布し､それは隣接するベトナム及びラオスの保護区とも隣接し、大型動物の貴重な生息域となっている。 一方で東北部は、土地の違法収奪や経済開発、焼畑農業の広がり、プランテーションの拡大などによって森林荒廃が進み、地域の生態系に脅威を与えている。また周辺国を含めた野生動物の違法な狩猟も大きな脅威となっており､隣接国を含んだ総合的な保護区管理の取り組みが必要とされている。
プロジェクト目標	東北部のベトナムまたはラオスと国境沿いに位置し､貴重な生態系を維持している保護地区を、隣接国との協調体制の整備と持続的資金メカニズムの検討･試行を通じて、適正且つ持続的に管理するための道筋を整備すること。
プロジェクト対象地域	以下に 2 つの地域の保護地区管理支援を検討する。現場での支援活動は、現在実施されている活動などを考慮して対象地区を決定する。 ● ベトナムーカンボジア国境にまたがる保護地区（Mondul Kiei 州(カンボジア)と Dak Lac 省（ベトナム)） ● ラオスーカンボジア国境にまたがる保護地区（Rattana Kiri 州(カンボジア)と Champasak 県（ラオス)）
実施機関	森林局、自然保護局(カンボジア)、Dak Lac 省(ベトナム)、森林局（ラオス）
主要活動	• 保全の価値が高い保護地区､特に国境をまたがる保護地区／貴重な生息域に関する現状調査（植生分布状況、野生動物の生息状況、地域住民による土地利用状況など） • 保護区管理上の問題、現在抱えている脅威などを抽出・分析 • 現在､保護区管理支援活動を行っている NGO を含めた保護地区管理に関わる協議に基づく保護地区管理活動の支援 • 保護地区管理に関わる政府職員に対する研修 • 地方政府(州・省・県政府)への保護地区管理／生息域管理の必要に関する啓蒙普及活動の実施 • 関連国の関係者が地域の保護地区／貴重な生息域の管理･保全について話し合う場の設立準備と設立のための政策作成支援 • 一部の保護地区での REDD パイロット事業の実施 • REDD パイロット事業の結果に基づく、持続的な資金確保メカニズムの仕組みに関わる政策案の作成
実施期間	5 年間
実施スキーム	技術協力プロジェクト
投入（想定される専門家）	• 長期専門家：保護区管理、REDD／森林保全、調整員 • 短期専門家：生計向上、研修、啓蒙普及、GIS／植生分析、動物管理など • JOCV（各国の保護地区管理支援及び現場との協調促進）
期待される成果	• 貴重な絶滅危惧種の保全・回復 • 持続的な保護区管理モデルの構築による他の類似地区への波及 • 地域住民の生計改善
環境社会面で配慮すべき事項	生計向上事業において、地域住民への利益の分配等に偏りが出ないよう、配慮する。
補足	ADB の Biodiversity Corridor Initiative が、同じ保護地区の周辺で生態系コリドーの整備と住民への能力向上活動を行っている。同活動と協調が欠かせない。

