GLOBAL ENVIRONMENT FACILITY
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Naoko Ishii
CEO and Chairperson

April 06, 2015

Dear Council Member:

FAO as the Implementing Agency for the project entitled: ***Myanmar: Sustainable Cropland and Forest Management in Priority Agro-ecosystems of Myanmar***, has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with FAO procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by Council in April 2013 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by FAO satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee

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REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title: Sustainable cropland and forest management in priority agro-ecosystems of Myanmar			
Country(ies):	Myanmar	GEF Project ID:[1]	5123
GEF Agency(ies):	FAO (select) (select)	GEF Agency Project ID:	618969
Other Executing Partner(s):	Ministry of Agriculture and Irrigation (MoAI); Ministry of Environmental Conservation and Forestry (MOECAF)	Submission Date:	2014-12-29 Resubmission: February 27 2015
GEF Focal Area (s):	Multifocal Area	Project Duration(Months)	60
Name of Parent Program (if applicable): ➢ For SFM/REDD+ ☒ ➢ For SGP ☐ ➢ For PPP ☐		Project Agency Fee ($):	587,388

A. FOCAL AREA STRATEGY FRAMEWORK[2]

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount ($)	Cofinancing ($)
CCM-5 (select) Promote conservation and enhancement of carbon stocks through sustainable management of land use land-use change and forestry	5.1.Good management practices in LULUCF adopted both within the forest land and in the wider landscape. 5.2. Restoration and enhancement of carbon stocks in forests and non-forest lands, including peat land. 5.3. GHG emissions avoided and carbon sequestered.	Forests and non-forest lands under good management practices. Forests and non-forest lands under good management practices. Carbon stock monitoring systems established.	GEF TF	3,565,408	6,000,000
(select) LD-3 Reduce pressures on natural resources from competing land uses in the wider landscape	3.1 Enhanced cross sector enabling environment for integrated landscape management. 3.2: Integrated landscape management practices adopted by local communities.	Output 3.1 Integrated land management plans developed and implemented. Output 3.4 Information on Integrated Natural Resource Management (INRM) technologies and good practice guidelines	GEF TF	1,071,865	4,950,000

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.

		disseminated.			
(select) SFM/REDD+ - 1 Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services	Outcome 1.1: Enhanced enabling environment within the forest sector and across sectors. Outcome 1.2: Good management practices applied in existing forests.	Types and quantities of services generated through SFM. Forest area (hectares) under sustainable management, separated by forest type.	GEF TF	1,545,758	2,661,707
		Total project costs		6,183,031	13,611,707

B. PROJECT FRAMEWORK

Project Objective: To build the capacity of farming and forestry stakeholders to mitigate climate change and improve land condition by facilitating the adoption of climate smart agriculture and sustainable forest management policies and practices.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount ($)	Confirmed Cofinancing ($)
1. Institutional, policy and regulatory frameworks strengthened to support SLM, CSA, and SFM	TA	1.Enabling institutional, policy and regulatory framework for SFM and improved cropland management resulting in: - Improved SFM planning across 14 million ha of production forests - 2 million ha across 6 districts benefiting from improved SLM - 64,000 ha of croplands under CSA Sub-component 1. A. Comprehensive program to enable regulatory/institutional framework assessment, strengthening and capacity building	1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management 1.2: Updated national forestry master plan integrating	GEF TF	963,566	1,000,000

			SFM/REDD and community forestry (CF) elements 1:3 Updated agricultural master plan integrating CSA 1:4: Training in SFM, CSA, and SLM at national, state, and district levels			
		Sub-component 1. B. Program for improved land use management and planning to inform institutional and regulatory improvements	1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA 1.6: Pilot digital land-use mapping process in priority districts			
2. Improved Cropland Management (ICLM) Practices Demonstratd by Farmers in Priority Agro-Ecosystems of Myanmar	Inv	2. Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems, resulting in: - 40,000 ha of rice under improved management avoiding emissions of 48,000 tCO2e/year - 20,000 ha of annuals under improved management avoiding emissions of 62,000 tCO2e/year - 4,000 ha of upland		GEF TF	1,894,550	4,946,500

		and dryzone degraded annual crop land changed to agroforestry with perennil rops, yielding 130,000 tCO2e/year Sub-component 2. A. Program for climate smart agriculture support services Sub-component 2. B. Program for farmer climate smart agriculture capacity building	2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems 2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices 2.3: National farmer field school curriculum developed 2.4: Model farmer field schools established in three priority agro-ecosystems 2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems			
3. Models for sustainable forest management and enhancing carbon storage in priority agro ecosystems demonstrated	Inv	3. Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems, resulting in: - 50,000 ha of forestlands under improved multi-		GEF TF	2,485,700	3,712,280

		functional management providing: o short-term benefits accruing 1,148,125 tCO2e & long-term years (6-20) accruing 11,481,250 tCO2e of avoided emissions (AE) - 10,000 ha of forest land with Forest user groups implementing SFM providing: o 21,560tCO2e of AE & C storage accruing from 4,000 ha under improved SFM, o 16,967 tCO2e accruing from 4,000 ha under improved SFM, and o 12,122 tCO2e of C storage yielded from 2,000 hectares of low productivity dryland agri-cultural land brought under a taungya teak agroforestry system				
		Sub-component 3. A. Program for improved forest planning	3.1: National ecosystem-based SFM capacity building program established 3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives			
		Sub-component 3. B. Program for community-based forest conservation	3.3: Community based forestry implementation strategy and handbook completed			

			3.4: Community-based forestry capacity building and technical support program operationalized 3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems			
4. Knowledge management, training and upscaling of CSA, SLM and SFM practices	TA	4. SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally, resulting in: • 500,000 hectares of forestlands across Myanmar with improved land condition and carbon sequestration due to main-streamed SFM plans, • 40% Capacity Development Scorecard improved from baseline if app.18%, and • 40 policy makers, 25 extension agents, 75 field staff; and 3,000 FUG members applying SLM/SFM practices Sub-component 4. A. SFM Sub-component 4. B. CSA	4.1: Support program established for scaling-up SFM practices 4.2: Support program established for scaling-up CSA	GEF TF	489,232	3,067,707

			practices			
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Subtotal		5,833,048	12,726,487
			Project management Cost (PMC)[3]	(select)	349,983	885,220
			Total project costs		6,183,031	13,611,707

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Please include letters confirming cofinancing for the projects with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount ($)
National Government	Ministry of Agriculture and Irrigation (MoAI)	Cash	3,000,000
National Government	Ministry of Agriculture and Irrigation (MoAI)	In-kind	2,000,000
National Government	Ministry of Environmental Conservation and Forestry (MOECAF)	Cash	1,000,000
National Government	Ministry of Environmental Conservation and Forestry (MOECAF)	In-kind	1,000,000
GEF Agency	FAO	Cash	1,950,000
GEF Agency	FAO	In-kind	244,000
Other Multilateral Agency (ies)	Livelihoods and Food Security Trust Fund (LIFT)	In-kind	4,417,707
Total Co-financing			13,611,707

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in $)		
				Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
FAO	GEF TF	Multi-focal Areas	Myanmar	6,183,031	587,388	6,770,419
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				6,183,031	587,388	6,770,419

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

[2] Indicate fees related to this project.

[3] PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount ($)	Cofinancing ($)	Project Total ($)
International Consultants	906,000	4,204,390	5,110,390
National/Local Consultants	1,107,000	885,220	1,992,220

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF[4]

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

No major changes since the approved PIF. A summary table of relevant international agreements are provided in addition, as below.

Relevant international agreements ratified by Myanmar

Convention/Agreement	Signed
Convention on Biological Diversity (CBD)	1992
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	1997
United Nations Framework Convention on Climate Change (UNFCCC)	1992
Kyoto Protocol to the United Nations Framework Convention on Climate Change	1992
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2011
Convention to Wetlands of International Importance especially as Waterfowl Habitats ("the Ramsar Convention")	2005
World Heritage Convention on Nature and Culture Sites under UNESCO	1994
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and / or Desertification, Particularly in Africa, Paris, 1994 (UNCCD)	1994
International Tropical Timber Agreement (ITTA) 1995-2006	2006
ASEAN Agreement on Transboundary Haze Pollution	2002
United Nations Convention on the Law of the Sea (Montego Bay 1982)	1982
Vienna Convention for the Protection of the Ozone Layer, Vienna 1985	1993
Montreal Protocol on Substances that deplete the Ozone Layer, Montreal 1997	1994
Myanmar Agenda 21	1997
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2000
Stockholm Convention on Persistent Organic Pollutants	2001

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

No major change since the approved PIF. The project objective, components and outcomes have remained the same, while some project outputs and activities have been fine-tuned during the preparation process.

The project seeks synergies across the Land Degradation (LD) and Climate Change Mitigation (CCM) Focal Areas and is consistent with the SFM strategy of the GEF-5. The project addresses CCM-5: "Promote conservation and enhancement of carbon stocks" by enabling Myanmar to adopt good management practices in LULUCF including

[4] For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter "NA" after the respective question.

restoring and enhancing carbon stocks in forests and croplands. The project addresses LD-1 "Maintain or improve flow of agro-ecosystem services to sustaining the livelihoods of local communities" by strengthening the enabling environment among sectors (agriculture, environment, forestry) comprising agro-ecosystems in Myanmar, engineering a paradigm shift from unsustainable crop and forestland practices leading to degradation to sustainable forest and cropland management. It will demonstrate and scale up innovative and proven participatory forest management practices which support community use rights and improve forest management practices to maintain natural forest cover and ecosystem services in dry-land habitats. The project has been designed in line with GEF Guidelines for SFM/REDD+ Mechanism. Myanmar is committed to creating the legal, regulatory, scientific and practical grounds for inclusion of its forests in international forest markets; the project creates capacities for the proliferation of good management practices pertinent to SFM and REDD. SFM incentive funding will help to establish a sound policy environment to recognize the value of forest ecosystem functions and reduce greenhouse gas (GHG) emissions from deforestation and forest degradation.

Focal Area objectives, expected outcomes and outputs summary

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs
CC-5: Promote conservation and enhancement of carbon stocks through sustainable management of land use land-use change and forestry.	5.1.Good management practices in LULUCF adopted both within the forest land and in the wider landscape.	Forests and non-forest lands under good management practices.
	5.2. Restoration and enhancement of carbon stocks in forests and non-forest lands, including peat land.	Forests and non-forest lands under good management practices.
	5.3. GHG emissions avoided and carbon sequestered.	Carbon stock monitoring systems established.
LD-3: Reduce pressures on natural resources from competing land uses in the wider landscape.	3.1 Enhanced cross sector enabling environment for integrated landscape management	Integrated land management plans developed and implemented
	3.2: Integrated landscape management practices adopted by local communities	Information on INRM technologies and good practice guidelines disseminated.
SFM/REDD-1 Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services.	Outcome 1.1: Enhanced enabling environment within the forest sector and across sectors.	Types and quantifies of services generated through SFM
	Outcome 1.2: Good management practices applied in existing forests.	Forest area (hectares) under sustainable management, separated by forest type.

A.3 The GEF Agency's comparative advantage:

No changes since the approved PIF.

A.4. The baseline project and the problem that it seeks to address:

No major changes since the approved PIF.

Although agriculture and forestry are closely linked in rural Myanmar, there is limited capacity to make certain these two sectors are well coordinated to generate ecosystem-based approaches. Baseline efforts covering land use and

management are highly complicated and evolving. As the regulatory and management frameworks alter, it will be critical to make certain changes fully integrate ecosystem management issues including sustainable forest management and climate smart agriculture.

Myanmar's agricultural and forestry practices are largely predicated upon production with limited capacity for maintaining ecosystem services required to support SLM, SFM, and CC benefits. Within the baseline scenario, forest and agriculture management in Myanmar will most likely continue to be production-oriented with minimal progress made towards sustainable forest management and meaningful carbon sequestration. Ecosystem health objectives will not be mainstreamed into management planning and practice.

Under the baseline, no comprehensive regulatory and planning framework exists to maintain ecosystem functionality and services across diverse landscapes. Forest plans are primarily focused upon delivery of high value timber. Agricultural planning is focused primarily upon increased production. Land classification boundaries were in many cases set a century ago. These classifications no longer reflect the actual land use or the ecological characteristics. Good forest is potentially targeted for cropland while lands devoid of forests are managed as forested lands. Current mechanisms to register community agricultural and forestry land, though positive, do not adequately integrate mechanisms to address issues related to climate, forest, and land management. This baseline gap creates substantial vulnerabilities in terms of forest and land degradation as well as potential loss of climate change mitigation benefits. As a result, land, water, and forest resources are left highly vulnerable. This includes upland forests, dry regions and lowland mangroves.

Myanmar's foresters and agriculturalists are attempting to shift approaches to meet the challenges of a new era. Improvement is progressing too slowly and to keep pace with the rapidly emerging challenges associated with increased international investments and domestic resource demands. The level of interaction among national and international experts is slowly increasing. However, national approaches still do not generally integrate best international principles and practices. Management and planning is not participatory, undermining the ownership and support of local stakeholders. Baseline regulatory and capacity tools are not aligned to support management that supports a mosaic of land-uses across an agro-ecosystem. The harvest of high-value trees, elevated demands for fuel-wood, and agricultural expansion is not balanced by efforts to enhance and maintain the ecological integrity required to address land degradation and climate change challenges within these productive landscapes.

There is an expanding understanding within the agricultural community of the need to promote greater skills in terms of climate change adaptation and mitigation. However, there is no policy framework and/or program in place designed specifically to support the achievement of climate smart agriculture. The agricultural research and academic potential for Myanmar is high. As noted, there are multiple institutions in place. For instance, under the project of "Consortium for Unfavourable Rice Environments (CURE) –IRRI, International Rice Research Institute", DAR has been producing climate resilient rice varieties. It has released 9 varieties for drought tolerance rice and 4 varieties for salinity tolerant rice and 8 varieties of submergence tolerant rice. Capacity building trainings for farmers and extension workers of DOA have been conducted for "Participatory Varietal Selection (PVS)" of rice seeds most suitable for their specific regions.

However, these institutions do not benefit from a formal program to support the identification and modelling of ecosystem-based CSA approaches and techniques specific to Myanmar's unique agricultural environment. There are approximately 5,000 extension officers in Myanmar. These officers receive almost no training or support in terms of climate smart agriculture tools and techniques. At the same time, there is no formal farmer level training program to deliver CSA tools and techniques to agrarians directly responsible for land use practices. This business as usual scenario will lead to continued land degradation, weakened resilience to climate change, and limited contributions to climate change mitigation.

Myanmar has a long history of forest management. The MOECAF has offices operating at all levels of government from the capital to the most rural locations. There is an extensive institutional and planning framework in place. However, this baseline is focused largely upon extraction of high-value timber. Outside of protected areas, very little effort goes into making certain natural diversity and ecosystem services are retained. Afforestation efforts tend to be centralized, limited in scope, and oriented towards industrial-style forest plantations. Baseline forest management systems and institutions were created in a time when Myanmar's forests and associated management challenges were vastly different. Existing knowledge and skills are inadequate to meet emerging challenges. The management system requires updating, including training programs, materials and approaches. Implementation of the MSS has faltered in recent decades. The quality and health of Myanmar's natural forests is declining. Myanmar's traditional taungya

agroforestry practice may well be an important benefit sharing and community-management tool. However, forest staff are not trained in how to support such an approach in a collaborative manner.

There are land use, agriculture and forest planning mechanisms in place. However, under the baseline, there is a very low likelihood that natural resource planning will be coordinated to achieve SLM, CC, and SFM objectives on landscape level. Planning conducted by the Department of Agricultural Planning focuses upon setting and achieving production targets. These are based upon the Country Program Framework that sets out five-year short-term plans. Planning in the forestry sector is also production based. Thirty-year forest management plans are developed at district level. These plans are essentially used to establish production targets. Targets are based on quotas developed at central level. Management plans are revised every 10 years based on forest inventory. Township Forest Department offices are responsible for implementing forest management plans and for drawing up annual work plans to reach desired levels. They prepare and supervise forest harvest operations, enforce forest protection measures and support local community forestry applications.

As noted, land classification and ownership patterns are changing rapidly in Myanmar. These changes are not accompanied by commensurate efforts to maintain ecosystem services either within or between land classes.

Creative tools such as community forestry could be applied as a tool to help maintain ecosystem integrity in the face of such challenges. Implementation under the baseline has been stymied by a general lack of capacity. The Community Forestry Instruction (CFI) of 1995 provides the administrative basis for the handover of forested land for management and use by communities. The 30-year Forest Master Plan (FMP 2001) mandates that community Forest User Groups manage 2.27 million acres by 2030-31. Community forest establishment over the last 15 years has averaged 6,943 acres (2,810 ha) per year. This is too low to meet the FMP mandate. Only 1,572 FUGs manage 104,000 acres of forest. To meet the FMP mandate, some 50,000 acres/year would have to be enrolled under CFI. Each FUG is responsible to develop and implement the Community Forest management plan. Although support exists for community-based forestry, implementation under the baseline has been severely challenged. The CFI is not yet been incorporated into law. Operational guidelines do not exist to help communities transparently and equitably manage transferred forest use rights. Forest Department staff are not trained or well-practiced in CF. Forest and land use planning required to support community-based forestry does not exist. There is no ecosystem-based framework to make certain community-based forestry delivers CC, SLM, and SFM benefits. The end result is that although approximately 500 Forest User Groups are established, but almost none is operational.

Shifting agriculture if done properly delivers forest, land and climate change benefits. In its purest form, this is a highly sustainable system of agriculture. Ideally, the evidence of land degradation is limited. Forest regeneration is encouraged. Biodiversity diversity, although not entirely secure, is fairly well maintained. However, the current system of proposed land tenure schemes does not support sustainable shifting agriculture. Instead, the system attempts to place mechanisms suited to fee-simple ownership at low lands to upland farming system. The result is a gradual expansion of abandoned lands opened for cultivatable land. The result will be greater land use pressure and more forest loss. Under the baseline scenario, sustainable shifting agriculture will likely be lost and gradually displaced by permanent upland agriculture. The result will be a loss of forest cover and related ecosystem services, including land stabilization, water retention, and climate change mitigation.

There are several opportunities under the baseline to address these challenges and more fully integrate climate, forest and land management issues within the evolving planning and regulatory frameworks.

- The government agencies of concern both have extensive human resources and institutional infrastructures. The MOECAF's annual budget is approximately USD 21,000,000. The MOECAF has a total staff of approximately 65,000. The MoAI's annual budget is approximately USD 216,500,000. MoAI has a total staff of 107,000.

- The Scrutinizing Committee on Land Use (SCLU) is to formulate a new National Land Use Policy and Land Use Management Plan. Chaired by the MOECAF, the SCLU will work with FAO, other UN agencies and development partners to secure technical and financial support. SCLU's near-term priorities include: 1) land-use survey training and conducting pilot land-use surveys that will lead to land use surveys and data collection nation-wide; 2) formation of an Advisory Group of local and international experts to review land use policy, law, and regulatory experience worldwide.

- The SCLU is in the process of developing a National Land Use Policy (NLUP), a Land Law (LL) and a Land Use Management Plan (LUMP). FAO is fielding a high-level land scoping mission to Myanmar to generate recommendations on the medium and long-term interventions to provide technical and financial support to the SCLU in

the formulation of NLUP, the LL, and the LUMP. This will be a significant effort with development partners to enable Myanmar and the SCLU to implement the new voluntary guidelines on land tenure. This work will form an important part of the baseline project for this GEF incremental initiative. GEF incremental financing will provide the TA necessary to enable this land use policy and management planning to address directly the key drivers of deforestation and land degradation.

- Since July 2011, the Ministry of National Planning and Economic Development has switched to bottom-up planning, with responsibilities devolved to Regions/States, Districts and Townships. At State/Region, District, and Township levels, Land Use Advisory Committees (LUAC) will be established, and will include civil society and private sector representatives. Agricultural Oversight Committees, comprised of sector ministry staff, meet regularly to resolve land use conflicts. These will need to be combined with LUAC or their respective roles clearly differentiated. This shift will take years to effect and will benefit from targeted pilot initiatives such as those that will be implemented with GEF and co-funding support. Civil society engagement has been sought actively on planning process reform from the Food Security Working Group, the Land Core Group and others.

- Land-use Advisory Committees are established or are being established at State/Region, District, and Township levels. The committees include civil society and private sector representatives. The Land-use Advisory Committees are to support the work of the CLSLA. The committees identify areas of VFV land (including unclassified forest) where tenure is contested. They refer these lands to the CLSLA and the Land Confiscation Inquiry Commission as appropriate. This includes development of a roadmap designed to lead towards a unified Land Use Policy.

- The MoAI is in the early stages of land tenure reform work. This is primarily accomplished through the Settlement and Land Records Department (SLRD). The new Farmland Law 2012 (FL012) provides the legal basis for this work. For the first time the name of the tenant farmer owner will appear in the Record of Land Rights Register against each parcel. This will require FMB to ascertain the rightful owner of each parcel before the name can be entered. Before this is done, FMB will need to update the Kwin/Block maps to reflect changes in parcel boundaries as many are 100 years old or more.

- The Forest Law is due to undergo several key amendments. It is expected that the Community Forestry Instruction (CFI) will be incorporated into the Forest Law, but there is need for more detailed guidance on technical and institutional aspects of implementation of Community Forestry (CF). Among other proposed revisions of the Forest Law are that both Public Protected Forests (PPF) and CF may be harvested, and that teak is no longer automatically state property.

- Under a LIFT-funded initiative "Land Administration & Management Program" (LAMP) the SLRD/FMB will work closely with UN Habitat to develop a GIS based cadastral system to re-survey the existing Kwins/Blocks, and create a database linked to digitized maps for updating and verification of parcels. This will need to be done in a collaborative way with the MOECAF and others to ensure forest and agriculture land are demarcated accurately. It also calls for new and innovative thinking about what "agriculture" and "forest" land are in the context of agroforest ecosystems and customary land tenure patterns and institutions.

- The UN Country Team in Myanmar jointly supports the Government in four strategic priority areas that include agricultural development, addressing climate change and enabling good governance. These priority areas are outlined within the UN Strategic Framework document (2012-15), which was developed over four years in coordination with the government. This UNCT framework will provide a valuable mechanism for coordination between UN agencies and the government in these areas. This includes a large Adaptation Fund (AF) project entitled Addressing Climate Change Risks on Water resources and Food Security in the Dry Zone of Myanmar and a small UNDP funded REDD+ initiative in Kachin State focussing increasing youth participation in SFM. This project will coordinate with MOECAF, MOAI and UNDP on these projects plus other emerging UNDP initiatives going forward in order to build synergies and avoid duplication. This coordination and communication has already begun and lessons learned absorbed in the proposed project. For instance, FAO is member of the technical advisory group for AF project. Lessons and good practice were drawn from a range of existing work on gender mainstreaming, including that of the UN Women/IFAD/WFP/FAO project entitled Accelerating Progress toward the Economic Empowerment of Rural Women. As this proposed project moves forward, Membership and attendance by project staff of the Gender Theme Group, will help support mainstreaming of gender within the project.

• National legislation in Myanmar restricts the transfer of productive and available land to other uses. However, agriculturally unproductive lands are allowed to be used in other productive activities. The measures adopted by the Government for promoting crop diversification at farm level include the free choice of crop production, the exclusion of second crops from land taxation or quota procurement and the low rate of water charges for irrigation. The Ministry of Agriculture and Irrigation is making great efforts to enhance the development of the agriculture sector to ensure food security within the country and the stepping-up of export volume to generate foreign exchange, essential for further investment and the development of the overall economy of the nation. Two different approaches to improving natural resource management were adopted by the project. The first was to expand cropping area, mainly for winter crops for edible oil and pulses, and the second was to increase per unit area yield by mobilizing all available resources in combination with double cropping, multiple cropping and mixed cropping on productive lands.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

No major changes since the approved PIF.

In the baseline scenario, stakeholders will continue to struggle to reverse trends leading to the loss of forestlands and the degradation of croplands. Baseline programs will struggle with addressing the key drivers of deforestation and degradation. Critical underlying causes related to governance will be addressed inadequately and stakeholders will struggle to overcome key barriers to reducing deforestation and degradation. Without GEF's incremental support, investments will not focus on integrating carbon sequestration and SFM objectives into productive forest management practices and policies and SFM will remain in its infancy because it will not be transferred effectively to the emerging CF mechanism.