案件候補概要表（プロジェクトプロファイル）

国名：カンボジア

タイトル	トンレサップ湖 Biosphere Reserve のコア地区の適応管理に関わる能力向上
背景	トンレサップ湖は東南アジアで最大の湖で、世界でも有数の漁獲生産がある。トンレサップ湖周辺に広がる広大な洪水林が、その特徴的な水文環境とあいまって、多様で豊富な水産資源を生み出している。その特徴的で特別な価値から、トンレサップ湖とその周辺の洪水林は、ユネスコによって 1997 年 10 月に「人間と生物圏保全地区」として指定されている。 UNDP は、2002 年よりトンレサップ湖 Biosphere Reserve のコア地区管理の支援を目的とした Tonle Sap Conservation Project を実施してきた。プロジェクトでは、コア地区の生態系調査、コア地区周辺の社会経済調査、コア地区の管理計画の策定、周辺住民への啓蒙普及活動などを行い、コア地区の適正管理に貢献してきた。一方で、多くの活動がプロジェクト及びプロジェクトが雇用した NGO によって実施されたため、本プロジェクトの実施機関である自然保護局のコア地区管理能力は未だ限定的である。 同プロジェクトは 2010 年 12 月に終了し継続案件も予定されていない。自然保護局が今後継続してコア地区を管理するため、自然保護局職員に対するコア地区管理に関わる能力向上の支援が急務となっている。
プロジェクト目標	自然保護局職員が適応管理のコンセプトに基づいて、コア地区を適正に管理できるようになることを主目的とする。加えて、適応管理に必要な能力(モニタリング、データ収集及び分析、管理計画の反映など)が、OJT を通じて担当職員によって習得される。
プロジェクト対象地域	トンレサップ湖 Biosphere Reserve のコア地区
実施機関	環境省自然保護局
主要活動	• コア地区に関するモニタリングデータの収集方法の研修・OJT 実施 • 収集したデータに基づいた管理計画の改訂方法の研修・OJT 実施 • モニタリング指標の設定と管理計画変更方法に関わる研修・OJT 実施 • 関係者（漁業局、漁業者、住民、州政府）へのコア地区の状況と管理指針の発信・啓蒙普及 • 地域住民の生計向上支援（ADB 実施事業との協調） • 持続的な資金メカニズム（PES またはエコツーリズム）の導入検討及びパイロット活動の実施 • コア管理に関わる資金メカニズ確保を支援するような政策案の作成
実施期間	3~5 年
実施スキーム	技術協力プロジェクト
投入（想定される専門家）	• 長期専門家：適応管理、水産資源管理、調整員 • 短期専門家：生態系モニタリング、啓蒙普及、エコツーリズム、生計向上
期待される成果	• コア地区を含んだ Fishing lot が適応管理のコンセプトに基づき、利用と保全のバランスを保ちながら管理される。 • トンレサップ湖の漁業資源管理のモデルが確立される。
環境社会面で配慮すべき事項	生計向上事業において、地域住民への利益の分配等に偏りが出ないよう、配慮する。
補足	UNDP が 2003 年から Tonle Sap Conservation Project を実施。同プロジェクトは 2010 年に終了予定。

案件候補概要表（プロジェクトプロファイル）

国名：カンボジア

タイトル	トンレサップのサンクチュアリ及びメコン川上流の産卵場所での生態系ベースラインデータの整備とそのための能力強化
背景	トンレサップ湖は東南アジアで最大の湖で、世界でも有数の漁獲生産がある。2000 年には 200,000 トン以上の漁獲高を記録し、その生産価値は 1 億ドル以上と想定される。またトンレサップ湖はメコン川に生息する移動性の大型魚種の貴重な季節的な生息地にもなっており、カンボジアの淡水生態系の多様性を維持する場とも言える。このような豊富で且つ多様な資源を維持するために、カンボジア政府はトンレサップ湖に 8 つのフィッシュサンクチュアリを設定しているが、過去 50 年間、同サンクチュアリにおいて科学的調査は行われておらず、サンクチュアリとトンレサップ湖生態系の関係は十分わかっていないのが現状である。 またメコン川上流の水深が深い地区は大型魚類の産卵場所と考えられ、トンレサップ湖及びメコン川の水産資源及びその多様性の維持のために、適正に保全される必要があるとされるが、これまでに科学的調査が行われておらず、現状が十分把握されていない。 トンレサップ湖の水産資源の多様性に重要な地区と考えられるサンクチュアリとメコン川上流の産卵場所の生態系ベースラインデータは、同資源の適正管理と保全のためには欠かせないものと言える。
プロジェクト目標	本提案プロジェクトの目標は、漁業局と共同で同地区の生態系調査を実施し、同地区のベースラインデータの整備を支援すると共に、漁業局職員のデータ収集及び分析能力の向上を図ることである。
プロジェクト対象地域	トンレサップ湖フィッシュサンクチュアリ（8 箇所の内、数箇所を選定）とメコン川上流の重要産卵地区（1～2 箇所を選定）
実施機関	漁業局
主要活動	• トンレサップのフィッシュサンクチュアリ及びメコン川上流域の産卵場所の状況確認(今年 CI 支援でトンレサップのフィッシュサンクチュアリの概況調査を実施予定)と重要地区の同定 • 重要地区に対する生態系(生息魚種、水質、深度など生息域環境調査)の調査(乾季及び雨季) • 調査方法のマニュアル化 • 調査結果に基づく、調査実施重要地区の管理方法の提案 • 調査実施地区のメコン-トンレサップ水系への魚資源確保貢献度の評価 • 他のサンクチュアリのモニタリング・管理方法の提案
実施期間	3 年
実施スキーム	技術協力プロジェクト又は JST
投入（想定される専門家）	• 専門家：淡水魚専門家、水質分析、両生類専門家、水生植物、水文など
期待される成果	本提案プロジェクトと収集されるデータは、トンレサップ湖の水産資源の管理の基礎データとなる。同データの整備によって、湖の漁業活動による水産資源への影響をモニタリングし、漁業活動の管理へ反映させることが可能になる。
環境社会面で配慮すべき事項	特に無し。
補足	Conservation International が漁業局の委託を受けて、一部サンクチュアリの調査を実施予定である。同調査結果の活用が期待できる。

案件候補概要表（プロジェクトプロファイル）

国名：ベトナム

タイトル	全国の Wetland に関する既存データのレビュー、データベース構築及びマスタープランの作成
背景	ベトナム国では、湿地（Wetland）の保護は、天然資源環境省(MONRE)の管轄となっている。MONRE は、湿地（Wetland）保護と持続的開発に関する法令（Decree No.109/2003/ND-CP）を策定し、これの実施に係る通達を 2003 年 8 月に制定した（Circular No.18/2004/TT-BTNMT、2004 年 8 月 23 日）。 MONRE はその設立後、湿地（Wetland）の保全に関する法令整備に注力していたが、現在は生物多様性保全室(Biodiversity Conservation Administration:BCA)を中心して、全国湿地（Wetland）管理マスタープラン作成を始めている。しかしながら、BCA は実際の調査や事業実施の経験が少なく、マスタープランを作成するための経験･能力が不足しており、計画策定は進んでいないのが現状である。 一方、急速に経済発展が進んでいるベトナムでは、湿地環境は急速に変化しており、また今後も経済開発の脅威は拡大することが予想されることから、保全の必要性の高い湿地に対しては早急に対策をとる必要があると考えられる。 そのため、全国の湿地がおかれている環境把握と共に、それらの生物多様性の評価を通じて、保護すべき湿地の同定と必要な対策の検討を目的とした全国湿地管理マスタープランの実施が急務となっている。
プロジェクト目標	全国の湿地（Wetland）に関する調査を通じて、重要な湿地と保全が優先される箇所が同定され、同時に湿地の適正な管理方法・手法の確立と優先地区に対する管理計画が策定される。
プロジェクト対象地域	全国
実施機関	天然資源環境省（MONRE）生物多様性保全室（BCA）
主要活動	• 全国の湿地（Wetland）の状況調査（湿地の位置・面積・水域変化等自然状況の把握、生物種リスト作成、周辺を含む社会状況の把握等） • 全国湿地保全対策基本方針の策定 • 湿地のタイプ分類、分類ごとの基本的な保全対策方法の策定 • 各湿地の生物多様性に関する危険度判定、保全活動の優先順位付け • 保全優先湿地に対する湿地管理計画の策定 • 各種技術のガイドライン、マニュアル、とモニタリング計画の作成 • BCA を中心とする中央政府職員に対する調査、計画策定能力の向上支援
実施期間	3 年間
実施スキーム	技術協力プロジェクト
投入（想定される専門家）	長期専門家：自然環境管理 短期専門家：GIS、衛星画像解析、データベース構築、社会経済分析、組織開発
期待される成果	• 全国の湿地の現状に関わる情報が整備され、各省で生物多様性保全を考慮した適正な地域開発を進めるための情報が整う。 • 優先湿地に対する湿地管理計画を基に、BCA と各省政府が共同で、生物多様性の観点から保全の重要性が高い湿地を適正に管理するようになると期待される。
環境社会面で配慮すべき事項	特に無し。
補足	特になし。