Incremental GEF resources will support the mainstreaming of SFM and SLM objectives into productive forest and cropland management practices. The proposed project will provide an opportunity for a major scaling up and strengthening of CF management techniques to address capacity constraints within the forestry sector. GEF's incremental investment will strengthen participatory management of forest resources to mitigate CC. GEF funding will enable stakeholders to improve the application of good forest management planning and good silvicultural practices. It will enable community forest groups to strengthen their tenure rights over community forests and strengthen the management of community forests through improved management of grazing and wood collecting in order to enable natural regeneration, application of traditional taungya agro-forestry practices. Consequently, GEF funding will enable the FD and community foresters to avoid emissions caused by degradation, increase sequestration through enhanced biomass and improve the productivity of forests. GEF's incremental investment will also enable farmers to apply improved cropland management practices designed to increase productivity, reduce pollution, and avoid GHG emissions over baseline cropland management levels.

The proposed project builds on and complements the baseline project. The GEF funded alternative will address the proximate drivers and underlying causes of deforestation and degradation as well as capacity constraints and policy barriers to mainstreaming biodiversity conservation and SFM into productive forest management practice. The objective of the GEF funded alternative is to build the capacity of farming and forestry stakeholders to mitigate CC and improve land condition by adopting climate smart agriculture and sustainable forest management policies and practices. Innovation: The project seeks to build upon and complement the cultural ecology of small holder farmers by applying an agroecosystem approach to integrate forest and cropland management. In so doing, the project will not only generate global benefits including carbon storage, improved land cover, water provision, land stabilization, and biodiversity, but it will also generate significant critical national benefits in terms of enhanced food security in a region of the world where food insecurity is high.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

Since the approved PIF, additional risks, rating and mitigation measures were identified.

This project presents moderate risks in an overall atmosphere of increased openness and optimism for change. It will build on a sound foundation and established approach of community-based forest management and a trend to increase local control of farmers over what they plant and how they manage their fields. A number of potential risks have been considered:

Risks, ratings and their mitigation measures

Risk	Rating	Mitigation measures
Political pressure may continue or increase to log forests at unsustainable rates going forward, maintaining or increasing forest degradation rates.	Medium	The project design emphasizes improving governance, particularly local participation and enhancing transparency, in forest management. The project will also work with partners such as UN-REDD to highlight the benefits Myanmar may have from improved and enhanced SFM. Trends in Myanmar for teak is to move more and more to plantation production, which may reduce pressure to log closed forest unsustainably.
The capacity at local FUG level to support SFM is just emerging and may be difficult to operationalize effectively.	Medium	The project will apply a systematic capacity building program for FUGs that will be supported first by strengthened tenure for FUG work and secondly by new partnerships among Government, civil society, and the international development community to initiative and sustain FUG capacity building.
Increased frequency or regularity of temperature extremes caused by CC may trigger shifts and movement in forest types across agro-ecosystems and/or disease and insect infestations.	Uncertain	The project will instill an approach to SFM that is underlain by fundamental scientific principles and participatory methods and mechanisms that will enable stakeholders to modify SFM approaches as needed. Local level monitoring is also a key part of the project's work, which will enable stakeholders to apply adaptive management in response to changes over time. Well-managed forest stands will also be healthier and more resilient to climate change. And finally, a more flexible land use policy approach to "agriculture" and "forest" land will only help stakeholders respond to climate driven shifts.
*Increased frequency, or regularity of temperature extremes and changing rainfall patterns caused by climate change may necessitate changes in cropping pattern.	Impact: 3 Probability: 3	The project design encourages crop diversification, thus reducing dependency on a single crop and introduces more mixed cropping systems, reducing vulnerability to single crop failure. Participatory varietal selection helps ensure selection of crop to fit local conditions and encourages farmers to take an active role in varietal selection and maintenance, which allows for cultivation of range of different varieties, potentially suited to different conditions.
*Increased frequency, or regularity of temperature extremes and changing rainfall patterns caused by climate change may trigger disease, and/ or pest infestations in crops.	Impact: 4 Probability: 2	The threat of disease and pest attack is always present. Linking farmers together through farmer field schools enables faster identification of emerging problems and helps provide farmers with knowledge and links for accessing assistance.
There may not be sufficient incentive for communities to form and sustain FUGs.	Medium	The project will be designed to build on the positive momentum in Myanmar for change, particularly with respect to strengthening land tenure security and the community forestry policies and incentives in order to encourage local stakeholders to form FUGs and to practice SFM. This will include changes that will allow FUGs to benefit from commercially valuable timber on CF lands.
Government financing constraints may limit investments in SFM, and indeed place more pressure on forest resources.	Medium	The project will be designed to uncover and secure the full value of the types of services from healthy forest ecosystems and sustainable forest management, both from ecosystem services perspective and from the REDD+ perspective, shedding new light on the benefits of SFM.
*Government financing constraints may limit investment in SLM and extension services may be under resourced to implement the project.	Impact:5 Probability: 3	The project is designed to include NGOs (both international and national) as implementing agencies alongside government agencies, which will enhance capacity for implementation as well as drawing on the considerable experience already present in both the government and non-government sectors in SLM activities.

*Additional risks identified during the preparation phase.

A.7. Coordination with other relevant GEF financed initiatives

Coordination has been significantly strengthened during the preparation phase since the approved PIF.

The proposed project will coordinate with the following GEF financed initaitves as below.

Summary of GEF projects in Myanmar

Project title	Principal donor/ agency	Dates	Budget	Project objectives and Primary activities	Project Coordination Measures
Preparation of National Adaptation Programme of Action (NAPA)	UNEP	Approved in 2008	USD 200,000 from GEF, USD 30,000 from co-financing	NAPA development	The NAPA was used to help define the proposed project activities
Adapting Community Forestry Landscapes and Associated Community Livelihoods to a Changing Climate, in Particular an Increase in the Frequency and Intensity of Extreme Weather Events	UNEP	Approved in 2013	USD 5,087,500 from GEF, USD 19,211,000 from co-financing	To increase the resilience of Community Forestry and associated local community livelihoods to climate change-induced risks in the Central Dry Zone, Rakhine Coastal State and Ayeyarwady Region.	This proposed project will work closely with this UNEP program also run through Ministry of Environmental Conservation and Forestry (MOECAF)/Environment Conservation Department (ECD), and Forest Department (FD), Ministry of Transport(MoT)/ Department of Meteorology and Hydrology (DMH)
Improvement of Industrial Energy Efficiency	UNIDO	Approved in 2013	USD 2,830,000 from GEF, USD 13,800,000 from Co-financing	To promote sustained GHG emissions reduction in the Myanmar industry by improvement of policy and regulatory frameworks and institutional capacity building for industrial EE and implementation of energy management system, based on ISO 50001, EnMS and optimization of energy systems in industry.	Ministry of Industry, Ministry of Environment Conservation and Forestry, Ministry of Energy etc.
Enabling Activities to Facilitate early Action on the Implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Myanmar	UNIDO	Approved in 2013	USD 500,000 from GEF, USD 500,000 from co-financing	The overall objective of the proposed Enabling Activities (EA) is to strengthen national capacity and capability to prepare a National Implementation Plan (NIP) for the management of POPs with a basic and essential level of information to enable policy and strategic decisions to meet the requirements of the Stockholm Convention.	Ministry of Environmental Conservation and Forestry (MOECAF)
Strengthening Sustainability of Protected Area Management	UNDP	Approved in 2013	USD 6,127,850 from GEF, USD 17,896,300 from co-financing	Strengthen the terrestrial system of national protected areas for biodiversity conservation through	Projects will be aligned, particular at the upland pilot site. The project is run through the Ministry

				enhanced representation, management effectiveness, monitoring, enforcement and financing	of Environmental Conservation and Forestry (MOECAF), Wildlife Conservation Society (WCS)
Development of the National Biodiversity Strategy and Action Plan (NBSAP)	UNEP	Approved in 2008	USD 200,000 from GEF, USD 50,000 from co-financing	The goal of the project is to enable Myanmar to better meet its immediate obligations under the Convention on Biological Diversity, especially in relation to Article 6: General measures for conservation and sustainable use.	The NBSAP helped inform this proposed investment.
Summary of GEF regional projects including Myanmar					
Building Capacity for Regionally Harmonized National Processes for Implementing CBD Provisions on Access to Genetic Resources and Sharing of Benefits	UNEP	Approved in 2011	USD 750,000 from GEF, USD 750,000 from co-financing	The objectives of the project are to: (1) strengthen the capacity of Southeast Asian countries to implement the CBD provisions on ABS through the development of full and effective national ABS frameworks; (2) increase understanding of ABS issues among stakeholders and the general public and strengthen national capacity for country negotiators to have full understanding of issues and preferred options in the negotiation on the international ABS regime in a way that protects national interests and promotes equitable benefit sharing; and (3) improve public understanding of the contribution ABS can make to biodiversity conservation and sustainable livelihoods.	Lessons learned from the proposed project will help inform the regional project. Executing agencies : ASEAN Secretariat, ASEAN Centre for Biodiversity (ACB), United Nations University Institute of Advanced Studies (UNU-IAS)
Support to GEF Eligible Parties (LDCs & SIDs) for the Revision of the NBSAPs and Development of Fifth National Report to the CBD - Phase II	UNEP	Approved in 2012	USD 6,118,200 from GEF, USD 5,513,640 from co-financing	Project Objective: With the overarching goal of integrating CBD Obligations into National Planning Processes through Enabling Activities, the main objective of this project is to enable GEF eligible LDCs and SIDs to revise the National Biodiversity Strategies and Action Plans (NBSAPs) and to develop the Fifth National Report to the CBD	Lessons learned from the proposed project will help inform the regional project.

GMS Forest and Biodiversity Program (GMS-FBP) - Creating Transboundary Links Through a Regional Support	ADB	Approved in 2014	USD 917,431 from GEF, USD 30,738,000 from co-financing	To strengthen transboundary cooperation for the sustainable management of a network of priority conservation landscapes in the Greater Mekong Subregion (GMS)	Lessons learned from the proposed project will help inform the regional project.

In addition to the above GEF projects, the proposed project will also coordinate with and through a range of relevant initiatives and groups in Myanmar. The donor situation in Myanmar is very dynamic. The nation is at the cusp of seeing a substantial increase of highly needed donor aid. This project - coordinated through FAO is well situated to help build coordination of these investments. In addition, several "Working Groups" exist in Myanmar to institutionalize greater cohesion between donor and government activities. These working groups are platforms for stakeholder participation and will be used to help this project avoid duplication and build synergies. These working groups were engaged during project design and will be regularly informed during project implementation. This will include constantly seeking out ways to maximize project impact through greater coordination as well as capture/upscale of best practices.

- The Food Security Working Group (FSWG) is a member-based network of approximately 53 non-governmental organizations, community based organizations and individuals addressing food security in Myanmar. The group directly engages with members to build their knowledge and skills on food security. The intent is to mobilize the collective capacities of the network to identify and formulate issues for research, dialogue and policy advocacy that will benefit the lives of vulnerable communities in Myanmar. The FSWG has a dedicated "Land Core Group".

- The Myanmar Environment Rehabilitation-conservation Network (MERN) was established to promote networking among local environmental NGOs working on the rehabilitation and conservation of mangrove resources and other critical eco-systems important for the livelihoods, food security and resilience to natural disasters. MERN has 16 member organizations.

- The Environmental Thematic Working Group (ETWG) was facilitated by UNDP and established in May 2009. The ETWG has not convened since July 2012 and is currently considered defunct by several national NGOs. It comprises government departments, I/LNGOs, academic institutions, UN agencies, private companies, bilateral and multilateral aid and development agencies, embassies and media organizations. The group is chaired and co-chaired by UNDP and FAO. This current coordination mechanism will remain until a new and formal mechanism is established. The FD is intended to be the focal government agency for this new Thematic Working Group, which was envisaged to play a major coordination role in the sector.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

During the project preparation, a preliminary stakeholder analysis was undertaken in order to identify key stakeholders, interests in the project and define their roles and responsibilities in project implementation. It can be seen that the list of has increased significantly compared to the list originally proposed in the PIF.

These stakeholders identified below fully participated in the project design process. This included several formal and in discussions at the pilot site and national levels. The following table summarizes the major categories of stakeholders ide roles and responsibilities in the project, and the project's approach for stakeholder involvement.

Organization	Relevance
National Government	
Ministry of Agriculture and Irrigation (MoAI)	Ministry of Agriculture and Irrigation is one of the two lead government institutions, alongside with Ministry of conservation, environment and forestry

	involved in the implementation of the project. Is expected contributing expertise from different departments: the Department of Agriculture in the extension field, the Department of Agriculture Research in new technologies, the Water Resources Utilization Department in supply of drinking and irrigation water, and the Department of Settlement and Land Records in issues related to agricultural land registration and access. The only tertiary education establishment for agriculture in the country, Yezin Agricultural University is also under the MoAI. The MoAI is responsible for overall development of the crop subsector, including: i) extension; ii) research and development; iii) irrigation; iv) agricultural mechanization; v) formulation of agricultural plans and policies; vi) higher education in agriculture; vii) agricultural micro-credit and loans; viii) agricultural land reclamation; ix) land development and land reform; x) biodiversity; xi) land surveying and mapping; xii) and coordination with key concerned agencies. The main objective of the MoAI is i) to increase crop production and productivity ii) to fulfil the needs of local consumption, iii) to export more surpluses of agricultural products, and iv) to provide assistance to rural development. Efforts are being made to promote production and productivity in 10 principal crops: paddy, sugarcane, long staple cotton, maize, groundnut, sunflower, black gram, green gram, and pigeon pea.
Department of Agriculture (DoA)	The project will be executed through the (DoA), which will play the coordinating role, in close coordination with the FD. The Department will be the key actor in enabling farmers to adopt CSA and ICLM. Moreover, it will chair the project steering committee, which will include the FD as well as representatives of civil society. (DOA) has extension staff in each of the pilot sites and will be directly involved in farmers' training, technology transfer and monitoring activities. It is the largest institution under MoAI to work for transferring appropriate technology, development of pest control, development of land utilization, cooperation and coordination with Department of Agricultural Research for technology dissemination and generation, and distribution of quality seeds to the farmers. There are 5 divisions under DOA namely Extension Division, Planning Division, Seed Division, Procurement Division, and Land Use Division. Under the Extension Division, Plant Protection Division, Horticultural Division and Plant Biotechnology Laboratory are being operated. Except industrial crops and plantation crops, Extension Division is playing in technology dissemination to the farmers for rice and other major crops.
The Department of Agricultural Planning (DAP)	The main function of DAP is to coordinate with various departments inside and outside MoAI with different objectives : i) providing assistance to policy makers in adopting agriculture policies, ii) formulation of various agricultural plans, iii) relation with international organizations and governments, iv) strengthening cooperation and coordination among inter-agency, v) agricultural trade and business management, vi) reporting and compilation of agricultural statistics, vii) conducting surveys, viii) recommendation for further development of agricultural sector, and ix) development of human resources in agricultural vocation.
Irrigation Department (ID)	ID plays a critical role for ensuring future crop productivity by promoting access to irrigation water. The goal of the irrigation department is to constitute systematic supply of water to cropping areas for agricultural development and when necessary draining out the surplus water or protecting flood water from the cropping areas as well.

Water Resources Utilization Department (WRUD)	Sustainable utilization of country's water resources for food and agriculture is a key issue in Myanmar. WRUD main functions are i) to supply irrigation water by pumping from rivers, streams and also ground water from feasible potential areas to increase the agriculture production in Myanmar, ii) to promote the socio-economic status of rural wells and piped water reticulation systems, iii) to supply crop water and drinking water from natural spring sources by gravity flow systems in the hilly region of the border area and remote areas, and iv) to disseminate the knowledge and practice of efficient usage of drip irrigation. To ensure food security and sustainable livelihoods especially in rural areas of Myanmar, small-scale irrigation scheme must also be developed particularly in central dryzone of Myanmar (pilot site 2). Promoting role of WRUD in this aspect and is to tackle water scarcity to adapt and mitigate climate change.
Department of Agricultural Research (DAR)	DAR is involved in the production of quality seeds of various crops for improved production, drought and saline tolerance and with improved resistance to major pests and diseases. DAR can also provide support for use of effective micro-organisms for soil enhancement. Research activities are mainly emphasized on agricultural production, such as development of high yielding varieties, efficient and economical farming practices, suitable cropping system for the different ecological zones, etc. Applied and basic researches are being carried out in specific crop divisions. E.g. Rice and Other Cereal Crop Division, Oil Seed Crops and Food Legumes Division, Industrial Crops and Horticulture Division, etc.
Settlement and Land Records Department (SLRD)	Maintain land ownership and tax records plays a key role in land tenure issues :The SLRD is responsible for updating land use and registration, collection of land use data and crop statistics. Its main activities are i) updating land maps and registers, ii) land survey and map production, iii) collection and compilation of timely and reliable crop statistics, iv) collection and compilation of land use statistics, v) land administration and decision on agricultural land disputes, and vi) conducting agricultural socio-economic surveys. With increasing momentum for agricultural development activities and transformation of Myanmar agriculture from traditional resource-based to knowledge-based agriculture, this department will play fundamental role for providing agricultural information and essential statistics. In order to develop need based agricultural policy formulation and analysis followed by planning, systematic agricultural statistical activities is mandatory. Current development activities are being set back by lack of sound statistics and information system.
Ministry of Environmental Conservation and Forestry (MOECAF)	The MOECAF is responsible for managing all forestlands in the country including the Permanent Forest Estate (PFE) and Public Forests. MOECAF develops the forest policy and legal frameworks and coordinates Climate Change related policy analysis and development. It is also in charge of environmental protection including the development and implementation of rules relating to Environmental and Social Impact Assessments (ESIA). The Ministry of Environmental Conservation and Forestry (MOECAF) is responsible for sustainable management of forest resources, national parks, wildlife and plant conservation. The National Commission for Environmental Affairs was terminated and the MOECAF took its responsibilities to oversee and manage all matters related to the environment and climate change. The MOECAF is also the official Myanmar focal point for the GEF. It was upgraded in place of Ministry of Forestry in September 2011 as the focal and coordinating agency for the overall environmental management. Under the same umbrella of the Ministry, the Planning and Statistics Department (PSD) coordinates and facilitates the activities of Forest Department (FD), Dry Zone

	Greening Department (DZGD), Myanmar Timber Enterprise (MTE), Environmental Conservation Department (ECD) and Land Survey Department (LSD). Of them, the Forest Department is responsible for the protection and conservation of biodiversity and sustainable development of all forest resources.
Forest Department (FD)	The FD will be the key partner on all SFM related work and will institutionalize participatory forest management as national policy and scale up SFM activities. Will be key adopters of SFM practices at the national, state, and local level and key beneficiaries of training and technical assistance. It is responsible for protection and conservation of the wildlife and sustainable management of the forest resources and ecosystems. Being established since colonial time, the FD has been the oldest well organized department among the government organizations. The FD has accumulated huge experiences on protection and conservation of forest in sustainable manner contributing to national development as well. With regard to forestry education, research and development, University of Forestry (UOF), Forest Research Institute (FRI), Myanmar Forest School (MFS) and several training centers have been established with a specific mandate to produce competent foresters, trained forest technicians and carry out research activities. The FD has achieved major developments towards sustainable forest management (SFM) which is the key mandate in Myanmar forestry. Among others are developments of communities forest, promoting herbal and medicinal plants, formulation of district forest management plans covering the whole country, formulation of a national forest master plan, promoting the concepts of model forests, and identification of Myanmar's Criteria and Indicators (C&Is) for SFM.
Training and Research Development Division, Forest Department	The goal of this division of FD is the development of capacity on the staffs and public also related to sustainable forest management, agro-forestry, community forestry establishment, extension skill, forest rehabilitation and in service trainings. Moreover coordination with international experts.
Dry Zone Greening Department (DZDG)	The Ministry of Environmental Conservation and Forestry, in its all-out effort to make the greening of the Dry Zone created a new department for this matter in July 1997. Will be an important project partner in dry zone areas for ICLM/CSA, particularly the taungya demonstrations, greening activities and demonstration for agro-forestry practices. The DZGD is undertaking greening activities in 3 regions in central dry zone of Myanmar; Sagaing, Mandalay and Magway regions. And is responsible for four main tasks; i) the establishment of forest plantations or environmental greening, for arresting the Desert- like formation and for local supply; ii) the protection of remaining natural forests; iii) the introduction and promotion of the utilization of wood fuel substitutes: iv) the management and development of water resources.
Environmental Conservation Department	It is responsible for policy formulation of environmental conservation framework process, effectively implementation of environmental conservation and management in Myanmar.
Working Groups	
Environmental Technical Working Group (ETWG)	Formed by UN agencies, local and international NGOs, the ETWG provides a forum for i) networking and sharing of information environmental issues in Myanmar; ii) sharing knowledge on technical issues in the environment field; iii) policy advice and public-private partnerships; iv) discussion of issues related to multi-lateral environmental agreements such as the UNFCCC and the Kyoto

	Protocol. The group could provide important channels for stakeholders' engagement with government on pressing environmental issues of the day.
Food Security Working Group (FSWG) & Land Core Group (LCG)	The FSWG and LCG are key civil society initiatives with strong UN and NGO participation. They will play an important role in this project's work. These roles will be detailed during the full project preparation process under the PPG. They works on food security, fishery, research and development, Land tenure rights (focus on ethnic minorities), contract farming and support information exchange and Resource Centre Contribution to reviews and studies, facilitate consultation, capacity building, advocacy and Information sharing (publications).
Myanmar Environment Rehabilitation-conservation Network (MERN)	Networking for rehabilitation and conservation of natural resources including livelihood activities among the local environmental NGOs.
International Development Organizations and Donors	
JICA	JICA is a Japanese Organization involved for a long time in Myanmar development. JICA support the inclusive development of the country through 4 missions : i) addressing the global agenda; ii) reducing poverty through equitable growth; iii) improving governance; iv) achieving human security. Though active in many different fields, JICA has experienced in the implementation and technical assistance for projects in the resources and disaster management, agricultural and rural development, natural environment conservation and food security. In the delta, JICA is present through two projects related to GEF's one : Supporting participatory multiplication and distribution system for quality rice seed, working with two groups of 50 farmers, one of which is in Laputta district. Potential link for production of organic rice seed.
GIZ (German Society for International Cooperation)	German Cooperation and Development agency, with a focus on sustainable development. In Myanmar, its activities concentrate on promoting vocational training, strengthening the private sector and developing the financial sector.
Asia Development Bank	ADB, a regional bank for development is one of the biggest donor in Asia, with aim to free the continent from poverty. With different roles (technical assistance or grant) for each project, ADB is not focus on a specific field. Nevertheless in Myanmar, many project are in close relationship with environment, agriculture and sustainable development such as "Strengthening Institutions for a Better Climate Investment" or "Enhancing Rural Livelihoods and Income".
UNDP	UNDP provides development assistance in Myanmar since its independence. Together with the government a national development framework was developed to help Myanmar in its triple transition : nation-building, state-building and economic liberalization. As ADB, UNDP has a very broad field of action, and sustainable land management is one of them (see the baseline table).
World Bank	The WB reengaged a strong relationship with the government in order to give assistance to enhance social reform in Myanmar, to improve the livelihoods of total population. Their action is found in all sector of the economy, but some project were related to agriculture, forestry and environment sustainability, such as Irrigation projects, Wood industry development, etc.
USAID	USAID is the US embassy services for development and cooperation. USAID is directly engage with organizations and institutions to support political reforms, ethnic reconciliation, and to strengthen capacity building.