案件候補概要表（プロジェクトプロファイル）

国名：フィリピン

タイトル	**現場調査を含んだ最新森林資源図作成支援及び関係機関の REDD 準備に関わる能力向上支援（REDD 準備）**
背景	フィリピン国では、森林資源の持続的管理手法の一つとして REDD＋の導入を国内の森林資源の保全及び気候変動対策に関わる国家戦略の一つとして位置づけ、現在 REDD＋推進のための国家戦略を策定中である。今後、フィリピン政府が REDD＋導入を進めるためには、必要となるベースライン同定のための基礎データの整備と共に、データ収集並びに整備に関わる能力強化が、喫緊の課題となっている。 ベースライン同定のためのデータ収集としては、衛星画像解析による森林資源量の現況および推移の傾向の把握が必要となるが、フィリピン国では NAMRIA により 2003 年時点の衛星画像を用いた全国の森林分布が作成されて以来、森林資源量を推測できるような調査や情報整備は行われていない。また 2003 年に作成された森林分布図も、現地での資源量調査などは行われず、機械的に作成されたもので、その森林資源量の把握には耐えられるものではない。 今後、REDD＋を推進するに当たって、信頼性の高い森林資源量データの収集とそのモニタリング体制の整備のニーズは極めて高い。
プロジェクト目標	衛星画像解析と森林資源調査に係る技術移転を通じて、NAMRIA および FMB が森林資源モニタリング調査に係る実施能力を得ること。
プロジェクト対象地域	全国
実施機関	NAMRIA、FMB
主要活動	• NAMRIA に対する将来の REDD＋導入を見越した適正な衛星画像／情報の解析技術の導入と共同での衛星情報解析 • FMB と共同での森林資源調査の実施 • NAMRIA 及び FMB と共同での森林バイオマス量の測定方法の検討 • 森林分布図の作成支援 • 各種技術のガイドライン化とモニタリング計画の作成
実施期間	3 年間
実施スキーム	技術協力プロジェクト
投入（想定される専門家）	長期専門家：森林資源量モニタリング 短期専門家：GIS、衛星画像解析、データベース構築
期待される成果	NAMRIA 及び FMB が、REDD＋推進のための基礎データを整備することができるようになる。
環境社会面で配慮すべき事項	特に無し。
補足	他国で活用・展開している技術が適用できる。NAMRIA は衛星画像解析技術を有しているが、森林バイオマス量の測定については未だ経験がない。

案件候補概要表（プロジェクトプロファイル）

国名：フィリピン

タイトル	**フィッシュサンクチュアリーを含む海洋保全地区の評価及び更新、GIS によるデータベースの構築、新規海洋保全地区の設定を含んだ重要な海洋保全地区ネットワークの構築の提案**
背景	フィリピンは世界でも特に海洋生態系の多様性が高いとされる Coral Triangle 内に位置し、特に Sulu Sulawesi 海域は重要な海洋ネットワーク（seascape）として認知されている。一方、フィリピンの沿岸域では、地域住民や漁業者による違法な漁業や乱獲によって、沿岸・海洋生態系は破壊され、水産資源や沿岸・海洋生態系に大きな影響を与えている。フィリピン政府や地方自治体が海洋保護区（MPA）を制定しているものの、適切な管理下にある MPA は限られ、また生態系として重要度が高い場所に設定されていない MPA もあるため、その効果は限定的になっている。 Sulu Sulawesi 海域の生物多様性保全を図るためには、既存の MPA の生態系とそれらの連結性を評価し、海洋ネットワークの構築を目的とした地域全体の MPA の配置・整備を検討する必要がある。
プロジェクト目標	フィリピン国内の Sulu Sulawesi 海域に関わる MPA ネットワークデザインが、本提案プロジェクトを通じて構築される。
プロジェクト対象地域	SSME に関連する州(Region 4、Region 5、Region 6、Region 7、Region 8、Region 9、Region 10、Region 12、ARMM)
実施機関	PAWB
主要活動	• 現存情報のレビュー及び関係する局・州・地方政府事務所への聞き取りを通じた海洋保護地区・漁業禁止区に関わるインベントリー調査の実施 • 上記情報の GIS を使ったデータベース化 • Key Biodiversity Area などの情報の組み合わせによる MPA のネットワーク化の検討 • フィリピン国内における SSME 海域での MPA ネットワークの提案 • NIPAS 法下での新たな海洋保全地区の提案 • MPA ネットワークに関わる技術ガイドラインの作成
実施期間	2 年間
実施スキーム	技術協力プロジェクト／JST
投入（想定される専門家）	• 長期専門家：海洋保全計画 • 短期専門家：海洋生態調査、GIS、データベース構築
期待される成果	本提案プロジェクトを通じて作成される MPA ネットワークが、同海域での海洋生態系保全のロードマップとなり、整合性のとれた保全対策を PAWB が行えるようになる。また本提案プロジェクトで作成される技術ガイドラインは他の CTI 各国でも活用が可能であり、同様の活動の展開が期待できる。
環境社会面で配慮すべき事項	特に無し。
補足	上記活動に、調査を通じて提案された、「新規海洋保全地区に対する調査及び管理計画の作成支援」を組み合わせることも可能である。

案件候補概要表（プロジェクトプロファイル）

国名：フィリピン

タイトル	**地域住民の参加による沿岸生態系(マングローブ、さんご礁、海草)の修復と保全、及び沿岸資源管理コンセプトの導入による地域住民と地方政府による持続的管理の達成**
背景	フィリピンは世界でも特に海洋生態系の多様性が高いとされる Coral Triangle 内に位置し、特に Sulu Sulawesi 海域は重要な海洋ネットワーク（seascape）として認知されている。一方、フィリピンの沿岸域では、地域住民や漁業者による違法な漁業や乱獲によって、沿岸・海洋生態系は破壊され、水産資源や沿岸・海洋生態系に大きな影響を与えている。特に、魚類の産卵場所と同時に稚魚の生息場所であるマングローブ、さんご礁、海草は近年荒廃が進み、その保全と復旧が喫緊の課題になっている。これまでにフィリピン政府もマングローブ植林やさんご礁保全を進めているものの、これまでに破壊された規模に比べれば、その回復は未だ大きく途上にあるといえる。 一方、沿岸資源を持続的に管理することを目的に、フィリピンでは統合沿岸管理計画（ICM）を策定することが EO 533 によって規定されている。そこでは、地方自治体と地域住民が主体となって、地域の沿岸資源を持続的に管理することを提唱している。これまでに EO 533 に基づいて、ドナーや NGO の支援を受けて、沿岸地域の地方自治体が沿岸管理計画の策定と実施が進めているが、その対象地域は限定的で、更なる拡大が望まれている。また多くの場合、地域住民の参画が限定的であるため、その持続性について疑問視されている。 そのため、沿岸生態系の回復と保全と共に、住民主導での沿岸資源管理を進めることが、フィリピンの沿岸生態系の回復に必須となっている。
プロジェクト目標	本提案プロジェクトの目的は以下のとおり。 • SSME 沿岸域村落の地域住民による沿岸生態系の修復と保全の達成 • 地域住民と地方自治体共同での持続的な沿岸資源管理にかかる体制整備
プロジェクト対象地域	SSME に関連する州(Region 4、Region 5、Region 6、Region 7、Region 8、Region 9、Region 10、Region 12、ARMM)
実施機関	PAWB
主要活動	• 沿岸生態系(マングローブ、さんご礁、海草)の荒廃が進む地区、修復が必要な地区の同定と地域住民を巻き込んだ対象地区同定調査の実施 • 地域住民の組織化と能力強化 • 住民組織と共同での修復計画の作成 • 住民組織を実施者(契約者)とした沿岸生態系修復・保全事業の実施 • 住民組織による沿岸資源管理計画及び管理規則作成と地方自治体による承認 • 住民組織に対する生計向上活動実施支援（含む農村インフラ整備） • 持続的な資金メカニズム（PES 又は REDD）の導入検討及び試行
実施期間	7~10 年
実施スキーム	円借款事業
投入（想定される専門家）	• 事業管理、沿岸資源管理、住民組織化及び能力強化、生計向上支援、マングローブ植林、さんご礁保全、海草植栽、養殖、農村インフラ
期待される成果	• 一定規模（数万 ha）のマングローブ植林を含んだ、沿岸生態系が事業を通じて修復・保全され、かつ地域住民を主体とした保全・管理体制が整備されることによって、地域の沿岸生態系の回復が図られる。その結果、水産資源の回復と共に沿岸域の生態系保全が進むと期待される。
環境社会面で配慮すべき事項	生計向上事業において、地域住民への利益の分配等に偏りが出ないよう、配慮する。また農村インフラの整備については、社会環境（非自発的住民移転や地域分断、文化遺産、先住民居住区、地域内の利害対立など）、自然環境（地形・地質、土壌侵食、動植物、生物多様性、景観など）、汚染対策（大気汚染、水質汚濁、土壌汚染、廃棄物、騒音・振動、悪臭、事故など）の必要な項目について、影響が生じないよう配慮する。
補足	森林セクターローン事業(旧 JBIC)融資にて 8 州に対して同様の支援を行い、約 12,000ha のマングローブ植林を実施し、活着率も高い結果を残している。各州の DENR 事務所も類似活動の経験を有しており、事業実施能力は十分有すると考えられる。