	USAID is also deeply involved in food security, and designed a specific program for it aligned with the principles of Feed the Future, the U.S. Government's global hunger and food security initiative, and will build upon lessons learned from the initiative's work in Asia.
LIFT Livelihoods and Food Security Trust Fund	LIFT is a multi-donors fund established in Myanmar since 2009. The major objective of LIFT is to provide assistance for the achievement of the first Millennium Development Goal "eradicate poverty and hunger". LIFT also take into account sustainability and fund some projects related to the environment (see baseline, Livelihoods and Environmental Assets Restoration in Rakhine)
Civil Society Organizations, INGOs, NGOs	
Mercy Corps	One of eleven international and national NGOs actively engaged in development activities in Laputta district (Pilot Site 3) and conducted farmer field schools for improved crop production, processing and storage. Planning to withdraw from the area in August 2014.
Land Core Group	Is recognized by government as the leading civil society organization working and advising on land tenure issues. Recently gained Chief Minister approval for sensitive workshop on land tenure issues in pilot site one (Mindat District). Key advisory body with in project steering committee on land tenure issues.
CARE	CARE has experience of introduction of Sloping Agricultural Land Technology to communities with both successful and less successful outcomes. Will be involved in implementation of scenario three in pilot site one.
GRET, GAA (German Agro-Action) and World Concern	Three international NGOs working with introduction of SRI in different areas of Myanmar. GAA involved in introduction in the Ayeyarwady division. GRET started projects in Ayeyarwady Region (Bogalay & Mawgyun Townships) for the recovery phase after Cyclone Nargis. It contributes the improvement of livelihood in agriculture and livestock sector, and innovating for Rural development and Environmental restoration. The overall objectives are : i) to contribute to livelihood security and local governance improvements in rural areas of Myanmar and ii) to support the emergence and strengthening of appropriate services for rural development along with production and dissemination of relevant information for rural farming communities. The specific objective is to implement actions focused on innovation that aims at supporting local stakeholders to deliver services, create sustainable development of rural farming communities and sound natural resource management.
Mangrove Service Network (MSN)	MSN is a Local NGO working in participation with government organizations, Local & International NGO communities; MSN Provides services in environmental conservation, in sustainable livelihoods, community development and that particularly benefits and addresses the needs of marginalized population in rural grassroots communities of Myanmar. MSN is mostly involved in Rural Energy (fuel wood saving training focused on women and improved stoves) and forest conservation (nursery operation & mangrove plantation establishment)
EcoDev	Community Forest, environmental conservation, climate change awareness raising, gender equity and income generation, land tenure rights (expertise with Kachin Ethnic Minority) Contribution to reviews and studies, facilitating consultation, awareness raising, mobilization and facilitation of piloting, implementation and monitoring.
FREDA (Forest Resource Environment Development and Conservation Association)	Forest Resource Environment Development and Conservation Association is a non-political, non-profit and non-government organization in the forestry sector of Myanmar. It implements sustainable forest management projects including community forest, development of small farmers in the context of Climate Change

	and system for rice. FREDA has been engaged in a wide range of activities for rural development, planning and demonstration for community participation in reforestation and forest conservation especially in areas dominated by slash-and-burn agriculture, promotion of sustainable forest management, introduction of appropriate methodology for improved land use systems for rural community development, implementation of integrated watershed management activities for natural disaster preparedness and climate change adaption, restoration of degraded mangrove ecosystem in the delta of Myanmar, wildlife conservation with special focus on tiger, leopard and elephant, introduction of bio-gas production technology for village electrification, and wildlife products trade survey. It also supports to scholars in environmental science at M.Sc. and Ph.D. levels in partnership with donors and universities concerned. FREDA has cooperated with the forestry authorities in the formulation of a set of national Criteria and Indicators (C&I) for Sustainable Forest Management (SFM) in Myanmar. It has also contributed in the development of national initiatives to promote field assessment activities essential in the process of forest management certification. The projects are often implemented with the co-operation of the international NGOs overseas and in-country based and UN agencies.
Ecosystem Conservation and Community Development Initiative (ECCDI)	It is one of the lead organizations in restoration, conservation and management of ecosystems of natural resources and community development. The main objectives are i) To ensure sustainability of natural ecosystems and enhance national socio-economic development through environmental restoration and poverty alleviation ii) To guarantee a sustained environment through enrichment of biodiversity by conserving and improving natural ecosystems and etc.
Academic and Scientific Organizations	
Yezin Agricultural University (YAU)	YAU is the only university level of higher education in agriculture in Myanmar. Primary functions are teaching and training, conducting research and providing extension service to the public. Specific objectives are to produce highly qualified professionals needed for the development of the agriculture sector. It also provides technical trainings on modern method of agriculture for the farming communities including non-degree training program. YAU has 228 academic staff including 43 PhD degree holders, 70 Master Degree holders in agricultural sciences. YUA has university model research farm of about 102 acres. YAU has seven outreached campuses which are hosting the final year bachelor degree students for doing research on their specialization study. There are seven major academic departments, namely Department of Agronomy, Agricultural Botany, Agricultural Chemistry, Entomology and Zoology, Plant Pathology, Horticulture and Agricultural Economics. Agronomy and Agricultural Botany Departments actively engaged in research on climate smart agriculture and varietal improvement, including farmer participatory varietal selection. Collaboration potential for identification of improved, drought resistant varieties suited to the dry zone pilot site, in Mandalay Region.
International Rice Research Institute	Myanmar- IRRI collaboration began in late 1960s. Since then, rice breeding and varietal development programs have been conducted by the Rice Section of DAR up to the present. There were 80 rice varieties released by DAR, of which 12 varieties are widely grown on 56% of total rice sown areas. It has a representative office in Laputta, pilot site three.
University of Forestry	The UOF was established in 1992 and is located in Yezin. For the improvement of social forestry, sustainable forest management practices and timber harvesting by

	doing R&D in pilot sites. University of Forestry (UOF) is leading human resources development for forest and environmental conservation in academic and practical skills under MOECAF. There are two main division called planning and teaching in UOF. UOF have a good coordination with Germany, Japan, Korea, China Australia and Thailand for Master and PhD study programme. The university is involved in the project for the improvement of social forestry, sustainable forest management practices and timber harvesting by doing R&D in pilot sites.
Forest Research Institute	The FRI is providing technical information on all aspects of forestry and forest-based activities to increase the contribution to the development of forest rehabilitation, natural resources management and efficient utilization of timber.
Training and Research Development Division, Forest Department	Development of capacity on the staffs and public also related to sustainable forest management, agro-forestry, community forestry establishment, extension skill, forest rehabilitation and in service trainings. Moreover coordination with international expertise.
Local and Indigenous Communities	
Minority Groups	Several minority groups are situated in proposed project areas. These include member of the Kachin, Karen, Kayar, Chin, Mon, Rakhine, and Shan, etc. As Myanmar has a wide range of ethnic minorities, their representatives should be involved in the project, especially considering the fact that the pilot sites are in different area and should be adjusted. Moreover local association could be linked to the project in the pilot sites. This must concern not only ethnic minorities but also other groups, especially women.
Private Sector	
Farmers and Forest user groups	Will be key adopters of ICLM/CSA and SFM practices at the local level and key beneficiaries of training and technical assistance. This will include ethnic minority and tribal groups where possible.

Roles and responsibilities of the executing partners

At the request of the Government of Myanmar, the project will be executed by FAO in close consultation with MOECAF and MoAI. FAO will carry out its responsibilities to support project execution through the National Project Director (NPD). Funds received will be used to execute the project activities in conformity with FAO's rules and procedures.

The project will be implemented through a National Project Implementation Unit (PMO). This unit will be situated within the FAO compound in Yangon. This will be part of the GEF implementation support unit. Small field offices will be established in Nyaung Oo (upland and dry zone pilot sites) and Laputta (coastal zone pilot site). Various project staff will also be placed within the Ministry of Environmental Conservation and Forestry (MOECAF), Ministry of Agriculture and Irrigation (MoAI), and associated training institutions.

The project is designed to achieve many of its key outputs by means of letters of agreement (LoA) with key partners. These LoA are listed under the "Contracts" Budget Line of the project budget. Further detail on results-based LoA work plans and budgets will be developed during inception phase of the project. Specific Letters of Agreement (LoA) will be elaborated and signed between FAO and the respective collaborating partner. This will include inter alia, civil society organizations as appropriate. Project financing and monitoring will reflect the following implementation responsibilities of the MOECAF and MoAI.

Component/Output	*Principle*
Component 1: Institutional, policy and regulatory frameworks strengthened to support SLM, CSA, and SFM strengthened	
1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management	MOECAF MoAI
1.2: Updated national forestry master plan integrating SFM/REDD and community forestry	MOECAF
1.3: Updated agricultural master plan integrating CSA	MOECAF MoAI
1.4: Training in SFM, CSA, and SLM at national, state, and district levels	MOECAF MoAI
1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA	MOECAF MoAI
1.6: Pilot digital land-use mapping process in priority districts	MOECAF MoAI
Component 2: Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems	
2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems	MoAI
2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices	MoAI
2.3: National farmer field school curriculum developed	MoAI
2.4: Model farmer field schools established in three priority agro-ecosystems	MoAI
2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems	MoAI
Component 3: Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems	
3.1: National ecosystem-based SFM capacity building program established	MOECAF
3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives	MOECAF
3.3: Community based forestry implementation strategy and handbook completed	MOECAF
3.4: Community-based forestry capacity building and technical support program operationalized	MOECAF
3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems	MOECAF
Component 4: SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally	
4.1: Support program established for scaling-up SFM practices	MOECAF
4.2: Support program established for scaling-up CSA practices	MoAI

FAO's role and responsibilities, as the GEF Agency (and as an executing agency, when applicable), including delineation of responsibilities internally within FAO

FAO will be the GEF implementing and executing agency. As the GEF Agency, FAO will be responsible for project oversight to ensure that GEF policies and criteria are adhered to, and that the project efficiently and effectively meets its objectives and achieves expected outcomes and outputs as established in the project document. FAO will report on project progress to the GEF Secretariat and financial reporting will be to the GEF Trustee. FAO will closely supervise the project by drawing upon its capacity at the global, regional and national levels, through the concerned units at FAO-HQ, the Sub-Regional Office in Bangkok and the FAO Representation in Yangoon. There is a complete separation between the GEF oversight responsibilities and project execution roles and responsibilities, as described below.

Executing Responsibilities (Budget Holder): Under FAO's Direct Execution modality, the FAO Representative in Myanmar will be the Budget Holder (BH) of this project. The BH, working in close consultation with the LTO, will be responsible for timely operational, administrative and financial management of the project. The BH will head the multidisciplinary Project Task Force that will be established to support the implementation of

the project and will ensure that technical support and inputs are provided in a timely manner. The BH will be responsible for financial reporting, procurement of goods and contracting of services for project activities in accordance with FAO rules and procedures. Final approval of the use of GEF resources rests with the BH, also in accordance with FAO rules and procedures.

Specifically, working in close collaboration with the LTO, the BH will: i) clear and monitor annual work plans and budgets; ii) schedule technical backstopping and monitoring missions; iii) authorize the disbursement of the project's GEF resources; iv) give final approval of procurement, project staff recruitment, LoAs, and financial transactions in accordance with FAO's clearance/approval procedures; v) review procurement and subcontracting material and documentation of processes and obtain internal approvals; vi) be responsible for the management of project resources and all aspects in the agreements between FAO and the various executing partners; vii) provide operational oversight of activities to be carried out by project partners; viii) monitor all areas of work and suggest corrective measures as required; ix) submit to the GEF Coordination Unit, the TCID Budget Group and the LTO semi-annual financial reports on the use of the GEF resources (due 31 July and 31 January). These reports will show the amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments), and details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in the Project Document; x) be accountable for safeguarding resources from inappropriate use, loss, or damage; xi) be responsible for addressing recommendations from oversight offices, such as Audit and Evaluation; and xii) establish a multi-disciplinary FAO Project Task Force to support the project.

The FAO Lead Technical Unit (LTU). The Forest Assessment Management and Conservation Division (FOM) of FAO's Forestry Division will be the LTU for this project and will provide overall technical guidance to its implementation, particularly through the Mountain Partnership Secretariat. FOM will delegate the responsibility for direct technical supervision to the FAO country Office.

FAO Lead Technical Officer (LTO) The Senior Forestry Officer in the FAO Country Office will be the LTO for the project. Under the general technical oversight of the LTU, the LTO will provide technical guidance to the project team to ensure delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical backstopping from all the concerned FAO units represented in the Project Task Force. The Project Task Force is thus composed of technical officers from the participating units (see below), operational officers, the Investment Centre Division/GEF Coordination Unit and is chaired by the BH. The primary areas of LTO support to the project include:

- Review and ensure clearance by the relevant FAO technical officers of all the technical Terms of Reference (TOR) of the project team and consultants;
- Ensure clearance by the relevant FAO technical officers of the technical terms of reference of the Letters of Agreement (LoA) and contracts;
- Lead the selection of the project staff, consultants and other institutions to be contracted or with whom an LoA will be signed in consultation with MoE;
- Review and clear technically reports, publications, papers, training material, manuals, etc.;
- Monitor technical implementation as established in the project RF;
- Review the Project Progress Reports (PPRs) and the annual Project Implementation Review (PIR).

A multidisciplinary Project Task Force will be established by the Budget Holder and comprised of technical units in the Country Office and FAO Headquarters, the Asia and Pacific Service (TCIB) of the Investment Centre Division (TCI), and the TCI GEF Coordination Unit. Participating units from across FAO will be involved in supporting the project's work and in ensuring that the project stays on track to achieve its overall objectives and indicators of success. When appropriate, these units within the Sub-regional Office for Central Asia and HQ will provide technical support in areas such as: forest and sustainable land management, climate smart agriculture, gender, climate change vulnerability assessment and adaptation. TCI will provide adaptive management support and results-based management oversight and guidance to the LTO and the participating units.

FAO GEF Coordination Unit in TCI will review and approve PPRs, annual PIRs and results-based financial reports and budget revisions. The GEF Coordination Unit will organize annual independent supervision missions, in consultation with the LTU, LTO, the BH and TCI. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GEF Coordination Unit. The GEF Coordination Unit will work closely with the FAO Evaluation Office (OEDD) to ensure that the project's mid-term review and final evaluations meet GEF requirements by reviewing evaluation ToRs and draft evaluation reports. Should the PIRs or mid-term review highlight risks affecting the timely and effective implementation of the project, the GEF Coordination Unit will work closely with the BH and LTO to make the needed adjustments in the project's implementation strategy.

The Investment Centre Division Budget Group (TCID) will provide final clearance of any budget revisions. The FAO Finance Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the GEF Coordination Unit and the TCID Budget Group, call for project funds on a bi-annual basis from the GEF Trustee.

Project technical, coordination and steering committees

Steering Committee. A Project Steering Committee (PSC) will be established and chaired by MOECAF with the participation of MoAI and FAO, representative and at least one member from the Stakeholder Committee (SC – see below), and observers from NGOs and the Private Sector. The PSC will meet minimally two times per year and its specific responsibilities will be: i) overall oversight of project progress and achievement of planned results as presented in bi-annual PPRs; ii) take decisions in the course of the practical organization, coordination and implementation of the project; iii) facilitate cooperation between PMO/MOECAF and project participating partners and project support at the local level; (iv) advise the PMO on other on-going and planned activities facilitating collaboration between the Project and other programmes, projects and initiatives in Myanmar; (v) facilitate that co-financing support is provided in a timely and effective manner; and (vi) review bi-annual Project Progress and Financial Reports and approve AWP/B.

Member Organization	*Organization Representative*
MOECAF	Deputy Minister, Chair of SC
Forest Department, MOECAF	Director General
Environmental Conservation Department, MOECAF	Director General
Dry Zone Greening Department (DZGD), MOECAF	Director General
Department of Agriculture, MoAI	Director General
Department of Agricultural Planning, MoAI	Focal person for project
Department of Land Settlement and Records (SLRD), MoAI	Focal person for project
Department of Agricultural Research, MoAI	Focal person for project
Yetzin University of Agriculture, MoAI	Focal person for project
FAO	Representative
FAO	CTA/ Technical Advisor of GEF
Land use committee	Representatives

Project Management Office (PMO) will be hosted by FAO and will be responsible for day-to-day project operations. The role of the PMO will be, in close consultation with the PSC and independent expert group (IEG) members (see below), to ensure the coordination and execution of the Project through the timely and efficient implementation of annual work plans.

The PMO will manage project information and documentation and distribution of project reports, newsletters and training materials to relevant stakeholders; manage project M&E, conduct regular field M&E visits to project sites, and assist the National Project Manager (see below) in preparing bi-annual Project Progress Reports monitoring progress in achieving project outputs and outcome indicators, and in liaising with FAO Representation's Finance and Administrative Assistant (for preparing financial reports). FAO will provide office space, equipment and utilities and part of travel as a counterpart contribution to project management.

The PMO will act as secretariat to the PSC. It will coordinate work and follow closely the implementation of project activities, handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of provincial/oblast and local/rayon inter-institutional collaboration, monitor project progress and ensure the timely delivery of inputs and outputs. It will organize workshops and annual meetings for the Project for monitoring project progress and develop work plans with detailed budget for the next year to be approved by the PSC. It will be responsible for implementing the project's M&E plan, managing its monitoring system and communication programme, the elaboration of bi-annual Project Progress and Financial reports and assist in the preparation of the annual Project Implementation Review (PIR) and midterm and final evaluations. Project Progress Reports on implemented activities and progress in achieving project outputs and outcomes, and financial statements of expenditures and status for the previous year will be submitted together with the Annual Work Plan and detailed Budget (AWP/B) to the PSC and FAO via MOECAF's Project Director.

The project will benefit from a full-time National Project Manager in charge of project daily management and technical supervision including, preparing "Annual Work Plan and Budget (AWP/B)" and allocating tasks to Field Offices, preparing TORs and technical requirements for consultancy services contracting documents and material and equipment procurement documents, providing technical supervision and guidance to the Field Offices in implementing project activities, conducting regular field supervision visits and provide on-site guidance to oblast/rayon technical staff, day-to-day coordination and communication with Field Office staff in charge of the GEF project, and preparing the project progress reports.

The project will also benefit from a part-time Senior Technical Advisor. The international level STA will back-stop the PMO activities and provide technical advice and direction to project implementation activities.

A Finance and Administrative Assistant will be in charge of preparing detailed budgets for cash transfer requests based on the AWP/B and project account cash balance, keeping the financial records and regular review of the project account, reviewing the receipts and financial reports submitted by field offices and sub-contractors and preparing bi-annual financial statement of expenditures, preparing the personnel and services contracting and procurement documents and participate in contracting and procurement processes including of submission of documentation to FAO for ex-antes clearances, and preparing relevant documents for internal and external financial audits.

Independent Technical Expert Group. An Independent Expert Group (IEG) will be established to provide technical advice on specific project components and outputs. This group will include representation from key organizations, including co-funders.

Member Organization	*Organization Representative (Job title/position)*
FAO	Project Manager
FD	National Project Coordinator
MOECAF	Technical officer 1
MOECAF	Technical officer 2
MOECAF	Technical officer 3
MoAI	Technical officer 1
MoAI	Technical officer 2
MoAI	Technical officer 3
UNDP	Technical officer
ADB	Technical officer
WB	Technical officer
FSWG	Representative
ETWG	Representative

The IEG may also be involved in technical evaluation of project progress and outputs, and identification of possible solutions and/or changes in project activities when technical issues arise in the course of project

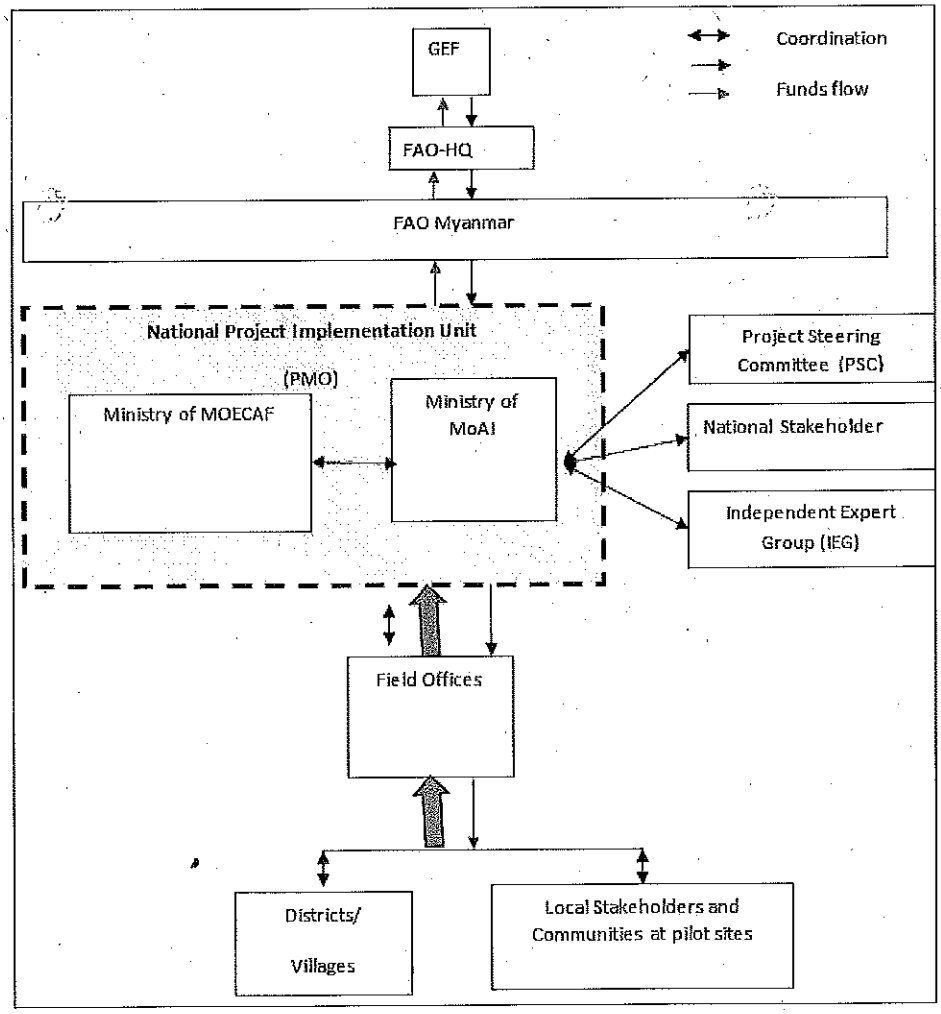
implementation.

Local Stakeholder Committees. Local Stakeholder Committees (NSC) will: i) provide advice on relevant policies, actions and measures in particular related to participation of local communities at the pilot sites; ii) provide new ideas and thinking on conflict resolution over management of natural resources, options for increased carbon sequestration and sustainable use, and creative initiatives on how to increase public awareness of socio-economic and global environmental benefits generated by SFM and SLM; and iii) promote communications between the government agencies and local communities and the private sector.

The composition of the LSC's will consist of the Township Land Use Committee plus civil society representatives:

Member Organization	Organization Representative (Job title/position) (e.g. Deputy Director General)
General Administrative Department	Staff officer
Forest Department	Staff officer
DoA	Staff officer
SLRD	Staff officer
Civil societies	Representatives
INGOs and LNGOs	Representatives
Irrigation Department	Staff officer

Organizational Chart



B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

The project will invest both at the national level and in local communities to ensure that the benefits from improved managent of forest and agricultural lands translates into increased and more secure livelihoods for vulnerable communities living on subsitance agriculture and suffering from loss of forestlands and the degradation of croplands. At the national level, baseline programs will struggle with addressing the key drivers of deforestation and degradation due to an insufficient legal, regulatory, and institutional framework for SFM/CSA, as well as the lack of capacity and minimal experience of stakeholders. GEF resources will support the mainstreaming of SFM and SLM objectives into productive forest and cropland management practices. The proposed project will provide an opportunity for a major scaling up and strengthening of CF management techniques to address capacity constraints within the forestry sector. The project will address critical underlying causes related to governance and support stakeholders to overcome key barriers to reducing deforestation and degradation. Without GEF's incremental support, investments will not focus on integrating carbon sequestration and SFM objectives into productive forest management practices and policies and SFM will remain in its infancy because it will not be transferred effectively to the emerging CF mechanism.

At the local level, the project will focus on interventions that improve local communities' vulnerabilities and improve their livelihoods. For instance, the project design encourages crop diversification, thus reducing dependency on a single crop and introduces more mixed cropping systems, reducing vulnerability to single crop failure. Participatory varietal selection helps ensure selection of crop to fit local conditions and encourages farmers to take an active role in varietal selection and maintenance, which allows for cultivation of range of different varieties, potentially suited to different conditions. The project will apply a systematic capacity building program for FUGs that will be supported first by strengthened tenure for FUG work and secondly by new partnerships among Government, civil society, and the international development community to initiative and sustain FUG capacity building.

The achievement of socio-economic benefits is intrinsically linked to the achievement of global benefits—this is, the global benefits will only be achieved if the national government and local communities see a benefit from the investments proposed. The table below summarizes the baseline activities, the project alternatives, and the global benefits that these alternatives will provide. For instance, a farmer will only change their water management technique in rice production if the new technology provides better process efficiency as well as a reduction in costs. In this sense, all of the project alternatives proposed below will improve local livelihoods while at the same time delivering global environmental benefits.

Baseline	Project Alternative	Global Benefits
Croplands		
Scenario 1: Sustainable rice intensification		
Inefficient water management; Continuously flooded paddys ½ paddy straw burned, ½ fed to animals. 3x more urea used than in alternative & not site-specific; low organic matter return. Shorter fallow periods w/no crop rotation w/ legumes leads to soil degradation, increased emissions, and reduced soil organic matter (SOM), i.e. carbon stored in soil. *Carbon fluxes without project: 5.9 tCO_2eq /ha/year emissions (source).*	Improved water management; Intermittently flooded paddys. ½ paddy straw incorporated into field; ½ used as animal feed. Deep placement of granules and site specific nutrient management (1/3 of baseline). Use of short duration and improved seed varieties; Crop rotation using legumes increases SOM; reduces fertilizer use. Carbon fluxes with project: 4.7 *tCO_2eq/ha/year emissions (source).*	Avoided emissions (sink): 1.2 tCO_2e/ha/ yr @ 20,000 ha in Shan State and 20,000 ha in Coastal area; 40,000 ha X 1.2 tCO_2e/year/ha @ 4 years = 192,000 tCO_2e for project lifespan. 40,000 ha X 1.2 tCO_2e/year/ha @ 15 years = 720,000 tCO_2e for 15 year post project. Total avoided emissions: 912,000 tCO2e. *Carbon calculations done using FAO EX-ACT Tool.
Scenario 2: Improved Annuals		
Tenure insecurity disincentive for sustainable use. Burning crop residues; Frequent tillage. Mono-cropping. Exposed hill tops planted in annuals prone to erosion. No water harvesting/ collection measures. *Carbon fluxes without project: .63 tCO_2eq /h/year emissions (source).*	Land use planning and tenure system enhances local tenure security; Compost of crop residues; Minimum/no tillage, Crop rotation/diversification, and mixed cropping; improved nutrient management More perennial/fruit trees on hill tops instead of erosion-prone annual crops. Reduce soil erosion via soil-water conservation, and contour farming. Improved crop varieties more resistant to drought. *Carbon fluxes with project:* 2.42 *tCO_2eq/ha/year emissions (sink).*	Avoided emissions (sink): 3.1 *tCO_2eq/ha/year* Assuming 10,000 ha in Shan State & 10,000 ha in Dry Zone (Magway Region): 20,000 ha X 3.1 tCO_2e/ha/year = 62,000 tCO_2/year X 4 years = 248,000 tCO_2e over life of project. 20,000 ha X 3.1 tCO_2e/ha/year = 62,000 tCO_2/year X 15 years = 930,000 tCO_2e for 15 year post project. Total sequestration: 1,178,000 tCO_2e.
Scenario 3: Land-use change to perennials		
No soil conservation measures Unsustainable cropland management practices in erosion prone areas Minimal soil cover Baseline source/sink = 0 Very few perennial crops Agroforestry not widely practiced Trees not integrated in the landscape *Carbon fluxes without project: 0 tCO_2eq /h/year emissions (source).*	Agroforestry with annuals and perennials. Agroforestry with annual cropping to increase soil fertility, water retention, and to decrease soil erosion Integrate multi species tree nurseries to ensure seedlings and seeds are available Integrated trees in landscape for C sequestration and multi-functionality: fodder, fuel, construction materials, biodiversity, and environmental conservation. Perennial cropping of suitable trees/shrubs with market value e.g. spices, fruit trees *Carbon fluxes with project:* 32.47 *tCO_2eq/ha/year sequestration (sink).*	Sequestration (sink): 32.5 *tCO_2eq/ha/ year* Assuming 2,000 ha in Shan State & 2,000 ha in Dry Zone (Magway Region): 4,000 ha X 32.5 tCO_2e/ha/year = 130,000 tCO_2/year X 4 years = 520,000 tCO_2e over life of project. 4,000 ha X 32.5 tCO_2e/ha/year = 130,000 tCO_2/year X 15 years = 1,950,000 tCO_2e for 15 year post project. Total sequestration: 2,470,000 tCO_2e. LD benefit across three scenarios above: *64,000 ha croplands under effective land use management with vegetative cover maintained or increased.*

Forests		
Scenario 1: Inappropriate management by the FD		
Non-project scenario is unsustainable production forest management in 50,000 ha of FD-managed forest, average density 80 m^3/ha, average net degradation of 5m^3/ha /yr. Top-down timber production-oriented forest management discounts SFM principles, excludes local uses. Inadequate capacity to plan and implement SFM. Main drivers are: Technical deficiencies in FM – unsustainable timber extraction Damage to ecosystem from careless extraction methods Unplanned extraction of forest products to meet local needs Insufficient resources and infrastructure for forest protection Lack of local stake in forest management strategy Insufficient technical resources for forestry training institutions Lack of capacity in multi-purpose forest management planning	*Project scenario is management under the MSS with 0 m^3/ha net gain/loss by year 4 of the project. Degradation will be halted and a balance between extraction and recuperation will be maintained.* Improved SFM-based management planning in FD-managed "closed forest" lands. Capacity building in MSS and other SFM techniques to FD employees in the field. Forest inventory capacity building and new inventories carried out in target areas. Improved SFM strategies developed and implemented in target areas. Reduced Impact Logging (RIL) strategy development, capacity building and implementation Regular forest resources needs assessment of local communities and incorporation into production forest management planning Incorporate local usufruct rights to forest products into ongoing reforms of land tenure and forest policy Local feedback system for forest management planning, grievance mechanism at DFO level to sanction nonconformity with agreed management plans	1) Improved multi-functional SFM by FD across 50,000 ha of closed forest with average density of 80m^3/ha, currently logged unsustainably at the rate of 5m^3/ha/year yields short-term and long-term global benefits in the form of avoided emissions (AE): Short-term benefits accruing project years 3-5: 313,125 tC or 1,148,125 $tCO2_e$. Note: assumes benefits begin accruing in year 3. Long-term: years 6-20 (post-project): 3,131,250 tC or 11,481,250 $tCO2_e$ 2) Improved SFM management across 13,444,000 ha of forest over the long-term.
Scenario 2: Community forests: Reduced Degradation		
Unplanned fuel wood harvest and overgrazing by local communities degrades forests; FUGs have no timber rights and limited rights to forest products from CF. SFM not tied to incentives for FUGs to implement SFM. Encroachment/conversion of natural forest areas to farmland and plantations (upland) due to unsustainable extraction of timber, minor forest products and shifting cultivation. Forest ecosystem services not quantified or valued.	Community forest management plans allow for sustainable offtake of fuel wood, fodder. Partnership between FD & FUGs enable forest conservation. Socially inclusive FUGs formed and supported by a gender and pro-poor approach and support for equity. Benefit sharing incentives for FUGs Actual community forest management plans documented and operational. Regular annual monitoring of forest management interventions in 8,000 ha of community managed forest and measurement of social and environmental impacts of these activities, and the change in biomass and forest carbon pools.	3) Improved community-based SFM across 4,000 ha reduces degradation (AE) and increases C sequestration. 4,000 ha of degraded closed forest, with average density of 30 m^3/ha, currently degraded at the rate of 2m^3/ha/yr, to be brought under sustainable community forest management, leading to restoration of 1m^3/ha/yr by year 4, and 80m^3/ha in the long term. Short-term benefits accruing project years 4-5: AE: 5,010 tC or 18,370 tCO_2e C storage: 870 tC or 3,190 tCO_2e Note: assumes project effects (AE) begin year 4 and end at year 5 (project end). Long-term: years 6-20 (post-project): AE: 98,530 tC or 361,270 tCO_2e; C storage: 6,525 tC or 23,925 tCO_2e
Scenario 3: Community forests: Reduced Deforestation		
Unclassed forests under the administration of MOAI are converted to agricultural land	Community forest management plans allow for sustainable extraction of fuel wood, fodder, timber and other forest products	Improved community-based SFM across 4,000 hectares reduces deforestation (avoided emissions)

No cooperation between MOAI and FD in the management of Unclassed Forest Land Unmanaged, unsustainable extraction of forest products by local communities Unplanned encroachment by local communities and conversion of Unclassed Forests to agricultural land No land tenure or usufruct rights of local communities to Unclassed Forest land	Partnership between MOAI, FD & communities enables forest conservation. Socially inclusive community forest users' groups formed and supported by a gender and pro-poor approach and support for equity. Actual community forest management plans developed, documented and operational. Regular annual monitoring of forest management interventions in 4,000 ha of community managed forest and measurement of social and environmental impacts of these activities, and the change in biomass and forest carbon pools.	and increases C sequestration. 4,000 ha of unclassed degraded closed forest, with average density of 30 m^3/ha, currently under threat of conversion to agriculture, to be brought under sustainable community forest management, leading to restoration of 1m^3/ha/yr by year 4, and 80m^3/ha in the long term. Short-term benefits accruing project years 4-5: AE: 3,758 tC or 13,777 tCO_2e C storage: 870 tC or 3,190 tCO_2e Note: assumes project effects (AE) begin year 4 and end at year 6 (project termination). Long-term: years 6-20 (post-project): AE: 73,898 tC or 270,910 tCO_2e; C storage: 6,525 tC or 23,925 tCO_2e
Scenario 4: Community forest plantations		
Limited implementation of traditional taungya system.	Improved sustainability of of taungya forest systems	Sequestration of carbon through 2,000 ha of forest under sustainable taungya system. Short-term C storage benefits accruing project years 3-5: 3,306 tC or 12,122 tCO_2e Long-term: years 6-20 (post-project):37,193 tC or 136,372 tCO_2e

As detailed throughout the Project Document, the investment is designed to promote social sustainability. This includes making certain that more vulnerable sectors of society, such as women and the rural poor, benefit directly from project activities. The project will help rural communities work in a more cooperative manner to understand and identify environmental issues that might cause social instability. For instance, land degradation and climate change both increase economic risks and decrease social cohesion. By working to reduce land degradation and minimize the impacts of climate change, the project will be promoting social sustainability. This will also be improved by creating opportunities for stakeholder engagement and discussion, such as capacity building functions, farmer field schools, and activities related to land use planning.

National figures show some 70% of Myanmar's 58 million people as living in rural areas, with project site information showing even higher 80-90 % figures. The rural population is largely engaged in agriculture sectors, the majority of households being small-scale farmers, with the average size of land holding being some 5.8 acres (2.4 hectares). The dependence of a high proportion of the population on agriculturally based livelihoods makes them vulnerable to climate change and land degradation risks. Introduction of more sustainable and resilient systems of cultivation can reduce these risks alongside meeting carbon emission and reduced land degradation targets.

As noted, Myanmar is an ethnically diverse country with 135 distinct ethnic groups recognized by the government. Dependence on natural resources is particularly high among the poor and poorer communities, including Myanmar's many ethnic minorities and tribal groups. Tribal groups and ethnic minority groups comprise some of the most forest dependent communities who will ultimately benefit from a more community-based approach to agro-ecosystem management.

Declining forest cover and degraded land contribute to rural food security problems and present challenges for long-term community development and poverty alleviation. Ultimately, forest and land degradation decreases the ability of people to develop economically over the long term. Improved cropland management is designed to increase productivity, increasing food security and farm incomes. Small holder famers will benefit from the project through

additional investments in productive capital (skills, inputs, tools) necessary to improve cropland and forestland management and the natural capital that will be conserved and restored as a result, i.e. environmental services from healthy forests.

The project's work to strengthen community-based forestry will help to diversity rural livelihoods, and meeting local and national demands for fuel wood and timber products while at the same time maintaining healthy and productive forest ecosystems. Initial stakeholder consultations indicate that in some forest dependent communities a large portion of income is derived from illegal forest resource use. This suggests that there is room for more formal involvement of local people in forest product value realization, including timber. Local benefits will include financial benefits for FUGs from forest products and livelihoods associated with forest management and sustainable use, social capital formation among rural communities. A detailed socio-economic assessment and analysis will be conducted during the PPG, which will inform the project's design, including of the value of forest products realized currently by local groups and the potential for increasing this.

Rural women in Myanmar are key drivers of agriculture productivity and forest resource use and management, performing at least 80% of the agriculture and livestock work. Yet rural women often lack access to land, resource entitlements and access to inputs suck as credit, technology and extension services. Customary practices often restrict women's ability to own or opearate land, the critical asses for households that depend on agriculture.

During project preparation, efforts were made to ensure women's participation in workshops and meetings to ensure their interests and point of view was taken into consideration in the project's design. In particular, gender considerations were mainstreamed into Component 2 (Model Farmer Field Schools). In particular, and to address gender specific issues and challenges, each FFS has been designed to include a women cohort.

FFS women cohorts will benefit from a specific curriculum and approach targeting the needs of women. Project technical staff will generate and support the piloting of women specific FFS curriculum and learning. Each FFS' women cohort will provide a foundation for organizing knowledge building. The cohort approach will offer rural women opportunities to benefit from women-centered knowledge building and information exchange. FFS will enhance the agricultural skills of established FFS women cohorts. Gender specific FFS modules for women cohorts will be guided by opportunities for woman-to-woman learning both within and between pilot sites. The FFS curriculum designed for women cohorts will address gender specific issues related to nutrition and food security, including food use and stability. Innovative knowledge tools will assist rural women to share traditional knowledge, increase their awareness of conservation issues, and reduce their vulnerability to climate change. For each FFS, at least one demonstration site established specifically for women, ideally on a farmstead owned and/or operated by a woman headed household. By project close, the FFS women cohort-training module will be fully integrated as a section within the FFS curriculum.

During the last two years of the project, the curriculum will be rolled out and tested with the newly established FFS. Trial implementation will be closely monitored with both successes and challenges assessed by the curriculum development team and FFS participants. These results will be used to insure sustainability and broad-scale replication. The assessment will disaggregate results by gender to make certain impacts are unbiased.

B.3. Explain how cost-effectiveness is reflected in the project design:

During project design, several alternative scenarios were considered from the point of view of cost-effectiveness. These included extensive purchase of hardware and other tactical equipment, construction of major facilities for administration and agriculture and expensive international training programs. Stakeholders eventually abandoned these options after carefully considering conservation priorities relevant to a limited budget. In the end, the highly precise and, therefore, cost-effective investment rested on a number of principles, each integrated within the activities and expenditures of this proposed project. The relatively small investment is targeted to catalyze a substantial course change. The result is a relatively small amount of financing potentially will leverage the long-term conservation of an immense landscape and associated global benefits. Paramount was the desire to build the regulatory, management and financial capacity required for Myanmar to independently maintain effective conservation efforts. For instance, the project's limited investment will help to create capacity and decision-making pathways that enable local governments to use revenues to make pro-conservation investments rather than ill-advised and unsustainable short-term investments. This catalytic effect coupled with the objective of sustainability makes the GEF investment highly cost-

effective.

C. DESCRIBE THE BUDGETED M &E PLAN:

Table below provides a summary of the main M&E reports, responsible parties and timeframe.

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Inception Workshop	PMO, FAO Project Task Manager (PTM) supported by the FAO LTO, BH, and the GEF Coordination Unit	Within two months of project start up	USD 20 000
Project Inception Report	PMO, FAO PTM cleared by FAO LTO, LTU, and the GEF Coordination Unit	Immediately after workshop	Covered under PMO costs
Field based impact monitoring	PMO and relevant line agencies.	Continually	USD 20 000
Supervision visits and rating of progress in PPRs and PIRs	PMO, FAO LTO/LTU and GEF Coordination Unit	Annual or as required	The visits of the FAO LTU and the GEF Coordination Unit will be paid by GEF agency fee. The visits of the PMO will be paid from the project travel budget
Project Progress Reports	PMO, with inputs from project partners	Bi-annual	USD 5 000
Project Implementation Review report	FAO PTM and LTO supported by the LTU, PMO and project partners and cleared and submitted by the GEF Coordination Unit to the GEF Secretariat	Annual	Paid by GEF agency fee
Co-financing Reports	PMO	Annual	USD 2 000
Technical reports	PMO	As appropriate	
Mid-term Evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 23 and 24	USD 40 000 for external consultants. FAO staff time and travel or an additional consultant will be paid through the agency fee
Final evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 45 and 46	USD 30 000 for external consultants. FAO staff time and travel or an additional consultant will be paid through the agency fee
Terminal Report	PMO	Completed by project month 47	USD 2 000
Total Budget			USD 119 000

Provision for evaluations

An independent Mid-Term Evaluation (MTE) will be undertaken during project months 28-30. The MTE will review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. Findings and recommendations of this evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO will arrange for the MTE in consultation with project management.

The evaluation will, inter alia: i) review the effectiveness, efficiency and timeliness of project implementation; ii) analyze effectiveness of partnership arrangements; iii) identify issues requiring decisions and remedial actions; iv) propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and v) highlight technical achievements and lessons learned derived from project design, implementation and management.

An independent Final Evaluation (FE) will be completed by project month 58. The FE will identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This Evaluation will indicate future actions needed to sustain project results, expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to responsible management authorities to assure continuity of the processes initiated by the Project.

The FAO Project Task Manager will prepare the first draft of the Terms of Reference for the mid-term and the final evaluations and consult with and incorporate comments from key project partners, including the FAO budget holder, the FAO Lead Technical Unit and Officer, and the FAO GEF Coordination Unit. Subsequently the TORs will be sent to the FAO Office of Evaluation for finalization, in accordance with FAO evaluation procedures and taking into consideration evolving guidance from the GEF Evaluation Office.

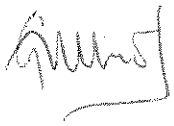
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):): (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Hla Maung Thein	Deputy Director General	ENVIRONMENTAL CONSERVATION DEPARTMENT MINISTRY OF ENVIRONMENTAL CONSERVATION AND FORESTRY	12/19/2014

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Gustavo Merino Director Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153 Rome, Italy TCI-Director@fao.org		February 27, 2015	Jeffrey Griffin Senior Coordinator, GEF Coordination Unit, Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153 Rome, Italy Jeffrey.Griffin@fao.org	+39 (0)6 570 55680	GEF-Coordination-Unit@fao.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Please see the Project Document, Appendix 1: Results Matrix.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention,Secretariat and STAP at PIF).

A- GEF Secretariat Comments	FAP Responses
#1. Funding allocation and co-financing amounts and composition to be revisited. Please confirm higher co-financing amount and identify co-funders.	Co-financing is now confirmed as per attached co-financing letters. Co-financing from ministry of Agriculture has been reduced, but co-financing from FAO has been increased.
#2. Please elaborate on M&E system and provide metrics to be used. Also at this stage please provide details on the long-term financing for SLM/SFM.	Agreed. Please see the Results Matrix in the PRODOC Appendix 1.
#3. Please explain the UNREDD program under development and how it will be included as baseline for the projects during the project preparation stage.	The Myanmar national REDD+ program is described in pages 36-37 of the PRODOC. The alignment of the REDD program with GEF focal areas is provided in section C (page 39). Mainstreaming/alignment of REDD with forestry master plan is included in the project under Output 1.2 (see page 43).
#4. Please express throughout, including the tracking tool, the carbon sequestered or emissions avoided in CO2 equivalents. Examples can be found on pg. 22 of the LULUCF publication at this website: http://www.thegef.org/gef/pubs/land-use-land-use-change-and-forestry-lulucf-activities	Agreed. Greenhouse gas emissions sequestered or avoided have been presented throughout the document in CO2 equivalents.
#5. Please clearly detail how they will account for impacts on methane and nitrous oxide emissions in agricultural component.	Please see Section 2.5: Global Environmental Benefits (pages 62-64) under "cropland" for details on GHG emission calculations.
#6. Please provide details including metrics for forest surveys and inventories and explain how data will be managed and stored.	Forest and landscape inventories are discussed in the description of component 3, under sub-component 3.A (see page 55-57) and the description of pilot interventions (see page 169-170) under scenarios 1 and 2.
B – STAP Comments	**FAO Reponses**
#1. When detailing further the project framework, STAP suggests clearly defining output and outcome indicators. This task entails defining what will be measured (e.g. percentage of targeted population that have adopted climate smart agriculture practices adopted by targeted population) and not what will be achieved (e.g. 40,000 hectares of rice under improved cropland - 2.1 in the project framework). A more useful indicator would be percentage of rice area.	Agreed. Please see Results Matrix in the PRODOC Appendix 1.
#2. It seems the target (pilot) areas are not defined in the proposal for component 2 and 3. STAP recommends doing so. Additionally, it would be useful to define further the agro-ecosystems and forest ecosystems for each pilot, or target, area. Currently, the proposal appears only to include a general description of the agricultural practices in Myanmar in section B.1. (baseline initiatives and barriers). More detailed information will strengthen further the rationale for component 2 and 3.	Agreed. Please see Appendix 11 for full details on the sites.
#3. The proposal includes good information on the potential drivers of forest degradation, and deforestation.	Agreed. Drivers and barriers are discussed in sections B and C of the PRODOC (pages 22-27) and in section 2.5

When the target (pilot) areas are defined further, STAP encourages, however, that FAO defines further the factors influencing forest degradation and deforestation at this level. Doing so, may further refine and make more effective the interventions based on these underlying factors. The project developers may wish to consider the following Myanmar case study on drivers of deforestation and forest degradation â€“ Mon, M. et al. "Factors affecting deforestation and forest degradation in selectively logged production forest: "A case study in Myanmar". Forest Ecology and Management 267 (2012).	Global Environmental Benefits (pages 62-64,under each scenario).
#4. Additionally, STAP recommends detailing further what tree species will be part of component 2 (scenario 3: land use change to perennials) and component 3 (scenario 4: community forest plantations). If the species are non-native species, STAP also suggests conducting a risk assessment of invasive species.	Please see description of Component 3 in the PRODOC (pages 54-60).
#5. The suggested sequestration rates seem surprisingly high for agroforestry systems, particularly if they are being harvested for fodder or other products. STAP recommends providing a clear description of the agroforestry systems to explain the estimate sequestration rate.	Please see description of how global environmental benefits were calculated in section 2.5 (pages 62-64).
#6. STAP wonders whether an element on food security/livelihoods could be strengthened in component 2 and 3 (for example - productivity of agro-ecosystems in component 1 and energy for food security in component 2) From the material presented, it is difficult to understand what could be farmers' rationales, for adopting the proposed soil fertility management practices and water conservation technologies in component 2, and, therefore, the likely extent of adoption. Also, it could be argued that communities will face challenges in adopting sustainable forest management plans, silvicultural techniques, and other activities that reduce pressure on the forests unless the interventions are properly designed to provide for food and energy (fuelwood). Therefore, STAP suggests considering an ecosystem approach in component 2 and 3, targeting food and energy production while strengthening adaptive capacities and reducing greenhouse gas emissions via sustainable forest management and sustainable land use. FAO may wish to refer to the resource for an integrated approach to food and energy production - Bogdanski A, Dubois O, Jaimieson C, Krell R: *Making Integrated Food -Energy Systems Work for People and Climate*. FAO, Rome; 2010.	Full details on the rationale for components 2 and 3 have been provided in the PRODOC under section 2 (pages 41-65)
#7. The table in section B.5 is useful. A minor suggestion by STAP is to add a column that specifies the role of the stakeholder in relation to the project component.	The updated list of stakeholders and their roles is presented in section 1.4 (pages 28-35) of the PRODOC.
#8. STAP acknowledges that non-timber forest	The capacities of local communities will be strengthened

products (NTFPs) have the potential to impact local livelihoods in ways that may contribute to the sustainability of protected areas (component 3). Sustainable harvesting and marketing of NTFPs does, indeed, have potential to bring local benefits to people while protecting the larger ecosystem. Nonetheless, it is important to consider the comprehensive context of NTFPs to fully assess their viability, potential contributions to livelihoods and protected areas, as well as the constraints associated with harvesting and marketing NTFPs . Thus, STAP recommends for the FAO to specify further whether the project will conduct a market chain analysis of NTFPs, and, if so, to detail this analysis in the full proposal. STAP also encourages the FAO to specify whether it will offer NTFPs training, as well as additional support (e.g. how to seek micro-finance) to assist project recipients get started with NTFP harvesting and commercialization activities. Additionally, STAP recommends defining explicitly the risks affiliated with NTFPs, and the mitigation responses (e.g. overharvesting of NTFPs; hence, affecting the status of local biodiversity and livelihoods). Climate change also may impact the long term viability of NTFP activities - this should be recognized explicitly in project development.	through training in forest inventory, preparation and implementation of forest management plans and business plans; silvicultural techniques for rehabilitation of degraded forests, fire management and development of income generating activities using Non-Timber Forest Products (NTFPs). These activities will be supplemented by interventions designed to reduce the pressure on forests, for example through the introduction of community-managed grazing restrictions and stall feeding systems for livestock, on-farm agroforestry and fuel-efficient stoves. In order to facilitate this activity, the project will work with the FD in the ongoing review of forest policy and the Community Forestry Instruction (CFI), in order to expand its application from plantations on barren land to areas which still include viable forest cover. The project will explore in further detail the potential use of NTFP during its first year of implementation.
C – Comment from the United States	**FAO Response**
The project appears to be of high merit from an environmental perspective. However, we question whether the project might be better directed at the Ministry of Forestry rather than the Ministry of Agriculture. In particular, the project does not appear to directly address the key targets that the GOM has identified in the Agriculture Ministry involving improved yields and livelihoods.	The Ministry of Agriculture is a key partner in the project and have been significantly involved in its preparation. At the same time, the MOA is providing significant co-financing for its implementation. The project interventions related to CSA and that MOA will execute are included under component 2 of the project (please see PRODOC, pages 46-49). The agricultural-related expected benefits from the project include 40,000 ha of rice under improved management, 20,000 ha of annuals under improved management and 4,000 hectares of upland and dry zone degraded annual cropland change to agroforestry with perennial crops.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[5]

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

PPG Grant Approved at PIF: **120,000**			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF/NPIF Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
Professional salaries	6,792	6,792	0
Consultants	70,375	71,934	0
Contracts	1,000	0	0
Travel	35,408	29,657	4,000
Training	6,425	924	6,693
Total	120,000	109,307	10,693

[5] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

Not applicable.

FAO/GLOBAL ENVIRONMENT FACILITY
PROJECT DOCUMENT

PROJECT TITLE:

Sustainable cropland and forest management in priority agro-ecosystems of Myanmar.

PROJECT SYMBOL: GCP/MYA/017/GFF

Recipient Country: MYANMAR

Resource Partner: Global Environment Facility (GEF)

FAO project ID: 618969 **GEF/LDCF/SCCF Project ID: 5123**

EXECUTING PARTNER(S): Ministry of Agriculture and Irrigation (MOAI) and Ministry of Environmental Conservation and Forestry (MOECAF)

Expected EOD (starting date): March 2015

Expected NTE (End date): February 2020 (60 months project duration)

Contribution to FAO's Strategic Framework	**a. Strategic objective/Organizational Result:** **SO-2** Make agriculture, forestry and fisheries more productive and sustainable. **b. Regional Result/Priority Area:** Enhancing equitable, productive and sustainable natural resource management and utilization; Coping with the impact of climate change on food and agriculture. **c. Country Programming Framework (2012-2016): Priority 1**: Increased agricultural production; **Priority 3**: Sustainable management of natural resources and the environment; **Priority 4**: Land use and land management; and **Priority 5**: Human resource development and capacity building.

GEF Focal Area/LDCF/SCCF: CC, LD, SFM

GEF/LDCF/SCCF Strategic Objectives: CCM-5: Promote conservation and enhancement of carbon stocks through sustainable management of land use land-use change and forestry. LD-3: Reduce pressures on natural resources from competing land uses in the wider landscape. SFM/REDD-1: Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services.

Environmental Impact Assessment Category (insert √): A B C√

GEF/LDCF/SCCF allocation	USD 6 183 031
Co-financing	USD 13 611 707
Total Budget:	**USD 19 794 738**

EXECUTIVE SUMMARY

The project objective is to build the capacity of farming and forestry stakeholders to mitigate climate change and improve land condition. This will be achieved by facilitating the adoption of climate smart agriculture and sustainable forest management policies and practices. The project is to be jointly coordinated and implemented by the Ministry of Environmental Conservation and Forestry (MOECAF), the Ministry of Agriculture and Irrigation (MoAI) and FAO Myanmar.

Rural Myanmar faces serious land degradation, forest degradation, and climate change threats. These threats emanate from existing forestry and agricultural practices. The origin of these threats is a persistent management capacity gap that extends vertically from national management authorities to local resource users. Myanmar does not have national support systems in place to safeguard and maintain the ecosystem services upon which rural livelihoods directly depend. Although agriculture and forestry are closely linked in rural Myanmar, there is limited capacity to generate ecosystem-based approaches. National capacity gaps are reflected in fragmented local level resource management regimes. There are very few tangible examples of better business practices designed to innovate climate smart agriculture and/or community-based forest management. Rural Myanmar is rarely managed to generate and maintain ecosystem services required to deliver SLM, SFM, and CSA benefits. On-the-ground resource users have few opportunities to gain exposure to best international principles and practices.

Four fundamental barriers restrict Myanmar from efficiently advancing beyond the existing "business as usual" scenario.

- Barrier 1: Insufficient legal regulatory and institutional framework for sustainable forest and cropland management
- Barrier 2: Minimal experience among key agriculture stakeholders in developing and implementing improved cropland management/climate smart agriculture practices
- Barrier 3: Minimal experience among key forest stakeholders in developing and implementing Forest Department and Community Forest-driven SFM practices
- Barrier 4: Insufficient capacity to replicate successful practices and achieve meaningful scale

The project will help dismantle these barriers by supporting Myanmar to set in place the tools required to generate CC, SLM and SFM benefits across the productive landscape. The project will introduce participatory and integrated SFM, SLM, and CSA approaches. This will be achieved through four interlinked components designed to strengthen relevant policy and regulatory frameworks; generate replicable models for climate smart agriculture; generate replicable models for community-based forest management; and, set in place a program for capture, dissemination, and national uptake of best practices. The GEF funded alternative will improve the sustainability of agriculture and forest use management through the demonstration and adoption of low-carbon technologies. The project will increase ecological integrity while enhancing the quality of life for rural communities.

This ecosystem management approach will include building the capacity required to generate necessary regulatory and planning tools. Stakeholders will be assisted to demonstrate integrated land use management planning. This ecosystem based planning approach will apply to both agriculture and forest lands. The project will support the development of a model program for climate smart agriculture. This CSA program will result in strengthened research and academic institutions, trained national extension officers, a farmer field school program to build farmer capacity, and best CSA practices being applied within three pilot zones. The project will set in place the tools required to establish community-based forest management. This management approach will promote forest integrity, maintain ecosystem services, and enhance community well-being. The project will set in place a system to monitor results, capture lessons, and upscale best practices. The project is predicated upon creating long-term capacity to carry innovations forward. This will focus upon integrating SLM, SFM, and CSA principles and practices within the training programs of numerous training institutions associated with both the Ministry of Environmental Conservation and Forestry and the Ministry of Agriculture and Irrigation. Training will ensure vertical integration of best practices from national level policy makers to extension officers and ultimately on-the-ground resource users. This will insure that capacities set in place during project implementation endure post-project, evolve and improve over time, and are up-scaled nationally.

Table of Contents

GLOSSARY OF ACRONYMS

AWD	Alternate Wetting Drying
AWP/B	Annual Work Plan and Budget
AMNR	Administrative Measures for NR
BD	Biodiversity
BH	Budget Holder
CARTC	Central Agriculture Research and Training Center
CC	Climate Change
CCVFV	Central Committee for the Management of Vacant, Fallow and Virgin Lands
CEO	Chief Executing Officer (GEF)
CFDTC	Central Forestry Development Training Center
CFI	Community Forestry Instruction
CLSLA	Committee on Land Scrutiny and Land Allocation
CSA	Climate-Smart Agriculture
CSO	Civil Society Organization
CV	Curriculum Vitae
DAP	Department of Agricultural Planning
DAR	Department of Agricultural Research
DICD	Department for Industrial Crop Development
DoA	Department of Agriculture
DZGD	Dry Zone Greening Department
EAT	Early Adopter Team
ECCDI	Ecosystem Conservation and Community Development Initiative
EDGAR	Emission Database for Global Atmospheric Research
ESFSP	Environmentally Sustainable Food Security Programme
EOP	End of Project
EP	Executing Partner
ESIA	Environmental and Social Impact Assessments
ETWG	Environmental Technical Working Group
FA	Focal Area
FAO	Food and Agriculture Organization of the United Nations
FD	Forest Department
FE	Final Evaluation
FEAT	Forest user group Early Adopter Teams
FMB	Farmland Management Board
FMP	Forest Master Plan
FRI	Forest Research Institute
FSP	Full-size Project
FPMIS	Field Project Management Information System
FREDA	Forest Resource Environment Development and Conservation Association
FSWG	Food Security Working Group
FUG	Forest User Groups
GAP	Good Agricultural Practice
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
GEFSEC	GEF Secretariat
GHG	Green House Gas
GIS	Geographic Information System
IA	Implementing Agency
IAP	Improved Agronomic Practice
IAS	International Accounting Standard
ICLM	Improved Crop Land Management
ID	Irrigation Department
IEG	Independent Expert Group
IFAD	International Fund for Agricultural Development

IPM	Integrated Pest Management
IPNM	Integrated Plant Nutrient Management
IPSAS	International Public Sector Accounting Standards
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
LAMP	Land Administration & Management Program
LCEC	Land Confiscation Enquiry Commission
LCG	Land Core Group
LDCF	Least Developed Countries Fund
LD	Land Degradation
LL	Land Law
LTO	Lead Technical Officer
LTU	Lead Technical Unit
LUAC	Land Use Advisory Committees
LUMP	Land Use Management Plan
LULUCF	Land Use, Land Use Change and Forestry
MADB	Myanmar Agricultural Development Bank
METT	Monitoring Evaluation Tracking Tools
MERN	Myanmar Environment Rehabilitation-Conservation Network
MOECAF	Ministry of Environmental Conservation and Forestry
MoAI	Ministry of Agriculture and Irrigation
MoC	Ministry of Commerce
MoEP	Ministry of Electric Power
MoFA	Ministry of Foreign Affairs
MLFRD	Ministry of Livestock, Fisheries and Rural Development
MoM	Ministry of Mining
MoNPED	Ministry of National Planning and Economic Development
MSN	Mangrove Service Network
MSS	Myanmar Selection System
MP	Management Plan
M&E	Monitoring and Evaluation
MSS	Myanmar Selection System
MTE	Mid-Term Evaluation / Myanmar Timber Enterprise
NAPA	National Action Plan of Action / National Action Plan of Agriculture
NAPFN	National Action Plan on Food and Nutrition
NBSAP	National Biodiversity Conservation Strategy and Action Plan
NCEA	National Commission for Environmental Affairs
NECC	National Environmental Conservation Committee
NGO	Nongovernmental organization
NLUP	National Land Use Policy
PMO	National Project Implementation Unit
NPD	National Project Director
NSC	National Stakeholder Committee
NSDS	National Sustainable Development Strategy
NTFP	Non-Timber Forest Products NTFP
PFE	Permanent Forest Estate
PIF	Project Identification Form (GEF)
PIM	Project Implementation Manual
PIR	Project Implementation Review
PMO	Project Management Office
PPF	Permanent Protected Forest ? Not sure
PPG	Project Preparation Grant (GEF)
PPR	Project Progress Report
PSC	Project Steering Committee
PTM	Project Task Manager
PY	Project Year
PRODOC	FAO Project Document

RBM	results-based-management
RECOFTC	The Center for People and Forests
REDD	Reduction Emission from Deforestation and Forest Degradation (UN)
RF	Reserved Forest
SC	Stakeholder Committees
SCLU	Scrutinizing Committee on Land Use
SFM	Sustainable Forest Management
SLM	Sustainable Land Management
SLRD	Settlement and Land Record Department
SO	Strategic Objectives
SSNM	Site-Specific Nutrient Management
STAP	Scientific and Technical Advisory Panel
TCI	Investment Centre Division (FAO)
TFO	Township Fisheries Officer
TL	Tender Lot
TOR	Terms of Reference
TWG	Technical Working Groups
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNCT	United Nations Country Team
UN + REDD	Reducing Emissions from Deforestation and Forest Degradation
UDP	Urea Deep Placement
UOF	University of Forestry
USD	United States Dollar
VFRDC	Vegetable and Fruit Research and Development Center
VFS	Village Fisheries Society
VFV	Vacant, Fallow, Virgin (lands)
YAU	Yezin Agricultural University
WB	World Bank
WFP	World Food Program
WRUD	Water Resources Utilization Department
WWF	World Wildlife Fund

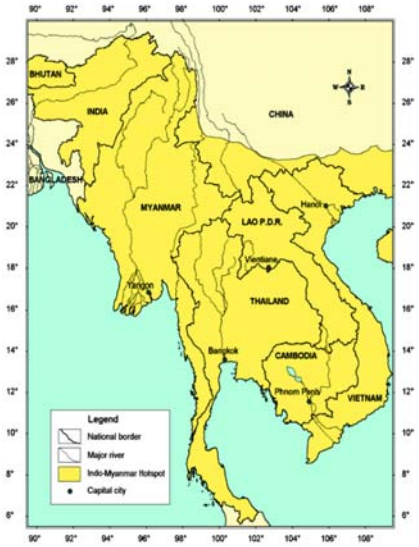
SECTION 1 – RELEVANCE

1.1 General Context

A. General development context related to the project

National Context

The Republic of the Union of Myanmar is situated in Southeast Asia. The country covers an area of 676,577 square kilometers. Myanmar shares borders with China, India, Bangladesh, Lao PDR and Thailand. The total human population is approximately 60 million. Myanmar is culturally diverse. Ethnic groups speak over 100 languages and dialects. This is a highly rural country with more than 70% of population living in rural areas. Forestry and agriculture are the basic platform for rural dwellers' livelihoods and food security.



The 2008 Constitution establishes a republic. All land in Myanmar is government owned. The country is administratively divided into seven states and seven regions. States are generally considered as home to ethnic minorities. Each state or region is further divided into districts, then townships, cities, wards, village tracts, and villages.

The nation has four main ecological zones: delta, coastal, central dry, and mountainous. The delta area is Myanmar's rice basket and has the highest human population density. The central dry zone has low rainfall, sandy soils, and the second highest population density. The coastal region is geographically small, but has the highest annual rainfall. Coastal rains can exceed 4,000 mm per annum. Crops such as coconut, palm oil and rubber as well as rice are grown along the coast. Mountains ring Myanmar. The nation's highest peak is 5,800 meters. Approximately 50% of the nation is classified as mountainous. Dense forest and low populations define the mountain areas. Myanmar has four major rivers; Ayeyarwady, Sittaung, Thanlwin and Chindwin.

Myanmar's GDP is approximately USD 50 billion. Economic growth averages 5%. Myanmar ranks 149 out of 168 countries on the Human Development Index. The official literacy rate is 90%. Poverty levels are at an estimated 26% of the population. The per capita income is approximately US$ 702. Myanmar is a net food exporter. However, nearly 10% of the population is considered food insecure. Improvements in the nutritional status of children have been slow. Approximately 23% of children under the age of five are moderately underweight and 5.6% are severely underweight. Between 2005 and 2010, the incidence of poverty fell from 32% to 26%.

Approximately 25% is classified as agricultural land. Nearly 21% or 13.98 million hectares is cultivated. Myanmar's total cultivation may be roughly divided by: 50% rice production; 25% oilseeds, pulses and beans; and, 25% orchards for oil-palm, rubber, etc. Myanmar was once the world's largest rice producer. Rice remains the country's primary crop. The country produces 33,204,500 tons of rice annually. Rice accounts for over 50% of all cultivated land. Rice is planted on over 8,000,000 hectares each year, mostly in the delta region. Rice is also the highest crop emitter of GHG in Myanmar, with 34,400,000 tCO2e in 2008.

Ethnic minorities in the Karen, Shan, Kachin and Chin States practice shifting or "swidden" cultivation. Shifting cultivation involves the periodic burning of forested areas to create clearings in which crops may be cultivated. Temporary fields are cultivated for several years until productivity becomes too low. The land is then abandoned and natural reforestation takes place. Traditionally land was left fallow for fifteen to twenty years before re-cultivation. Increased population pressure has led to a reduction in fallow periods, often to as low as eight years. It is estimated that there are approximately 2 million shifting agriculturalists within the forested mountains of eastern and northern Myanmar. Nationally there are an estimated 6 million hectares of land within the shifting cultivation system with approximately 300,000 hectares cultivated annually.

Although only 24% of GDP comes from agriculture, this sector employs a vast majority of the nation's labor force. Farms are rarely mechanized. Farms of less than 4 hectares make up roughly 60% of all farmed lands. Most experts agree that industrial scale agriculture is expanding and gradually replacing traditional agriculture. From 1987 to 2011, cropping intensity increased from 141% in 1995 to 172% in 2011. Irrigation coverage increased from 12% of the net sown area to 17%. Changing regulatory frameworks and land sales are creating opportunities for greater privatization and consolidation. Smallholder farms are rapidly being consolidated. Large-scale, mechanized commercial farming is quickly subsuming traditional farmsteads. This will certainly have social and ecological impacts.

Myanmar qualifies as one of the most forested countries in Asia. Forests cover more than 50% of territory. Prevailing forest types are mixed deciduous forest, including teak. Myanmar's rural population depends heavily upon forests for food, fuel, fodder and livelihoods. The natural forests have significant environmental value and are a regionally important source of hard woods. The Permanent Forest Estate (PFE) is composed of: Reserved Forests and Protected Public Forests. The PFE covers 197,899 km^2 of the country. The PFE is under the direct management of MOECAF. Other lands with forests are un-classified. These "unclassified" forests cover 16,054,300 hectares. Unclassified forests are primarily under the authority of Settlement Land Record Department (SLRD) within the MoAI. There are 36 protected areas in Myanmar. A further seven are proposed. These protected areas cover 37,894.42 km^2 and 7212.37 km^2 respectively.

Teak from both plantations and natural forest generate substantial revenues for the nation. The total amount of teak harvested and revenue generated is substantial but not a matter of public record. Myanmar has a long history of teak plantation. The total amount of teak plantation is increasing. Approximately 6,200 hectares of teak were under plantation in 1980. By 1990, 14,700 hectares were under plantation. Currently, there are approximately 12,000 ha of teak new teak plantations brought under production each year.

Although diminishing rapidly, the coastal zone of Myanmar remains well endowed with mangrove forests. Mangrove forests cover almost 2,000 kilometers of coastline. Nearly 284,700 ha of mangrove forests are distributed along the Rakhine State, Tanintharyi Region and Ayeyarwady Region. These mangroves provide substantial ecosystem services for coastal zone communities. Mangroves are a critical to fisheries, a source of fuel-wood, and important for building materials. Mangroves are a highly effective tool for addressing climate change mitigation, adaptation, and alleviating natural disasters. For instance, communities proximate to healthy mangrove forests were much less vulnerable to the negative impacts of during the Nargis cyclone of 2008.

All forests in Myanmar are classified as "closed forest", "open forest" and "other wooded land." Closed forest is mature forest with a closed canopy and a full standing stock. Open forest is forest whose standing stock has been reduced through a combination of subsistence and commercial agriculture expansion and commercial timber cutting. Open forest is more likely to be under threat from further encroachment because it is already partially degraded and more likely to border on agricultural areas. Both of these lands are under the management of the Forest Department (FD). Other wooded land is land with forest cover that is not classified legally as forest land and can include the full range of forest condition from closed to open to severely degraded forest.

Table: Forest cover in Myanmar

Forest Category	Scrubland	Mangrove	Temperate deciduous (Indaing forest)	Tropical dry	Tropical evergreen	Highland temperate evergreen	Mixed deciduous
National Territory (%)	1%	1%	2%	5%	8%	13%	18%
Total Forest area (%)	2.21%	1.47%	4.16%	9.8%	17.22	26.88%	38.26%
Hectares (Million)	700.00	467.33	1,321.87	3,114.71	5,470.60	8,541.19	1,2157.30

Summary of Pilot Site Context

Project efforts will take place on both the national and pilot site level. The project will work within three pilot areas. Locations were chosen based upon several criteria. Paramount was the ability of the location to support evidence-based demonstrations of improved production and conservation approaches relative to the project objective. The three locations provide excellent examples for the three primary ecological settings: upland, coastal, and dry-land. Each site represents an opportunity to demonstrate techniques suitable for national replication and upscaling.

- Upland Pilot Site: Mindat and Kanteplet Townships, Chin State

Mindat and Kanteplet Townships are located in the mountainous southwest of Myanmar. The highest altitude is 1,463 meters. There are several unique ethnic groups that inhabit these townships and almost the entire population practices shifting agriculture. This makes the location an excellent site to demonstrate integrated management approaches predicated upon improved shifting cultivation practices.

The total population is estimated to be 64,000. More than 50,000 of these residents live in rural areas. The area of the two townships is approximately 570,000 hectares. The upper mountain reaches are defined by pine cloud forests. Lower elevation forests include species such as: Teak (*Tectona grandis*), Pyinkado (*Xylia kerri or Xylia xylocapa*) and Padauk (*Pterocarpus macrocarpus*). The total forested hectares in Mindat and Kanteplet is 488,600. Of this 55,600 hectares are within the Reserved Forests, 51,200 hectares in Protected Public Forest, and 388,000 hectares are un-classified.

Approximately 10,000 hectares are annually under shifting cultivation. This represents an annual use of only 1.5% and 3% of total available land. Farmer fields tend to be less than one hectare. Remaining lands are primarily under forest cover. Shifting cultivation can be a sustainable within this system if forest cover is maintained, water resources protected, and adequate time is allowed between cultivations and/or enrichment extends productivity. However, there are currently few conservation measures in place and land degradation is advancing.

The region is widely recognized for its globally significant species. This includes the giant hornbill and several species of orchids. Due to the island geography, the level of endemism is extremely high. New species are discovered annually. The pilot sites will be located in close proximity to the NatmaTaung National Park, which will allow a synergy with their services of forest management. The total protected area covers approximately 72,000 hectares. This includes 55,000 hectares within Mindat and 12,000 hectares within Kanteplet.

- Coastal Zone Pilot Site: Laputta Township, Ayeyarwady Region

Laputta Township is located along Myanmar's coastline in the center of the great Ayeyarwady Delta. The location presents an opportunity to demonstrate integrated farming, fisheries and forestry practices within a coastal zone, including organic and valued added production.

This low-lying area is quite moist. The region is highly important for national rice production and fisheries. The region also has substantial mangrove forests. The total population is approximately 500,000 with 469,000 living in rural areas. The area was affected by the Nargis cyclone of 2008. The total land area is 300,000 hectares. Rice production covers 148,300 hectares. Most production is un-mechanized. Currently, there is almost no use of pesticides, herbicides, or chemical fertilizer. The total forest cover is 73,000 hectares and primarily mangroves. Over 100,000 hectares are designated as Reserved Forests.

- Dry Zone Pilot Site: Kyaukpadaung and Nyaung Oo Townships, Mandalay Region

Myanmar's dry zone receives less than 120 cm of rainfall annually. The dry zone covers some 13% of country and portions of three regions (Lower Sagaing, Mandalay, and Magway). The dry zone is home to 27% of the country's population. The topography is undulating and often covered with forests of acacia and other drought tolerant species. Agriculture is the main economic engine. Pulse crops make up 70% of dry zone's crops. The remainder is paddy, sesame, groundnut, etc. Grazing is very important in the dry zone. Residents rely heavily on the natural forest for fuel wood and livestock production. Most streams are ephemeral and water shortages are typical. Nearly 20% of dry zone households face food insecurity.

The Nyaung Oo District and Myingyan Districts of the Mandalay Region sit in the middle of Myanmar's dry zone. Kyaukpadaung and Nyaung-U Townships will be used to demonstrate improved sustainable crop and forest land management in dry zone conditions. These locations are well suited to evince dry zone integrated management approaches that generate CC, SLM and SFM benefits.

Although accurate figures do not exist, the total population is estimated to be approximately 500,000. Nearly all of these households are "rural" and engaged in agriculture. Nearly 25% of the rural population is considered land-less. For those who own land, the average land holding size of less than 2 hectares. Productivity is very low. The amount of land generally considered necessary to sustain a dry zone household is 3 - 4 hectares. The total area of the two townships is approximately 400,000 hectares. Roughly 200,000 hectares are used for agriculture and 120,000 hectares are forests. The remaining 80,000 hectares are considered "wasteland" used for grazing or other activities. Land degradation is prevalent due to grazing, fuel wood, agricultural and forest practices.

B. Global Environmental Benefits (GEB) status, threats and causes (for GEF Projects)/Climate Change (CC) vulnerability (for LDCF/SCCF projects) and problems the project will address

Summary of the Problem to be Addressed

Rural Myanmar faces serious land degradation, forest degradation, and climate change threats. These threats emanate from existing forestry and agricultural practices. The origin of these threats is a persistent management capacity gap that extends vertically from national management authorities to local resource users.

Myanmar does not have national support systems in place to safeguard and maintain the ecosystem services upon which rural livelihoods directly depend. Current national management regimes are generally defined by compartmentalized approaches. The existing enabling environment generally stresses production and affords limited attention to ecosystem-based approaches. Resource management on forest, agricultural, and unclassified lands is usually segregated. Integrated management required to maintain ecosystem functionality and address degradation issues across productive sector boundaries

does not exist. Although dedicated personnel staff all agencies, their current level of exposure and knowledge to best international practices related to Sustainable Land Management (SLM), Sustainable Forest Management (SFM), and/or Climate Smart Agriculture (CSA) is limited. The country has a fairly broad base of extension services and agents working in most rural locations. However, representatives of national agencies responsible for supporting local level improvements do not have the tools required to catalyze improvements.

National capacity gaps are reflected in fragmented local level resource management regimes. Local level planning mechanisms tend to also be compartmentalized. Rural Myanmar is rarely managed to generate and maintain ecosystem services required to deliver SLM, SFM, and CSA benefits. On-the-ground resource users have few opportunities to gain exposure to best international principles and practices. There are very few tangible examples of better business practices designed to innovate climate smart agriculture and/or community-based forest management. Limited attention is given to monitoring and maintaining ecosystem services. There are no feed-back loops to make certain that successful on-the-ground practices inform national level learning and advancement. There is no formal system to demonstrate, capture, and upscale best practices.

Existing and emerging land degradation, forest degradation, and climate change threats will persist and multiply unless these knowledge and management capacities are built in the near term. Challenges will become more acute as the country continues to transform and more fully engage commercially with South East Asia and the rest of the world.

Addressing these challenges and reversing negative trends requires the establishment of management and decision-making regimes capable of generating and implementing best practices related to SLM, SFM, and CC. National systems must be set in place to build the capacity of national agencies in terms of both exposure to and implementation of improved resource management practices. Local level interventions must be piloted that prove better ways of production predicated upon conservation of ecosystem services. Pathways must be established to capture best practices and facilitate national level replication.

Status and Threats

More than 20% of Myanmar's forests are considered degraded. Between 1955 and 1997 the closed forest area was reduced by nearly 13 million hectares, an average annual loss of more than 300,000 hectares. Forests covered nearly 65% of the nation in 1990. Over 5 million hectares of forest were cleared during the 1990s. The extent of annual forest loss may now be higher, possibly 400,000 hectares annually. In 2010 Myanmar's forests covered 31,773,000 hectares, 22% less area than 20 years previously. By 2011, forests covered approximately 48% of the nation. This is an estimated loss of nearly 20% or over seven million hectares.

As actual forest cover has decreased, the ecological value of existing forest cover has diminished. Forest cover is shifting from ecologically intact closed forest to more degraded open forest. Myanmar's dense forest covered more than 45% country in 1990. This figured dropped to 20% of the country by 2010. There was three times more "closed" forest than "open" forest in 1990. There was 50% more open forest than closed forest by 2010.

Table: Forest land class changes between 1990 and 2010

Forest land classes	Hectares (millions)			
	1990	2000	2005	2010
Closed forest	30.8	23.5	18.4	13.4
Open forest	8.3	11.3	14.8	18.3
Other Woodland	19.4	19.7	19.9	20.1
Total Area of Country	67.6	67.6	67.6	67.6

This forest loss is not limited to "upland teak forests". A significant area of Myanmar's mangrove forests has also been lost. In 1980, Myanmar had approximately 704,000 hectares of mangroves. By

2002, this number reduced to 284,000 hectares. Loss of mangroves has serious implications for fish hatcheries, marine farming management and for the physical stability of estuary riverbanks. As was witnessed during the deadly Nargis Cyclone of 2008, mangroves serve a critical ecosystem service of restraining the impact of intense weather events.

Fuel wood consumption is high in Myanmar. Fuel wood consumption was estimated at 35 million m^3 per year in 2002. Nearly 75% of all fuel wood use is at the rural household level. Special circumstances such as salt harvest and shrimp farming contribute to the loss of coastal mangrove forests. However, these communities are also highly dependent upon mangroves for fuel-wood. Access to these mangroves is becoming increasingly competitive, with rural communities also travelling far from their home villages to harvest depleting stocks due to open access regimes.

Excessive timber logging is an important driver of forest degradation in tropical Asia. In Myanmar, logging does not clear cut forests but rather primarily extracts high-value teak trees. Done inappropriately, this can degrade the forest. Most commercial logging does not clear cut forests. Rather, timber harvests target and extract high-value teak trees. Done inappropriately, this can degrade the forest.

Agricultural expansion is the primary driver of deforestation and land degradation in South Asia, accounting for two thirds of overall deforestation. According to recent REDD reports, subsistence and commercial agriculture account for nearly 70% of annual deforestation in Myanmar. At the same time, the Emission Database for Global Atmospheric Research (EDGAR), rice is the largest crop emitter of GHG in Myanmar, with 34,400,000 tCO^2e in 2008.

Officially subsistence agriculture is a bigger driver of deforestation than commercial agriculture in Myanmar. Subsistence agriculturalists often colonize previously forested land. Commercial agriculture often stimulates smallholder expansion due to appropriation of fallow land and cultivatable wasteland areas. Transformation from conventional to mechanized agriculture is being introduced to increase crop production and reduce losses from land preparation to harvesting. The "Wasteland Instructions" state that a company may apply for 5,000 hectares and a cumulative total of 50,000 hectares of under used farm ground. By 2010, a total of 1.7 million hectares were allocated to approximately 200 companies. This allocation is now accelerating with nearly one million hectares allocated in 2013. The government seeks to expand cultivation to promote agricultural growth. This includes reducing the amount of fallow land. Over the past ten years, fallow land has diminished while crop and irrigated area have increased by more than 20%.

Table: Land Allocation to Private Companies in 2013

State/ Region	Number of Companies	Granted area (hectares)
Kachin State	113	371,715
Kayin State	1	409
Rakhine State	10	45,487
Shan State	65	85,427
Sagaing Region	29	162,584
Tanintharyi Region	41	126,464
Bago Region	15	6,227
Magway Region	19	35,835
Mandalay Region	10	7,190
Yangon Region	9	5,460
Nay Pyi Taw Union Territory	6	4,126
Ayeyarwady Region	59	89,019
Total	377	939,943

Source: Myanmar Agriculture in Brief 2013

Land degradation, particularly soil erosion, is an increasing problem in Myanmar. Vulnerable farming areas as a percentage of the country's total cultivated area was estimated at 33% in 2008[1]. Human practices of excessive tree cutting, mono-cropping practices that leave the soil unprotected and shifting cultivation combine with natural processes in these vulnerable areas accelerate degradation. All soil types show low fertility, low soil moisture holding capacity and declining organic matter content[2]. Hard pan formation is common in the upland soils. In some places the soil has been almost completely removed by water and wind erosion. Soils are vulnerable due to their sandy and loose texture and their location on slopes of 5-15%. The susceptibility of the soil to erosion is compounded by the high intensity of rainfall and surface run-off, with sheet and gully erosion visible on wasteland areas (ibid). Soil erosion and land degradation are the major components responsible for declining production levels. Salinization is found in coastal areas, delta region and arid regions, while alkalinisation is confined to certain areas of the arid region. Salinization in the central dry zone is caused by use of saline irrigation water and evapo-transpiration of saline ground water, where low rainfall is insufficient to wash-out accumulated salts. Population pressure has led to increased intensification of cultivation, with removal of trees on farm lands (also driven by requirement for construction and fuel wood).

The Climate Change and Environmental Risk Atlas 2014 lists Myanmar as 16th in their global assessment of countries most at risk from climate change. Between 1990 and 2010, total above and below ground forest biomass decreased by 20%. Carbon decreased by approximately the same percentage, from 2,040 million metric tonnes C in 1990 to 1,654 metric tonnes C in 2010. The Department of Meteorology estimates that annual rainfall at the national level has increased by about 29mm per decade since 1951. This increase is concentrated in the upland regions with more short, heavy rainfalls and storm events. The central dry zone has experienced considerably less rainfall over this period. For instance, annual rainfall in Bago Division was reduced by 81 mm per decade. Since 1975, the monsoon season, which is a crucial factor in agricultural productivity, has shortened from an average of 144 days to about 120 days.

Anaerobic decomposition of organic material in flooded rice fields produces methane, which escapes to the atmosphere primarily by diffusive transport through the rice plants during the growing season. In 1996 it was estimated that rice cultivation accounted for 5-20 % of total anthropogenic sources of carbon emission, a significant source, at a rate of some 60 million tonnes per year (range from 20-100)[3]. By 2020 an estimated 3 billion increase in population will demand production of a further 350 million tonnes of rice, increasing this figure significantly. Midseason drainage (a common practice in China and Japan), intermittent irrigation (common in northwest India) and rice grown under rainfed conditions greatly reduce methane emissions. Organic inputs stimulate methane emissions under flooded conditions, therefore organic inputs should be applied to aerobic soils[4].

Significant energy and raw materials are used in the production and distribution of chemical fertilizers and pesticides, which impact on carbon emissions from industry in the countries they are produced. Increased utilization of these inputs will inevitably contribute to increase carbon emissions. As noted, there is a strong trend in Myanmar towards greater production. Much of this will be predicated upon the increased use of chemical pesticides and fertilizers.

[1] www.gma-eoc.org/uploads/resources139/attachment/Enviro-Analysis-Myanmar-ADB-Country-Partnership-strategy.pdf. (Accessed 6/5/14)
[2] FAO Food Security Project.
[3] www.ipcc-nggip.iges.or.jp/public/guidelin (accessed 6/5/14)
[4] IFPRI (2009) Reducing methane emissions from irrigated rice. www.ifpri.org/publication (accessed 6/5/14).

C. Institutional and policy framework

The institutional and policy framework governing natural resource conservation is rather complex in Myanmar. However, the two primary institutions are the Ministry of Environment Conservation and Forestry (MOECAF) and the Ministry of Agriculture and Irrigation (MoAI). These agencies have thousands of staff located across the country and a plethora of sub-agencies responsible for issues ranging from economic use of resources, extension services, law and policy, and professional and academic training. The support of both MOECAF and MoAI is instrumental and critical to the success of this project.

Please see **Appendices 7-9** for a complete description of the institutional and policy framework within which the project will operate.

Summary of Laws and Policies Governing Forestry and Agriculture

The Government owns all lands. Only usufruct privileges may be granted. Farmers have tilling rights without rights of transfer or mortgage. Land is inheritable so long as tillage continues. Customary law has historically regulated land tenure in much of Myanmar. Customary land tenure is village based. It is established through a combination of collective action and individual use. The village elders are generally responsible for allocating land and mediating disputes. This is partly by default, since most upland rotating fallow fields (taungya) are not formally or fully registered with the Settlement and Land Records Department (SLRD) under the Ministry of Agriculture and Irrigation (MoAI).

The Foreign Investment Law (2012) allows foreign investors to lease land from the government or private use right holders for up to 50 years. Longer lease periods may be granted for investments in areas of the country designated as less developed. This would include the majority of unclassified forests.

The Vacant, Fallow, and Virgin Law (2012) creates a mechanism for long-term lease (up to 30 years) of State owned VFV land for agriculture, mining and other legal activities. VFV land that is leased may not be mortgaged, sold, sub-leased, divided or otherwise transferred without approval of the Government. Land of up to 5,000 acres at one time and a cumulative maximum of 50,000 acres may be allocated. The law also provides a mechanism for rural farmers to apply for the use of VFV land not already utilised. A maximum area of 50 acres may be granted, depending on the ability of the farming family to develop and manage the land.

The Farmland Law (2012) requires government to issue tenancy rights certificate to all bona fide farmers. Tenants may lease, mortgage, exchange, transfer land in their possession for agricultural purposes per prescribed rules. The law brings all the dispersed agricultural land administration related government services into a single body known as the Farmland Management Board (FMB). The Farmland Law appears to link with the VFVL permitting VFV lands to be reclassified as farmland when determined by FAB that use of land is stable. Tenure security provided under the law is weak due to the fact that the Government retains ultimate ownership of all land and can rescind land use rights if the conditions of use are not met.

Farmers in some areas use VFV land without formal Government recognition. The Farmland Law allows for existing use of VFV land by farmers to be formally recognized by the Government. That land may then be reclassified as farmland and LUCs issued to occupying farmers.

The Forest Law (1992) regulates the management of the Permanent Forest Estate. Various use rights may be granted under the Forest Law. For example, there is a provision for the establishment of Village Firewood Plantations or Local Supply Plantation. The Community Forestry Instruction (1995) issued by the Forest Department is designed to engage local populations in forest management. The Community Forestry Instruction allows community groups to obtain certified use rights to forest lands.

Under the Community Forestry Instruction, community members form forest user groups and develop a management plan. Upon approval of the plan by the Forest Department, the forest user groups receive 30-year use rights documented in a Community Forestry Certificate. The Protection of Wildlife and Conservation of Natural Areas Law (1994) provides basic protections for key habitats.

Shifting agricultural lands are governed by particularly complex customary rules. The majority of forested areas subject to shifting agriculture practices lie outside of Forest Department management. The Settlement and Land Records Department certifies and generates tax assessments of agricultural lands. Shifting agriculture land is assessed and taxed annually on the basis of village records and SLRD surveys. However, this land is not formally registered, certified or mapped. SLRD field notebooks indicate village boundaries through sketch maps and landmarks. These field notebooks are the only formal documentation of taungya land kept by the SLRD. Due to these regulatory gaps, upland farmers are at risk of losing traditional ownership rights over fallow land. Traditional land ownership patterns are not codified or recognized within the legal framework. Shifting agriculture lands do not benefit from comprehensive ecosystem-based planning mechanisms. If shifting agricultural land is left fallow and the forest allowed to regenerate, this land may be categorized as "cultivable wasteland". Fallow land is therefore at risk of being allocated to a commercial enterprise. This discourages sustainable practices.

Forest Management

The Ministry of Environmental Conservation and Forestry (MOECAF) is responsible for a host of natural resource management issues. The MOECAF oversees development and implementation of Environmental and Social Impact Assessments (ESIA). The MOECAF is responsible for managing Myanmar's system of protected areas. MOECAF manages most forestlands, including the Permanent Forest Estate (PFE) which is comprised of Reserved Forests and Protected Public Forests. The MOECAF develops forest policies and laws. There are several departments within MOECAF, including: Planning and Statistics, Forest, Dry Zone Greening, Surveys, Myanmar Timber Enterprise and Environmental Conservation.

Four MOECAF agencies have mandates covering forest management. The Myanmar Timber Enterprise oversees timber harvest, processing and marketing which happens primarily within Reserved Forests. The Policy and Statistics Department is responsible for drafting general policy, planning and international cooperation strategies including those related to forestry. In the central dry zone, the Dry Zone Greening Department (GZGD) oversees reforestation of degraded forests, conservation of remaining natural forests, and ecological restoration. At township level, the DZGD plans and implements operations to support establishment and protection of plantations of dry zone species, promotion and distribution of improved cook stoves and fuel briquettes made from manure and agricultural residues. Under the work area of water resources development, DZGD township officers are responsible for the construction of ponds, wells and pumping systems to enhance water supply for drinking and irrigation. The DZGD has offices in the three dry zone divisions of Magway, Mandalay and Sagaing inclusive of the townships.

The Myanmar Forest Department is the main forestry agency. The Forest Department was established in 1856. Myanmar is known for scientific management of natural forests implemented the Forest Department. This is often referred to as the Myanmar Selection System. The MSS seeks to maintain high yields of quality timber and enhance the natural regeneration of commercially valuable trees. The Forest Department oversees forest conservation, sustainable management, biodiversity conservation, watershed conservation, afforestation, reforestation and research & development. There are seven divisions within the FD: Planning and Statistics, (ii) Natural Forest and Plantation, (iii) Wildlife Conservation, (iv) Watershed, (v) Budget, (vi) Training and Research, and (vii) Inspection.

Several training institutions under the auspices of the Forest Department support capacity building efforts. The School of Forestry was established more than 100 years ago. This school is designed for advanced training of forest management professionals. The Central Forestry Development Training

Center (CFDTC) supports training programs for forestry staff and the public. The Forest Research Institute (FRI) provides research support for the forest sector, including identification of improved methods for reforestation efforts. The FRI also conducts field research and monitoring on forest stands nationally.

The Forest Department Extension Division is limited to the national office. This national office develops and sends out awareness and training information to Forest Department offices located in each state/region and township.

All natural forests are state-owned. The MOECAF manages natural and plantation forests within the Permanent Forest Estate. This is approximately 17.4 million hectares. The PFE includes both natural and plantation forests. It also includes both "closed" and "open" forests. The Government's policy is to increase the PFE to over 30 million hectares in an effort to expand Forest Department oversight. There are an additional 18 million hectares of unclassified natural forest outside of the Permanent Forest Estate. These unclassified forests may be managed by one of several different Ministries and/or local governments.

In 2013, Forest Department officials were to survey all forests within the Permanent Forest Estate and identify locations under continuous settlement and/or agricultural use. This was to assist with the process of divesting agricultural and village land from the national Permanent Forest Estate. Locations with settlements consisting of more than 50 households are being de-gazetted from the PFE and reclassified as village areas and their agricultural lands. Since late 2013, over 1,500 villages and 328,000 hectares have been removed from the PFE. The government also has a policy to include more unclassified forest within the PFE. According to the Forest Law 1992 chapter III Constitution of Reserved Forest and Declaration of Protected Public Forest, unclassified forest may be transferred into the PFE.

Forests outside of the PFE are considered unclassified. There are 16,054,300 hectares of unclassified forest in Myanmar. Although ecologically important, unclassified forests often do not benefit from proper forest management approaches designed to deliver SLM, SFM, and CC benefits. As unclassified lands, these forests may also be considered vacant land for potential settlement. Much of the land designated as part of the Permanent Forest Estate is not actually forest. Many of the lands designated as part of the PFE are a highly populated with productive farmland and villages.

Climate Change Policy

MOECAF coordinates and implements Climate Change policies. The MOECAF chairs the National Environmental Conservation Committee (NECC). The NECC manages and coordinates all climate change related activities in Myanmar, including the development of climate change related policies and strategies and corresponding programmes of action such as National Action Plan for Adaptation NAPA. The MOECAF develops National Communications to the UNFCCC. The Ministry contributes to UNFCC negotiations through the Ministry of Foreign Affairs.

Agriculture Management

The Ministry of Agriculture and Irrigation (MoAI) is composed of numerous institutions. The Ministry of Agriculture and Irrigation (MoAI) is responsible for the management of agricultural land and develops the corresponding policy and legal frameworks. The strategic objectives of the Ministry of Agriculture and Irrigation are to fulfil local food consumption needs; increase export of surplus production; increase foreign exchange earnings; and, assist rural improvements through agricultural development.

The Department for Industrial Crop Development (DICD) is responsible for the development of industrial crops such as sugar cane, rubber, oil palm, cotton, coffee, jute and kenaf. The Department for Agricultural Planning (DAP) oversees the formation of agricultural plans, helps generate agricultural

policies, strengthens inter-agency coordination, collection and dissemination of commodity prices. Responsibility for water management is divided between the Water Resources Utilization Department (WRUD) and the Irrigation Department. The Ministry's Myanmar Agricultural Development Bank (MADB) extends low interest agricultural loans.

The Department of Agricultural Research (DAR) develops and disseminates regionally adapted crop varieties and crop production technologies. It is involved in international collaboration with numerous international institutions. Yezin Agricultural University's (YAU) primary functions are teaching and training, research and provision of extension services. This includes both degree work and non-degree training programs. The University also does extension work directly with farmer stakeholders.

The Settlement and Land Records Department (SLRD) updates land maps and registers and conducts land surveys. SLRD oversees land administration and decisions on agricultural land disputes. The SLRD is also responsible for compiling crop statistics. The Department of Agricultural Planning is also responsible for compiling crop statistics.

The Department of Agriculture is responsible for the production of seed varieties and farmer extension services. There are 466 DOA offices located throughout the country with the total staff of 8,619. Among them, 5,471 are agricultural technicians with the degrees of (B.Agr.Sc) and Dip. Agri.. Almost all are assigned to be extension workers in each township throughout the country. Agriculture extension officers are situated in nearly every township. Most of these extension officers receive training through the Central Agriculture Research and Training Center (CARTC) and Vegetable and Fruit Research and Development Center (VFRDC).

The Inter-Ministerial Committee on Land Scrutiny and Land Allocation (CLSLA) was established in July 2012. The Committee's work focuses on issues related to national land-use policy, planning and allocation. This includes agricultural projects. The MOECAF chairs the committee.

The Land Confiscation Enquiry Commission (LCEC) was formed in July 2012. The commission focuses on issues relating to land confiscation. In Myanmar, land confiscation means the transfer of land use rights from the current occupier. The committee helps to determine whether this transaction was carried out in compliance with existing law, utilized for its intended purpose, and if adequate compensation was paid.

The Central Committee for the Management of Vacant, Fallow and Virgin lands (CCVFV) overseas the granting and monitoring of use rights over VFV lands. This may be for agriculture, mining and "allowable other purposes" under the law. Allocations are to be done in concert with concerned Ministries and Regional or State Governments. Unclassified forest lands are generally considered VFV land.

1.2 Rationale

A. Baseline projects and investments for the next 3-5 years addressing the identified GEB threats and causes and development of the CC vulnerable sector (main co-financing sources of the project)

Although agriculture and forestry are closely linked in rural Myanmar, there is limited capacity to make certain these two sectors are well coordinated to generate ecosystem-based approaches. Baseline efforts covering land use and management are highly complicated and evolving. As the regulatory and management frameworks alter, it will be critical to make certain changes fully integrate ecosystem management issues including sustainable forest management and climate smart agriculture.

Myanmar's agricultural and forestry practices are largely predicated upon production with limited capacity for maintaining ecosystem services required to support SLM, SFM, and CC benefits. Within the baseline scenario, forest and agriculture management in Myanmar will most likely continue to be production-oriented with minimal progress made towards sustainable forest management and meaningful carbon sequestration. Ecosystem health objectives will not be mainstreamed into management planning and practice.

Under the baseline, no comprehensive regulatory and planning framework exists to maintain ecosystem functionality and services across diverse landscapes. Forest plans are primarily focused upon delivery of high value timber. Agricultural planning is focused primarily upon increased production. Land classification boundaries were in many cases set a century ago. These classifications no longer reflect the actual land use or the ecological characteristics. Good forest is potentially targeted for cropland while lands devoid of forests are managed as forested lands. Current mechanisms to register community agricultural and forestry land, though positive, do not adequately integrate mechanisms to address issues related to climate, forest, and land management. This baseline gap creates substantial vulnerabilities in terms of forest and land degradation as well as potential loss of climate change mitigation benefits. As a result, land, water, and forest resources are left highly vulnerable. This includes upland forests, dry regions and lowland mangroves.

Myanmar's foresters and agriculturalists are attempting to shift approaches to meet the challenges of a new era. Improvement is progressing too slowly and to keep pace with the rapidly emerging challenges associated with increased international investments and domestic resource demands. The level of interaction among national and international experts is slowly increasing. However, national approaches still do not generally integrate best international principles and practices. Management and planning is not participatory, undermining the ownership and support of local stakeholders. Baseline regulatory and capacity tools are not aligned to support management that supports a mosaic of land-uses across an agro-ecosystem. The harvest of high-value trees, elevated demands for fuel-wood, and agricultural expansion is not balanced by efforts to enhance and maintain the ecological integrity required to address land degradation and climate change challenges within these productive landscapes.

There is an expanding understanding within the agricultural community of the need to promote greater skills in terms of climate change adaptation and mitigation. However, there is no policy framework and/or program in place designed specifically to support the achievement of climate smart agriculture. The agricultural research and academic potential for Myanmar is high. As noted, there are multiple institutions in place. For instance, under the project of "Consortium for Unfavourable Rice Environments (CURE) –IRRI, International Rice Research Institute", DAR has been producing climate resilient rice varieties. It has released 9 varieties for drought tolerance rice and 4 varieties for salinity tolerant rice and 8 varieties of submergence tolerant rice. Capacity building trainings for farmers and extension workers of DOA have been conducted for "Participatory Varietal Selection (PVS)" of rice seeds most suitable for their specific regions.

However, these institutions do not benefit from a formal program to support the identification and modelling of ecosystem-based CSA approaches and techniques specific to Myanmar's unique agricultural environment. There are approximately 5,000 extension officers in Myanmar. These officers receive almost no training or support in terms of climate smart agriculture tools and techniques. At the same time, there is no formal farmer level training program to deliver CSA tools and techniques to agrarians directly responsible for land use practices. This business as usual scenario will lead to continued land degradation, weakened resilience to climate change, and limited contributions to climate change mitigation.

Myanmar has a long history of forest management. The MOECAF has offices operating at all levels of government from the capital to the most rural locations. There is an extensive institutional and planning framework in place. However, this baseline is focused largely upon extraction of high-value timber. Outside of protected areas, very little effort goes into making certain natural diversity and ecosystem

services are retained. Afforestation efforts tend to be centralized, limited in scope, and oriented towards industrial-style forest plantations. Baseline forest management systems and institutions were created in a time when Myanmar's forests and associated management challenges were vastly different. Existing knowledge and skills are inadequate to meet emerging challenges. The management system requires updating, including training programs, materials and approaches. Implementation of the MSS has faltered in recent decades. The quality and health of Myanmar's natural forests is declining. Myanmar's traditional taungya agroforestry practice may well be an important benefit sharing and community-management tool. However, forest staff are not trained in how to support such an approach in a collaborative manner.

There are land use, agriculture and forest planning mechanisms in place. However, under the baseline, there is a very low likelihood that natural resource planning will be coordinated to achieve SLM, CC, and SFM objectives on landscape level. Planning conducted by the Department of Agricultural Planning focuses upon setting and achieving production targets. These are based upon the Country Program Framework that sets out five-year short-term plans. Planning in the forestry sector is also production based. Thirty-year forest management plans are developed at district level. These plans are essentially used to establish production targets. Targets are based on quotas developed at central level. Management plans are revised every 10 years based on forest inventory. Township Forest Department offices are responsible for implementing forest management plans and for drawing up annual work plans to reach desired levels. They prepare and supervise forest harvest operations, enforce forest protection measures and support local community forestry applications.

As noted, land classification and ownership patterns are changing rapidly in Myanmar. These changes are not accompanied by commensurate efforts to maintain ecosystem services either within or between land classes.

Creative tools such as community forestry could be applied as a tool to help maintain ecosystem integrity in the face of such challenges. Implementation under the baseline has been stymied by a general lack of capacity. The Community Forestry Instruction (CFI) of 1995 provides the administrative basis for the handover of forested land for management and use by communities. The 30-year Forest Master Plan (FMP 2001) mandates that community Forest User Groups manage 2.27 million acres by 2030-31. Community forest establishment over the last 15 years has averaged 6,943 acres (2,810 ha) per year. This is too low to meet the FMP mandate. Only 1,572 FUGs manage 104,000 acres of forest. To meet the FMP mandate, some 50,000 acres/year would have to be enrolled under CFI. Each FUG is responsible to develop and implement the Community Forest management plan. Although support exists for community-based forestry, implementation under the baseline has been severely challenged. The CFI is not yet been incorporated into law. Operational guidelines do not exist to help communities transparently and equitably manage transferred forest use rights. Forest Department staff are not trained or well-practiced in CF. Forest and land use planning required to support community-based forestry does not exist. There is no ecosystem-based framework to make certain community-based forestry delivers CC, SLM, and SFM benefits. The end result is that although approximately 500 Forest User Groups are established, but almost none is operational.

Shifting agriculture if done properly delivers forest, land and climate change benefits. In its purest form, this is a highly sustainable system of agriculture. Ideally, the evidence of land degradation is limited. Forest regeneration is encouraged. Biodiversity diversity, although not entirely secure, is fairly well maintained. However, the current system of proposed land tenure schemes does not support sustainable shifting agriculture. Instead, the system attempts to place mechanisms suited to fee-simple ownership at low lands to upland farming system. The result is a gradual expansion of abandoned lands opened for cultivatable land. The result will be greater land use pressure and more forest loss. Under the baseline scenario, sustainable shifting agriculture will likely be lost and gradually displaced by permanent upland agriculture. The result will be a loss of forest cover and related ecosystem services, including land stabilization, water retention, and climate change mitigation.

There are several opportunities under the baseline to address these challenges and more fully integrate climate, forest and land management issues within the evolving planning and regulatory frameworks.

- The government agencies of concern both have extensive human resources and institutional infrastructures. The MOECAF's annual budget is approximately USD 21 000 000. The MOECAF has a total staff of approximately 65,000. The MoAI's annual budget is approximately USD 216 500 000. MoAI has a total staff of 107,000.

- The Scrutinizing Committee on Land Use (SCLU) is to formulate a new National Land Use Policy and Land Use Management Plan. Chaired by the MOECAF, the SCLU will work with FAO, other UN agencies and development partners to secure technical and financial support. SCLU's near-term priorities include: 1) land-use survey training and conducting pilot land-use surveys that will lead to land use surveys and data collection nation-wide; 2) formation of an Advisory Group of local and international experts to review land use policy, law, and regulatory experience worldwide.

- The SCLU is in the process of developing a National Land Use Policy (NLUP), a Land Law (LL) and a Land Use Management Plan (LUMP). FAO is fielding a high-level land scoping mission to Myanmar to generate recommendations on the medium and long-term interventions to provide technical and financial support to the SCLU in the formulation of NLUP, the LL, and the LUMP. This will be a significant effort with development partners to enable Myanmar and the SCLU to implement the new voluntary guidelines on land tenure. This work will form an important part of the baseline project for this GEF incremental initiative. GEF incremental financing will provide the TA necessary to enable this land use policy and management planning to address directly the key drivers of deforestation and land degradation.

- Since July 2011, the Ministry of National Planning and Economic Development has switched to bottom-up planning, with responsibilities devolved to Regions/States, Districts and Townships. At State/Region, District, and Township levels, Land Use Advisory Committees (LUAC) will be established, and will include civil society and private sector representatives. Agricultural Oversight Committees, comprised of sector ministry staff, meet regularly to resolve land use conflicts. These will need to be combined with LUAC or their respective roles clearly differentiated. This shift will take years to effect and will benefit from targeted pilot initiatives such as those that will be implemented with GEF and co-funding support. Civil society engagement has been sought actively on planning process reform from the Food Security Working Group, the Land Core Group and others.

- Land-use Advisory Committees are established or are being established at State/Region, District, and Township levels. The committees include civil society and private sector representatives. The Land-use Advisory Committees are to support the work of the CLSLA. The committees identify areas of VFV land (including unclassified forest) where tenure is contested. They refer these lands to the CLSLA and the Land Confiscation Inquiry Commission as appropriate. This includes development of a roadmap designed to lead towards a unified Land Use Policy.

- The MoAI is in the early stages of land tenure reform work. This is primarily accomplished through the Settlement and Land Records Department (SLRD). The new Farmland Law 2012 (FL012) provides the legal basis for this work. For the first time the name of the tenant farmer owner will appear in the Record of Land Rights Register against each parcel. This will require FMB to ascertain the rightful owner of each parcel before the name can be entered. Before this is done, FMB will need to update the Kwin/Block maps[5] to reflect changes in parcel boundaries as many are 100 years old or more.

[5] There are ~84,000 Kwins and 75 million parcels in the surveyed areas of the country covering ~85% of the country's agricultural land, with the remaining 15% yet to be brought under a formal cadastre system, much of this in upland areas.

- The Forest Law is due to undergo several key amendments. It is expected that the Community Forestry Instruction (CFI) will be incorporated into the Forest Law, but there is need for more detailed guidance on technical and institutional aspects of implementation of Community Forestry (CF). Among other proposed revisions of the Forest Law are that both Public Protected Forests (PPF) and CF may be harvested, and that teak is no longer automatically state property.

- Under a LIFT-funded initiative "Land Administration & Management Program" (LAMP) the SLRD/FMB will work closely with UN Habitat to develop a GIS based cadastral system to re-survey the existing Kwins/Blocks, and create a database linked to digitized maps for updating and verification of parcels. This will need to be done in a collaborative way with the MOECAF and others to ensure forest and agriculture land are demarcated accurately. It also calls for new and innovative thinking about what "agriculture" and "forest" land are in the context of agroforest ecosystems and customary land tenure patterns and institutions.

- The UN Country Team in Myanmar jointly supports the Government in four strategic priority areas that include agricultural development, addressing climate change and enabling good governance. These priority areas are outlined within the UN Strategic Framework document (2012-15), which was developed over four years in coordination with the government. This UNCT framework will provide a valuable mechanism for coordination between UN agencies and the government in these areas. This includes a large Adaptation Fund (AF) project entitled Addressing Climate Change Risks on Water resources and Food Security in the Dry Zone of Myanmar and a small UNDP funded REDD+ initiative in Kachin State focussing increasing youth participation in SFM. This project will coordinate with MOECAF, MOAI and UNDP on these projects plus other emerging UNDP initiatives going forward in order to build synergies and avoid duplication. This coordination and communication has already begun and lessons learned absorbed in the proposed project. For instance, FAO is member of the technical advisory group for AF project. Lessons and good practice were drawn from a range of existing work on gender mainstreaming, including that of the UN Women/IFAD/WFP/FAO project entitled Accelerating Progress toward the Economic Empowerment of Rural Women. As this proposed project moves forward, Membership and attendance by project staff of the Gender Theme Group, will help support mainstreaming of gender within the project.

- National legislation in Myanmar restricts the transfer of productive and available land to other uses. However, agriculturally unproductive lands are allowed to be used in other productive activities. The measures adopted by the Government for promoting crop diversification at farm level include the free choice of crop production, the exclusion of second crops from land taxation or quota procurement and the low rate of water charges for irrigation. The Ministry of Agriculture and Irrigation is making great efforts to enhance the development of the agriculture sector to ensure food security within the country and the stepping-up of export volume to generate foreign exchange, essential for further investment and the development of the overall economy of the nation. Two different approaches to improving natural resource management were adopted by the project. The first was to expand cropping area, mainly for winter crops for edible oil and pulses, and the second was to increase per unit area yield by mobilizing all available resources in combination with double cropping, multiple cropping and mixed cropping on productive lands.

B. Remaining barriers to address threats on GEB (for GEF Projects) / CC vulnerabilities (for LDCF/SCCF projects)

There is a strong national desire to insure that Myanmar's ecological integrity remains in place to provide a more stable future. This desire is reinforced by a broad understanding of the linkage between environmental and social well-being. Stakeholders want to adopt the tools required to support sustainable forest management and climate smart agriculture. The government at all levels is working diligently set in place the institutions and institutional capacity required to address emerging forest and land degradation. Stakeholders realize the immediacy of tackling global climate change. However, four

fundamental barriers restrict Myanmar from efficiently advancing beyond the existing "business as usual" scenario.

Barrier 1: Insufficient legal regulatory and institutional framework for sustainable forest and cropland management.

The government has the ambition, but not the capacity, to build the regulatory and institutional structures required to keep pace with the increasing demands of a rapidly changing socio-economic environment. Myanmar is changing fast and the current institutional and regulatory safeguards are inadequate. As detailed in this project document, several new laws and regulations are being adopted. There is an urgent need to support and building the capacity of government and other stakeholders at all levels to generate a legal and institutional framework that reflects the unique Myanmar context while integrating best international principles and practices related to sustainable forest management and climate smart agriculture.

Myanmar requires greater access to knowledge and experience regarding strategic natural resource management planning and regulation. Existing knowledge and skills are inadequate to meet the challenges posed by managing forest lands that are intertwined with a mosaic of land-uses across complex agro-ecosystems. There is a urgent need to work with stakeholders at all levels to set in place models for integrated, holistic management regimes that consider the cumulative impacts and benefits of multiple land uses. These models should be predicated upon delivering not only social benefits, but also sustainable forest, land and climate change improvements. The barrier exists, in part, due to the lack of opportunity for new and existing government staff and private stakeholders to increase their knowledge regarding emerging natural resource management challenges and best international experience at addressing these challenges. This includes experience and knowledge regarding how to best advance regulatory enhancements designed to support long-term ecological integrity and associated ecosystem services.

Community-based forest management could be a meaningful tool for both the improvement of the quality of life for rural dwellers and the maintenance of the ecological integrity of Myanmar's forest systems. Myanmar has shown support for this model. Hundreds of community-managed forests are in place. Hundreds of community forest user groups are established. Unfortunately, none of these efforts are delivering tangible in terms of positively impacting forest integrity, sustainable land management, and climate change. The Community Forest Instruction (CFI) from the Forest Department is a good step, but has no basis in law. Both regulatory and institutional pathways are required to support this. Without a proper regulatory framework supported by highly trained government agencies, the implementation of community-based forest management will continue to be stymied.

The current regulatory framework does not offer clarity regarding the legal requirements and responsibilities of community level representative and accountable legal entities. Without such a mechanism, communities are unable to enter into binding contracts and/or equitably generate and distribute commercial and subsistence benefits. Without a community-based legal entity, the government does not have a specific organization to hold accountable for proper management of transferred use rights.

The regulatory framework does not provide adequate details regarding the determination, transfer and monitoring of use rights from the government to the community-based organization. For community-based forestry to function properly, there must be a mechanism for the government management agencies to determine allowable uses and to transfer those uses to the community. These parameters of use are absent from the currently framework. These use parameters should be incorporated within management plans that include monitoring responsibilities for both the community and the government. The framework must also describe community and government responsibilities and liabilities regarding adherence to use parameters. The agreements must describe what penalties and/or adjustments will occur should conservation targets not be met.

The community-based forestry regulatory framework does not specifically integrate core values related to biodiversity conservation, SLM and climate change. These national and international concerns are fundamental to the success or failure of community-based forestry as a tool to maintain critical ecosystem services. The current approach lacks full integration of the science required to make informed decision-making. The framework does not provide a conduit for delivery of this information to participating communities to increase their capacity.

Existing rules and regulations restrict rural communities from planting and having ownership of high value forest tree species, hampering their ability to generate income. The framework lacks guidance and safeguards for inclusivity, particularly for marginal groups such as women and poorer households who are generally highly forest dependent. The existing regulatory framework fails to provide clear guidance regarding multiple use areas. This challenges the effectiveness of community-based forestry efforts to become an effective tool to protect "closed forests" and improve the ecological integrity of "open forests". All of these challenges can be traced back to the existing capacity barrier.

Traditional shifting agriculture or taungya has the potential to contribute positively to forest conservation, sustainable land management, and climate friendly agriculture. Properly managed, this form of agriculture can promote forest regeneration. Shifting agriculture can create an incentive for communities to protect vital watersheds, improve water retention, increase climate change resilience, and lower rates of land degradation. Unfortunately, due again to capacity barriers, the existing regulatory and institutional framework does not set in place the tools required to support communities to better plan shifting agriculture and codify traditional land tenure systems so that they are more fully in line with modern challenges and accompanying changing social and economic conditions. The evolving legal framework does not formalize customary land tenure patterns or customary institutions for decision-making. There is an urgent need to set in place the regulatory and institutional pathways required for these communities to address these emerging challenges.

Climate Smart Agriculture (CSA) is a critical element to any modern agricultural scenario. Again, due to capacity constraints, climate smart agriculture enjoys very little institutional and/or regulatory framework support. Myanmar has approved and updated numerous agriculture and cropland related laws. The process of implementation is not fully undertaken. However, this regulatory framework does not integrate and/or fully inspire the adoption of climate smart agriculture principles and practices. This is particularly the case in coastal, upland, and dry land areas were rural dwellers are more susceptible to climate change impacts and who are more likely to contribute to climate change through the nexus of use between forest and agriculture. Rigid definitions of agriculture land on the one hand and forest land on the other and may only be applied on land classified respectively. The transition to Improved Crop Land Management (ICLM)/CSA will require the financing of new kinds of incentives that draw upon innovative solutions. Existing policies do not recognize that in reality, farmers may be cultivating taungya or even permanent paddy on forestland or protecting forest on agricultural land, sometimes in parallel and sometimes in rotation. This hinders the ability to set in place climate smart agricultural interventions that will deliver sustainable land management, climate change mitigation/adaptation, and agricultural production benefits.

Barrier 2: Minimal experience among key agriculture stakeholders in developing and implementing improved cropland management/climate smart agriculture practices.

A key barrier to the realization of climate smart agriculture is a dearth of experience with actualizing climate smart agricultural practices on a meaningful scale. There are very few examples of "climate smart" agriculture operating on the ground. There is limited experience with the development of resilience and low-emission agriculture alongside the identified need for higher production and intensification within agriculture. Myanmar is transitioning towards a more farmer-driven land management approach. The agriculture sector is important to Myanmar and the country invests heavily to support the sector's success. However, the establishment of climate smart agriculture examples and

dissemination of knowledge are not informing the farm level decision-making. This barrier exists for a host of reasons beyond the regulatory and planning frameworks discussed above.

Extension Services are situated around the country and stand prepared to support farmers. However, these officers receive almost no experiential training in climate smart agriculture. The country has no experience with innovations such as the establishment of farmer field schools as a mechanism to promote adoption of climate smart practices. Without formalized farmer field schools, there is no way to generate the knowledge, community support, financial safety net, institutional framework, and strategic investment avenue to support the establishment of climate smart agriculture models. Farmers do not have exposure to methods designed to improve productivity, sequester carbon and to reduce and avoid GHG emissions. These gaps contributing to the existence of the barrier are evident in upland forest or shifting cultivation areas, dry zone landscapes, and wet delta regions. Farmers and extension officers are dire need of "centers of excellence" for climate smart agriculture that can serve as examples of improved practices.

Farm field planning predicated upon integrated land use planning and ecosystem based indicators is largely absent. The ability of farmers to achieve ICLM/CSA is hampered by very low levels of capacity to actually plan and implement improved land management, particularly with erosion control and carbon sequestration objectives mainstreamed. These are simply not part of the decision-making matrix. As a result, there are no substantial examples of climate smart agriculture in action and/or lessons being generated showing the potential social, economic, and ecological benefits of such practices.

Coordinated, community-based efforts across large landscapes are absent. Achieving climate smart agriculture requires coordinating efforts over large areas and with meaningful numbers of farmers. This means working across large landscapes where forest, crop, water, and other resources are integrated and aligned to deliver quality production while supporting the achievement of climate change benefits. Without such a coordinated and landscape level effort, climate change impacts of meaningful scale will not be realized. At present, such capacities do not exist. Without such capacities, the barrier remains persistent.

Research and development are supported extensively throughout the country. This includes an established group of teaching universities. However, stakeholder capacity to identify indicators, innovate climate smart techniques, and measure the effectiveness of various climate smart agricultural interventions is weak. There is substantial need and demand for "proof of concept". The barrier stands without on-the-ground demonstrations monitored to verify the effectiveness of climate smart agricultural methods.

Barrier 3: Minimal experience among key forest stakeholders in developing and implementing Forest Department and Community Forest-driven SFM practices.

Community-based forestry presents an opportunity to realize benefits in terms of forestry, sustainable land management, and climate change. There are many talented and dedicated persons within the ranks of the MOECAF. Still, the country does not have the capacity to generate working examples of successful community-based forestry. More than half of a sample of forest user groups recently studied had a performance deemed moderate or poor (ECCDI 2011). This is a major barrier to the realization of sustainable forest management.

Community-based forestry relies upon the coordination of many elements to generate social and ecological benefits. As noted under Barrier 1, most of these elements do not exist in Myanmar. This includes the need to describe community-level representative and accountable legal entities, model agreements for the transfer of use rights, regulatory guidance regarding benefits and liabilities, integration of social and ecological concerns, etc. However, even if that barrier is removed and the working parts are put in place, the country still lacks the capacity to move towards on-the-ground implementation.

Absent "on-the-ground" elements include guidelines and by-laws for individual forest user groups. There is a need to work with communities and government agencies to working models for integrated forest conservation planning. There are no tangible models and mechanisms to promote more transparent decision-making. There is a need to show that community-based forestry can create economic and social incentives for conservation. Even more importantly, that these benefits can be sustainable and factor in promoting social cohesion. Communities and extension officers require demonstration of skills to manage their forest resources. Removing the barrier will require examples of reliable and transparent approaches towards monitoring and reporting of all forestry activities.

Because of the existing capacity barrier, mechanisms for planning and decision-making that ensure sustainability of forest cover and quality do not exist. Resource use parameters established by government agencies must describe the extent and allowed uses of community-managed forest areas. These use parameters must be predicated upon the maintenance and enhancement of natural ecosystem functionality and climate change mitigation objectives. Parameters must be monitored and enforced with both communities and government stewards responsible for oversight. Removing this barrier requires setting in place examples of adequate coordination at the district and township level integrating land-use between Forest Department (FD), Agriculture Department (AD) and local authorities. At present, for instance, no land-use maps exist to facilitate such coordination.

There is no systematic approach to capacity building for SFM/SLM. Essentially no local authorities have any training in how to monitor and enforce by-laws specifying how to implement SFM, or on the importance of healthy forest ecosystems to control erosion. At the local level, producer and community-based organizations are poorly developed with limited opportunities for training in sustainable resource management

Increasing interest, knowledge and confidence in community-based SFM is hampered by inadequate studies that test and demonstrate alternative tree and shrub species and agroforestry models such as taungya with local communities and officials. In some ecosystems, farming and forest management can be effectively combined for the long-term benefit of rural communities and for the sustainable production of valuable timber species. The adoption of improved forest management by the FD and FUGs is hampered by an inadequate capacity to provide information and expertise about community forestry to a large number of villages throughout the country and to do so in simple, practical terms.

So long as the barrier persists, the country will not have community-based forestry at a meaningful scale and community-based forestry will not deliver substantial climate change mitigation and/or forest integrity benefits. Achieving this level of impact requires setting in place working examples of community-based forestry that cover large and complex land mosaics. Community-based forest conservation models are needed within all eco-regions. In the delta, communities rely upon mangrove forests for fuel wood. These mangroves form a bulwark to meteorological events, contribute substantially to climate change mitigation, are critical nurseries for fisheries, and help maintain agricultural productivity. In the dry zone, forests are important for fuel wood as well as grazing. In the upland area, forests are critical for a host of ecosystem services and are a critical element to maintaining the sustainability of shifting agricultural practices. However, due to the existing capacity barrier, there are no such working models at any level.

Barrier 4: Insufficient capacity to replicate successful practices and achieve meaningful scale.

The final barrier relates to the ability of the government and other stakeholders to identify, capture, and disseminate best lessons. There is limited capacity and experience within Myanmar to promote the systematic monitoring and effectiveness of demonstrated practices. There is even less experience and capacity with the dissemination of these practices. Wide uptake of forest management, sustainable land management, and climate change mitigation is suppressed without institutions and pathways to promote the delivery and upscaling of successful practices. Removing this barrier will require establishing

models for helping key government agencies such as the MoAI and MOECAF to create strategic marketing campaigns. These campaigns should be linked to the results of models generated, monitoring conducted, and stakeholders to be served. This should include building the capacity of national and local agencies responsible for extension so that they have the ability to cheaply and efficiently gather best practices and apply those practices to their own activities. Currently, these capacities do not exist. So long as these capacities are absent, the barrier will stand. The long-term impact and leverage effect of donor investments will be severely limited.

C. Incremental/additional reasoning (added value of the project in particular the GEF/LDCF/SCCF financing)

In the baseline scenario, stakeholders will continue to struggle to reverse trends leading to the loss of forestlands and the degradation of croplands. Baseline programs will struggle with addressing the key drivers of deforestation and degradation. Critical underlying causes related to governance will be addressed inadequately and stakeholders will struggle to overcome key barriers to reducing deforestation and degradation. Without GEF's incremental support, investments will not focus on integrating carbon sequestration and SFM objectives into productive forest management practices and policies and SFM will remain in its infancy because it will not be transferred effectively to the emerging CF mechanism.

Incremental GEF resources will support the mainstreaming of SFM and SLM objectives into productive forest and cropland management practices. The proposed project will provide an opportunity for a major scaling up and strengthening of CF management techniques to address capacity constraints within the forestry sector. GEF's incremental investment will strengthen participatory management of forest resources to mitigate CC. GEF funding will enable stakeholders to improve the application of good forest management planning and good silvicultural practices. It will enable community forest groups to strengthen their tenure rights over community forests and strengthen the management of community forests through improved management of grazing and wood collecting in order to enable natural regeneration, application of traditional taungya agro-forestry practices. Consequently, GEF funding will enable the FD and community foresters to avoid emissions caused by degradation, increase sequestration through enhanced biomass and improve the productivity of forests. GEF's incremental investment will also enable farmers to apply improved cropland management practices designed to increase productivity, reduce pollution, and avoid GHG emissions over baseline cropland management levels.

The proposed project builds on and complements the baseline project. The GEF funded alternative will address the proximate drivers and underlying causes of deforestation and degradation as well as capacity constraints and policy barriers to mainstreaming biodiversity conservation and SFM into productive forest management practice. The objective of the GEF funded alternative is to build the capacity of farming and forestry stakeholders to mitigate CC and improve land condition by adopting climate smart agriculture and sustainable forest management policies and practices. Innovation: The project seeks to build upon and complement the cultural ecology of small holder farmers by applying an agroecosystem approach to integrate forest and cropland management. In so doing, the project will not only generate global benefits including carbon storage, improved land cover, water provision, land stabilization, and biodiversity, but it will also generate significant critical national benefits in terms of enhanced food security in a region of the world where food insecurity is high.

1.3 FAO's comparative advantages

Drawing from across FAO's organizational capacity, FAO-Myanmar is bringing to bear significant technical and policy level expertise to assist Myanmar in addressing priority global environmental issues nearly all of which relate to FAO's core areas of expertise and work, including agriculture, forestry, fisheries, and so on. The mandate of the Forestry Department of FAO is to support member countries to implement sustainable forest management by providing policy advice, technical knowledge and reliable

information. The FAO Forestry Department employs about 150 staff, including about 10 staff working in the Asia-Pacific region. FAO's rich and unique experience worldwide designing and implementing with country partners projects to build institutional capacities for SFM and REDD+ through FAO's central role in the UN-REDD program. In Myanmar, FAO has been a key player in the Myanmar forestry sector for decades. The experience FAO has gained in working with Myanmar partners during this long history is an important element in FAO's comparative advantage to implement this project, as the proposed GEF project will build on this foundation of lessons learned and good practice to scale up SFM nationally. FAO focuses much of its country support and field activities on improving agricultural production through sustainable management of natural resources, while addressing new challenges such as CC. The concept of CSA has emerged from FAO's expertise and long term experience and can be defined by a set of policies and practices promoting mitigating CC through C sequestration and reduced GHG emissions in addition to increased agricultural production, and agro-ecosystems and livelihood resilience. Many programs have been developed under the umbrella of CSA and this knowledge and expertise will be brought to bear in support of this GEF incremental investment. FAO is a well-known source of knowledge and a technical expertise provided in improved management practices such as conservation agriculture, agroforestry, water management, integrated livestock management, and restoration of degraded lands6. FAO's EX-ACT software to monitor the climate benefits will be a useful supporting tool.

1.4 Participants and other stakeholders

During the project preparation, a preliminary stakeholder analysis was undertaken in order to identify key stakeholders, assess their interests in the project and define their roles and responsibilities in project implementation. These stakeholders fully participated in the project design process. This included several formal and informal discussions at the pilot site and national levels. The following table summarizes the major categories of stakeholders identified, their roles and responsibilities in the project, and the project's approach for stakeholder involvement.

Organization	Relevance
National Government	
Ministry of Agriculture and Irrigation (MoAI)	Ministry of Agriculture and Irrigation is one of the two lead government institutions, alongside with Ministry of conservation, environment and forestry involved in the implementation of the project. Is expected contributing expertise from different departments: the Department of Agriculture in the extension field, the Department of Agriculture Research in new technologies, the Water Resources Utilization Department in supply of drinking and irrigation water, and the Department of Settlement and Land Records in issues related to agricultural land registration and access. The only tertiary education establishment for agriculture in the country, Yezin Agricultural University is also under the MoAI. The MoAI is responsible for overall development of the crop subsector, including: i) extension; ii) research and development; iii) irrigation; iv) agricultural mechanization; v) formulation of agricultural plans and policies; vi) higher education in agriculture; vii) agricultural micro-credit and loans; viii) agricultural land reclamation; ix) land development and land reform; x) biodiversity; xi) land surveying and mapping; xii) and coordination with key concerned agencies.

[6] E.g. the LADA project's methodologies and tools to assess the state of land resources, and related drivers and impacts of land degradation in a way to build sustainable land management and agriculture investment plans

	The main objective of the MoAI is i) to increase crop production and productivity ii) to fulfil the needs of local consumption, iii) to export more surpluses of agricultural products, and iv) to provide assistance to rural development. Efforts are being made to promote production and productivity in 10 principal crops: paddy, sugarcane, long staple cotton, maize, groundnut, sunflower, black gram, green gram, and pigeon pea.
Department of Agriculture (DoA)	The project will be executed through the (DoA), which will play the coordinating role, in close coordination with the FD. The Department will be the key actor in enabling farmers to adopt CSA and ICLM. Moreover, it will chair the project steering committee, which will include the FD as well as representatives of civil society. (DOA) has extension staff in each of the pilot sites and will be directly involved in farmers' training, technology transfer and monitoring activities. It is the largest institution under MoAI to work for transferring appropriate technology, development of pest control, development of land utilization, cooperation and coordination with Department of Agricultural Research for technology dissemination and generation, and distribution of quality seeds to the farmers. There are 5 divisions under DOA namely Extension Division, Planning Division, Seed Division, Procurement Division, and Land Use Division. Under the Extension Division, Plant Protection Division, Horticultural Division and Plant Biotechnology Laboratory are being operated. Except industrial crops and plantation crops, Extension Division is playing in technology dissemination to the farmers for rice and other major crops.
The Department of Agricultural Planning (DAP)	The main function of DAP is to coordinate with various departments inside and outside MoAI with different objectives : i) providing assistance to policy makers in adopting agriculture policies, ii) formulation of various agricultural plans, iii) relation with international organizations and governments, iv) strengthening cooperation and coordination among inter-agency, v) agricultural trade and business management, vi) reporting and compilation of agricultural statistics, vii) conducting surveys, viii) recommendation for further development of agricultural sector, and ix) development of human resources in agricultural vocation.
Irrigation Department (ID)	ID plays a critical role for ensuring future crop productivity by promoting access to irrigation water. The goal of the irrigation department is to constitute systematic supply of water to cropping areas for agricultural development and when necessary draining out the surplus water or protecting flood water from the cropping areas as well.
Water Resources Utilization Department (WRUD)	Sustainable utilization of country's water resources for food and agriculture is a key issue in Myanmar. WRUD main functions are i) to supply irrigation water by pumping from rivers, streams and also ground water from feasible potential areas to increase the agriculture production in Myanmar, ii) to promote the socio-economic status of rural wells and piped water reticulation systems, iii) to supply crop water and drinking water from natural spring sources by gravity flow systems in the hilly region of the border area and remote areas, and iv) to disseminate the knowledge and practice of efficient usage of drip irrigation. To ensure food security and sustainable livelihoods especially in rural areas of Myanmar, small-scale irrigation scheme must also be developed particularly in central dryzone of Myanmar (pilot site 2). Promoting role of WRUD in this aspect and is to tackle water scarcity to adapt and mitigate climate change.

Department of Agricultural Research (DAR)	DAR is involved in the production of quality seeds of various crops for improved production, drought and saline tolerance and with improved resistance to major pests and diseases. DAR can also provide support for use of effective micro-organisms for soil enhancement. Research activities are mainly emphasized on agricultural production, such as development of high yielding varieties, efficient and economical farming practices, suitable cropping system for the different ecological zones, etc. Applied and basic researches are being carried out in specific crop divisions. E.g. Rice and Other Cereal Crop Division, Oil Seed Crops and Food Legumes Division, Industrial Crops and Horticulture Division, etc.
Settlement and Land Records Department (SLRD)	Maintain land ownership and tax records plays a key role in land tenure issues :The SLRD is responsible for updating land use and registration, collection of land use data and crop statistics. Its main activities are i) updating land maps and registers, ii) land survey and map production, iii) collection and compilation of timely and reliable crop statistics, iv) collection and compilation of land use statistics, v) land administration and decision on agricultural land disputes, and vi) conducting agricultural socio-economic surveys. With increasing momentum for agricultural development activities and transformation of Myanmar agriculture from traditional resource-based to knowledge-based agriculture, this department will play fundamental role for providing agricultural information and essential statistics. In order to develop need based agricultural policy formulation and analysis followed by planning, systematic agricultural statistical activities is mandatory. Current development activities are being set back by lack of sound statistics and information system.
Ministry of Environmental Conservation and Forestry (MOECAF)	The MOECAF is responsible for managing all forestlands in the country including the Permanent Forest Estate (PFE) and Public Forests. MOECAF develops the forest policy and legal frameworks and coordinates Climate Change related policy analysis and development. It is also in charge of environmental protection including the development and implementation of rules relating to Environmental and Social Impact Assessments (ESIA). The Ministry of Environmental Conservation and Forestry (MOECAF) is responsible for sustainable management of forest resources, national parks, wildlife and plant conservation. The National Commission for Environmental Affairs was terminated and the MOECAF took its responsibilities to oversee and manage all matters related to the environment and climate change. The MOECAF is also the official Myanmar focal point for the GEF. It was upgraded in place of Ministry of Forestry in September 2011 as the focal and coordinating agency for the overall environmental management. Under the same umbrella of the Ministry, the Planning and Statistics Department (PSD) coordinates and facilitates the activities of Forest Department (FD), Dry Zone Greening Department (DZGD), Myanmar Timber Enterprise (MTE), Environmental Conservation Department (ECD) and Land Survey Department (LSD). Of them, the Forest Department is responsible for the protection and conservation of biodiversity and sustainable development of all forest resources.
Forest Department (FD)	The FD will be the key partner on all SFM related work and will institutionalize participatory forest management as national policy and scale up SFM activities. Will be key adopters of SFM practices at the national, state, and local level and key beneficiaries of training and technical assistance. It is responsible for protection and conservation of the wildlife and sustainable management of the forest resources and ecosystems. Being established since colonial time, the FD has been the oldest well

	organized department among the government organizations. The FD has accumulated huge experiences on protection and conservation of forest in sustainable manner contributing to national development as well. With regard to forestry education, research and development, University of Forestry (UOF), Forest Research Institute (FRI), Myanmar Forest School (MFS) and several training centers have been established with a specific mandate to produce competent foresters, trained forest technicians and carry out research activities. The FD has achieved major developments towards sustainable forest management (SFM) which is the key mandate in Myanmar forestry. Among others are developments of communities forest, promoting herbal and medicinal plants, formulation of district forest management plans covering the whole country, formulation of a national forest master plan, promoting the concepts of model forests, and identification of Myanmar's Criteria and Indicators (C&Is) for SFM.
Training and Research Development Division, Forest Department	The goal of this division of FD is the development of capacity on the staffs and public also related to sustainable forest management, agro-forestry, community forestry establishment, extension skill, forest rehabilitation and in service trainings. Moreover coordination with international experts.
Dry Zone Greening Department (DZDG)	The Ministry of Environmental Conservation and Forestry, in its all-out effort to make the greening of the Dry Zone created a new department for this matter in July 1997. Will be an important project partner in dry zone areas for ICLM/CSA, particularly the taungya demonstrations, greening activities and demonstration for agro-forestry practices. The DZGD is undertaking greening activities in 3 regions in central dry zone of Myanmar; Sagaing, Mandalay and Magway regions. And is responsible for four main tasks; i) the establishment of forest plantations or environmental greening, for arresting the Desert- like formation and for local supply; ii) the protection of remaining natural forests; iii) the introduction and promotion of the utilization of wood fuel substitutes: iv) the management and development of water resources.
Environmental Conservation Department	It is responsible for policy formulation of environmental conservation framework process, effectively implementation of environmental conservation and management in Myanmar.
Working Groups	
Environmental Technical Working Group (ETWG)	Formed by UN agencies, local and international NGOs, the ETWG provides a forum for i) networking and sharing of information environmental issues in Myanmar; ii) sharing knowledge on technical issues in the environment field; iii) policy advice and public-private partnerships; iv) discussion of issues related to multi-lateral environmental agreements such as the UNFCCC and the Kyoto Protocol. The group could provide important channels for stakeholders' engagement with government on pressing environmental issues of the day.
Food Security Working Group (FSWG) & Land Core Group (LCG)	The FSWG and LCG are key civil society initiatives with strong UN and NGO participation. They will play an important role in this project's work. These roles will be detailed during the full project preparation process under the PPG. They works on food security, fishery, research and development, Land tenure rights (focus on ethnic minorities), contract farming and support information exchange and Resource Centre Contribution to reviews and studies, facilitate consultation, capacity building, advocacy and Information sharing (publications).

Myanmar Environment Rehabilitation-conservation Network (MERN)	Networking for rehabilitation and conservation of natural resources including livelihood activities among the local environmental NGOs.
International Development Organizations and Donors	
JICA	JICA is a Japanese Organization involved for a long time in Myanmar development. JICA support the inclusive development of the country through 4 missions : i) addressing the global agenda; ii) reducing poverty through equitable growth; iii) improving governance; iv) achieving human security. Though active in many different fields, JICA has experienced in the implementation and technical assistance for projects in the resources and disaster management, agricultural and rural development, natural environment conservation and food security. In the delta, JICA is present through two projects related to GEF's one : Supporting participatory multiplication and distribution system for quality rice seed, working with two groups of 50 farmers, one of which is in Laputta district. Potential link for production of organic rice seed.
GIZ (German Society for International Cooperation)	German Cooperation and Development agency, with a focus on sustainable development. In Myanmar, its activities concentrate on promoting vocational training, strengthening the private sector and developing the financial sector.
Asia Development Bank	ADB, a regional bank for development is one of the biggest donor in Asia, with aim to free the continent from poverty. With different roles (technical assistance or grant) for each project, ADB is not focus on a specific field. Nevertheless in Myanmar, many project are in close relationship with environment, agriculture and sustainable development such as "Strengthening Institutions for a Better Climate Investment" or "Enhancing Rural Livelihoods and Income".
UNDP	UNDP provides development assistance in Myanmar since its independence. Together with the government a national development framework was developed to help Myanmar in its triple transition : nation-building, state-building and economic liberalization. As ADB, UNDP has a very broad field of action, and sustainable land management is one of them (see the baseline table).
World Bank	The WB reengaged a strong relationship with the government in order to give assistance to enhance social reform in Myanmar, to improve the livelihoods of total population. Their action is found in all sector of the economy, but some project were related to agriculture, forestry and environment sustainability, such as Irrigation projects, Wood industry development, etc.
USAID	USAID is the US embassy services for development and cooperation. USAID is directly engage with organizations and institutions to support political reforms, ethnic reconciliation, and to strengthen capacity building. USAID is also deeply involved in food security, and designed a specific program for it aligned with the principles of Feed the Future, the U.S. Government's global hunger and food security initiative, and will build upon lessons learned from the initiative's work in Asia.
LIFT Livelihoods and Food Security Trust Fund	LIFT is a multi-donors fund established in Myanmar since 2009. The major objective of LIFT is to provide assistance for the achievement of the first Millennium Development Goal "eradicate poverty and hunger". LIFT also take into account sustainability and fund some projects related to the environment (see baseline, Livelihoods and Environmental Assets Restoration in Rakhine)
Civil Society Organizations, INGOs, NGOs	

Mercy Corps	One of eleven international and national NGOs actively engaged in development activities in Laputta district (Pilot Site 3) and conducted farmer field schools for improved crop production, processing and storage. Planning to withdraw from the area in August 2014.
Land Core Group	Is recognized by government as the leading civil society organization working and advising on land tenure issues. Recently gained Chief Minister approval for sensitive workshop on land tenure issues in pilot site one (Mindat District). Key advisory body with in project steering committee on land tenure issues.
CARE	CARE has experience of introduction of Sloping Agricultural Land Technology to communities with both successful and less successful outcomes. Will be involved in implementation of scenario three in pilot site one.
GRET, GAA (German Agro-Action) and World Concern	Three international NGOs working with introduction of SRI in different areas of Myanmar. GAA involved in introduction in the Ayeyarwady division. GRET started projects in Ayeyarwady Region (Bogalay & Mawgyun Townships) for the recovery phase after Cyclone Nargis. It contributes the improvement of livelihood in agriculture and livestock sector, and innovating for Rural development and Environmental restoration. The overall objectives are : i) to contribute to livelihood security and local governance improvements in rural areas of Myanmar and ii) to support the emergence and strengthening of appropriate services for rural development along with production and dissemination of relevant information for rural farming communities. The specific objective is to implement actions focused on innovation that aims at supporting local stakeholders to deliver services, create sustainable development of rural farming communities and sound natural resource management.
Mangrove Service Network (MSN)	MSN is a Local NGO working in participation with government organizations, Local & International NGO communities; MSN Provides services in environmental conservation, in sustainable livelihoods, community development and that particularly benefits and addresses the needs of marginalized population in rural grassroots communities of Myanmar. MSN is mostly involved in Rural Energy (fuel wood saving training focused on women and improved stoves) and forest conservation (nursery operation & mangrove plantation establishment)
EcoDev	Community Forest, environmental conservation, climate change awareness raising, gender equity and income generation, land tenure rights (expertise with Kachin Ethnic Minority) Contribution to reviews and studies, facilitating consultation, awareness raising, mobilization and facilitation of piloting, implementation and monitoring.
FREDA (Forest Resource Environment Development and Conservation Association)	Forest Resource Environment Development and Conservation Association is a non-political, non-profit and non-government organization in the forestry sector of Myanmar. It implements sustainable forest management projects including community forest, development of small farmers in the context of Climate Change and system for rice. FREDA has been engaged in a wide range of activities for rural development, planning and demonstration for community participation in reforestation and forest conservation especially in areas dominated by slash-and-burn agriculture, promotion of sustainable forest management, introduction of appropriate methodology for improved land use systems for rural community development, implementation of integrated watershed management activities for natural disaster preparedness and climate change

	adaption, restoration of degraded mangrove ecosystem in the delta of Myanmar, wildlife conservation with special focus on tiger, leopard and elephant, introduction of bio-gas production technology for village electrification, and wildlife products trade survey. It also supports to scholars in environmental science at M.Sc. and Ph.D. levels in partnership with donors and universities concerned. FREDA has cooperated with the forestry authorities in the formulation of a set of national Criteria and Indicators (C&I) for Sustainable Forest Management (SFM) in Myanmar. It has also contributed in the development of national initiatives to promote field assessment activities essential in the process of forest management certification. The projects are often implemented with the co-operation of the international NGOs overseas and in-country based and UN agencies.
Ecosystem Conservation and Community Development Initiative (ECCDI)	It is one of the lead organizations in restoration, conservation and management of ecosystems of natural resources and community development. The main objectives are i) To ensure sustainability of natural ecosystems and enhance national socio-economic development through environmental restoration and poverty alleviation ii) To guarantee a sustained environment through enrichment of biodiversity by conserving and improving natural ecosystems and etc.
Academic and Scientific Organizations	
Yezin Agricultural University (YAU)	YAU is the only university level of higher education in agriculture in Myanmar. Primary functions are teaching and training, conducting research and providing extension service to the public. Specific objectives are to produce highly qualified professionals needed for the development of the agriculture sector. It also provides technical trainings on modern method of agriculture for the farming communities including non-degree training program. YAU has 228 academic staff including 43 PhD degree holders, 70 Master Degree holders in agricultural sciences. YUA has university model research farm of about 102 acres. YAU has seven outreached campuses which are hosting the final year bachelor degree students for doing research on their specialization study. There are seven major academic departments, namely Department of Agronomy, Agricultural Botany, Agricultural Chemistry, Entomology and Zoology, Plant Pathology, Horticulture and Agricultural Economics. Agronomy and Agricultural Botany Departments actively engaged in research on climate smart agriculture and varietal improvement, including farmer participatory varietal selection. Collaboration potential for identification of improved, drought resistant varieties suited to the dry zone pilot site, in Mandalay Region.
International Rice Research Institute	Myanmar- IRRI collaboration began in late 1960s. Since then, rice breeding and varietal development programs have been conducted by the Rice Section of DAR up to the present. There were 80 rice varieties released by DAR, of which 12 varieties are widely grown on 56% of total rice sown areas. It has a representative office in Laputta, pilot site three.
University of Forestry	The UOF was established in 1992 and is located in Yezin. For the improvement of social forestry, sustainable forest management practices and timber harvesting by doing R&D in pilot sites. University of Forestry (UOF) is leading human resources development for forest and environmental conservation in academic and practical skills under MOECAF. There are two main division called planning and teaching in UOF. UOF have a good coordination with Germany, Japan, Korea, China Australia and Thailand for Master and PhD study programme. The

	university is involved in the project for the improvement of social forestry, sustainable forest management practices and timber harvesting by doing R&D in pilot sites.
Forest Research Institute	The FRI is providing technical information on all aspects of forestry and forest-based activities to increase the contribution to the development of forest rehabilitation, natural resources management and efficient utilization of timber.
Training and Research Development Division, Forest Department	Development of capacity on the staffs and public also related to sustainable forest management, agro-forestry, community forestry establishment, extension skill, forest rehabilitation and in service trainings. Moreover coordination with international expertise.
Local and Indigenous Communities	
Minority Groups	Several minority groups are situated in proposed project areas. These include member of the Kachin, Karen, Kayar, Chin, Mon, Rakhine, and Shan, etc. As Myanmar has a wide range of ethnic minorities, their representatives should be involved in the project, especially considering the fact that the pilot sites are in different area and should be adjusted. Moreover local association could be linked to the project in the pilot sites. This must concern not only ethnic minorities but also other groups, especially women.
Private Sector	
Farmers and Forest user groups	Will be key adopters of ICLM/CSA and SFM practices at the local level and key beneficiaries of training and technical assistance. This will include ethnic minority and tribal groups where possible.

1.5 Lessons learned from past and related work, including evaluations

This highly innovative GEF project represents the first effort in Myanmar where CC, SLM, and SFM concerns are being brought together to deliver integrated results on a landscape level. No previously implemented project could provide linear lessons. Regardless, the project design team worked hard to review a host of past and on-going projects to garner lessons to strengthen the proposed GEF endeavour. Moreover this project will benefit from the experience FAO has in Myanmar with its different activities, which many are related to sustainable cropland and forest management.

For instance, the project reviewed investments in participatory multiplication and distribution system of quality rice seed, in mangrove forest health in coastal areas, and improved water management in dry-land areas. Some of these programs were successful, but others were met with significant challenges due to issues related to scale. The programs were not always well-scaled to the existing and absorptive capacities of local communities. The proposed project will coordinate with on-going activities to ensure use of best practices and avoid duplication of effort.

The project designers scrutinized the Environmentally Sustainable Food Security Programme (ESFSP). Villages accepted that the grouping together of all fishers in a specific village had better benefits and consequences for livelihood development and empowerment led to the formation of the Village Fisheries Society (VFS) as the basic unit of freshwater fisheries co-management. The Regional Government endorsement process will enhance the partnership arrangement, communication and negotiations with stakeholders to ensure the sustainability of VFS. The new VFS allocation system, where the VFS has the purchasing right for the tender lots (TL), has worked with the requirement of the gear holder to pay a stow-net usage fee to the VFS. The stow-net fishers are the main beneficiaries of this change and have become more powerful in the village. Compliance [monitoring, surveillance, control and enforcement] are essential modalities, but given limited resources available, the VFS and Township Fisheries Officer need to work together. Capacity building of the government agencies is

required so that the VFS approach to co-management will continue and expand to other areas. A major effort must to support the District Fisheries Officers (DFO) and TFO can support the co-management process.

The GCP/MYA/005/EC, "Support for Agricultural and Natural Resource Management in Northern Rakhine State – Phase II" implemented between 2005 and 2007 highlights the challenges of Natural Resource Management in Myanmar. Challenges included a shortage of competent human resources, a lack of financial and physical access by farmers to the available inputs, difficulties in the development and transfer of appropriate, environmentally friendly and sustainable agrotechnology and the lack of a marketing system that guarantees a fair share of benefits for all the parties involved in the system.

A recent project on Mangrove illustrates FAO experiences on Forestry, working in collaboration with the MOECAF, but also in a National Forest Reserve (as in Natma Taung National pilot site one); TCP/MYA/3204, Sustainable Community-based Mangrove Management in Wunbaik Forest Reserve, implemented between April 2009 and December 2011. The main difficulty during the implementation of the project was travel to the site. Obstacles were largely the result of the distances between the forest reserve, lodgings and beneficiary villages. Non-Governmental Organizations (NGOs) in Myanmar were unable to implement scientific and participatory studies or to provide services within pre-agreed deadlines. The project therefore relied on individual consultants and experts. To help reverse the prioritization of paddy farming over the management of forests and natural resources, projects documenting the status of mangroves in the country are recommended. Assessment of resource utilization patterns would provide a foundation upon which to develop strategic management plans for conservation and rational utilization of mangroves. The project showed that success was largely based on the efforts of highly motivated village leaders and villagers. National consultants were easily able to provide guidance to locals on how to fulfil the necessary activities. Coordination between the different levels of local authority, from village to state level, should not hinder the dissemination of information and decision-making. Decisions made at local level should be communicated to more senior circles, while grass roots-level authorities should be empowered to implement conservation plans on the ground.

National REDD+ Readiness process of Myanmar (or phase 1 of a national REDD+ programme), which will be financed by the Government of Norway with the technical support of UN-REDD, RECOFTC and other organizations, and implemented by the MOECAF. In order for the project to verifiably achieve its objectives it will depend on the key components under the REDD+ Readiness process, including: i) Developing a national management structure for REDD+, ii) Establishment of stakeholder consultation processes; iii) Identification of REDD+ strategies and planning approaches; iv) Implementation framework for REDD+, including legal, institutional, capacity building and development of a system of safeguards; v) Establishment of a national reference level (RL) or reference emission level (REL) for REDD+ and vi) Development of a National Forest Monitoring system and Measurement, Reporting and Verification (MRV) system for REDD+. The progress of the project will be dependent to a large extent on the establishment of appropriate frame conditions that the readiness process will put in place. The project will complement the Readiness process by developing and piloting demonstration activities, which may then be scaled up to the national level during phase 2 of a national REDD+ programme. This "Readiness" project, which has yet to be finalized and funded, may very well become part of this GEF project's "baseline project" at the CEO endorsement stage.

The UN Development Programme's (UNDP) current and emerging portfolio of sustainable development and environment projects with the MOECAF. This includes a large Adaptation Fund (AF) project entitled Addressing Climate Change Risks on Water resources and Food Security in the Dry Zone of Myanmar and a small UNDP funded REDD+ initiative in Kachin State focusing increasing youth participation in SFM. This project will coordinate with MOECAF and UNDP on these projects plus other emerging UNDP initiatives going forward in order to build synergies and avoid duplication. Indeed, this coordination and communication has already begun; for example, FAO is member of the technical advisory group for AF project.

Lessons and good practice will be drawn from a range of existing work on the gender dimension, especially that of the UN Women/IFAD/WFP/FAO project entitled Accelerating Progress toward the Economic Empowerment of Rural Women. The UN Country Team in Myanmar jointly supports the Government across the four strategic priority areas as laid out in the UN Strategic Framework document, among the priority issues being agriculture development, addressing climate change, and enabling good governance. This UNCT framework will provide a valuable mechanism for coordination.

A complete list of baseline investment projects reviewed may be found in **Appendix 10**.

1.6 Links to national development goals, strategies, plans, policy and legislation, GEF/LDCF/SCCF and FAO's Strategic Objectives

A. Alignment