Meeting / Field Memo

No. of Memo: 1	
1. Topic/Purpose	Meeting with the UNEP Regional Office for Asia and the Pacific
2. Participants	Ms. Haruko Okusu, (Program Officer, UNEP/DELC Biodiversity MEA Focal Point), and Survey Team (Mizuguchi and Imai)
3. Place	UNEP Office (UN Building, Bangkok)
4. Date & Time	24th June 2010, 14:10 – 15:30

5. Points of Discussion/Observation

(1) UNEP の本部でも地域の活動をしているので、大楠さんの部署で全てを把握しているわけではない。特にさんご礁関係については不明なことがある。

(2) 大楠さんの所属は条約課であり、扱う条約は i)生物多様性条約、ii)ラムサール条約、iii)ワシントン条約、iv)渡り鳥等保護条約。加盟のサポート、加盟国の活動支援が主な業務である。

(3) UNEP は主として地域的な案件を扱い、UNDP は国別案件を扱う傾向がある。また、GEF ファンドの分野では前者は主として湿地、後者は保護地域に力点を置いている。

(4) 本件調査で提案しているトランスバウンダリーに関する協力について大楠氏の見解は、UNEP でも協力する部分はあると考えられるとのこと。

(5) 森林系の支援については、UNREDD があるが、これは FAO、UNDP、UNEP の三者で概ね次のような役割分担となっている：FAO-科学技術的な支援、UNDP-国レベルの支援、UNEP は公共の関心(Public Awareness)の向上をどのようにやるかという方策の検討。UNEP では、条約締結国が催しをする際にポスターやプレスリリース用の映像を提供したりもする。

(6) UNEP では COP10 に向け、各国の生物多様性に関する活動内容をまとめている。ドラフトができた段階で非公式情報として提供できる。

(7) 複数の国で共有される海域の環境保全を図るため「地域海行動計画 Regional Seas (RS) Programme（準条約）：現在 15 地域海」の一部として COBSEA（東アジア海域調整機構）という活動もあり、HP は以下のとおり。RS の多くは Action Plan にとどまっており、強制力がない。COBSEA と CTI の整合性はとれていると思われるが明確ではない。

http://www.cobsea.org/events_upcoming.html

(8) 海洋の生物多様性保全には各種の漁業団体の反対があることが多く、特に種レベルの保全は難しくなる傾向がある。

(9) トンレサップ（カンボジア）の支援は国単位なので UNEP よりも UNDP が関係すると考えられる。

(10) PES（Payment for Environmental Service）については、生物多様性の経済評価方法として UNEP では力を入れ始めた。大楠氏の見解では、PES のグッドプラクティスを探し、体系化していく方向性であろうとのこと。

6. Notes/Issues:

Meeting / Field Memo

No. of Memo: 2	
1. Topic/Purpose	Meeting with the UNDP Regional Center in Bangkok Serving Asia and Pacific
2. Participants	Mr. Sammer Kari (Regional Technical Advisor for biodiversity), Mr. Jose Erzo Padilla (Regional Technical Advisor for Marine, Coastal & Island Ecosystems), and Survey Team (Mizuguchi and Imai)
3. Place	UNDP Office (UN Building, Bangkok)
4. Date & Time	25th June 2010, 10:00 – 11:20

5. Points of Discussion/Observation

UNDP は GEF ファンドによる UNDP のプロジェクト一覧を提供。調査団は調査の背景、主な目的について説明した。

（Mr. Jose Erzo Padilla のコメント)

(1) リストの 2 番目にあるプロジェクト（Philippines, West Pacific-East Asia Oceanic Fisheries Management Project) のコンポーネントは、i) 組織能力のアセスメント、ii) 情報収集、iii) データ・情報解析、iv) 広域マネージメントの策定である。このプロジェクトでは各漁船に GPS を搭載し、衛星画像解析によってリアルタイムで漁船の操業状況及び漁獲量をモニターするシステムも開発した。これによって、外部からの収奪を直ちに検知できる。

(2) UNDP と JICA の協働プロジェクトの可能性はある。

(Mr. Sammer Kari のコメント)

(3) 生物多様性保全問題における問題点は以下のとおり:

- 政策、法令のバリアーを取り除くこと、
- 政策サイドと現場サイドの両方の能力を図ること、
- 主たるボトルネックの問題は資金調達である。なぜならば、開発は生物多様性保全よりもかなり魅力的であるため。

(4) 経済と生態系保全のバランスをとることを検討すべきである。もし、生態系が経済的な価値をもったならば、その保全も魅力的なものとなる。例えば、カーボン・オフセット、REDD、気候変動適応策。

(5) JICA プロジェクトに対する提言として、典型的なものではなく経済的な視点からの支援プロジェクトをしたらどうかと考える。それは、開発投資を生物多様性にとってやさいいものとするプロジェクトである。（例）開発のための投資が生態系に及ぼすリスクが高い。例えば、コーヒーやカカオの大規模造成が森林へ拡大している。これを自然にやさしい投資とすることで生物多様性が保全される。（例 2）また、小規模なプロジェクトで i)農薬を使わない農業、ii)Weltlands を農地転換しないことなどを目的としたものもある。これによって高価値の農作物生産が可能となる（主たる消費者はエコツーリズム）

(6) トンレサップ湖の管理に関し、主たる問題点が挙げられる。（UNDP のプロジェクト、あるいは ADB プロジェクトあり。ただし、後者はすでに完了している。ここのプロジェクトの問題は、ガバナンスの弱さに基づく漁獲量割り当ての管理の不十分さである。天然資源へのアクセス管理が重要な点である。同時に相当政策的なものでもあり、事業実施には細心の注意が必要である。

(7) これらの諸国の政府は生物多様性保全に対して意識がやや低いことが大きな問題の一つ

である。JICA がもしプロジェクトを実施するならば、環境にやさしい投資という見地からのアプローチをお勧めしたい。日本が輸入している作物（コーヒー、米等）の生産が生物多様性にやさしいものとなるようなプロジェクトである。農家や政府にとって利益があるため、プロジェクトへの関心を引くことができると考えられる。

(8) UNDP は JICA との連携について大いに歓迎する。GEF ファンドの協調も可能である。

(9) GEF プロジェクトの情報は以下のウエブサイトから入手が可能である。

http://www.gefonline.org/Country/CountryProfile.cfm

(10) PES について。彼の考えでは、i)ベトナムはこの地域のリーダー的な存在であり、ii)ラオスはこの分野の確立がされていない、iii)伝統的な PES はうまく機能しないであろう、なぜならば下流の住民も上流の住民と同様に貧しいから。

(11) ベトナムにおける海洋保護区（MPA）の プロジェクト（重要な MPA の一つである “Con Dao Islands Region” はちょうどプロジェクトが終了したところである。このプロジェクトでは、基礎的調査のみ実施されたが、さらなるサポートが必要とされている。また、この MPA は生物多様性の面から非常に重要な区域である。したがって、もし JICA がこの MPA での支援プロジェクトを実施するのであればそれは非常に有益であると考える。なお、この生物多様性に対しては、マス・ツーリズムの圧力が大きい。

(12) もし、どこかの政府が GEF ファンドを利用する場合、プロポーザルの提出が求められる。GEF Agencies が審査をする。また、各国には GEF ファンドの上限が設定されている。

(13) JICA は GEF ファンドを利用することはできない。しかし、相手国と JICA によってプロジェクトが策定された場合、JICA ファンドを含む協調資金提供が可能である。

(14) 表にリストアップした他に小規模 GEF プロジェクト（50,000 米ドル以下）が多数ある。

6. Notes/Issues: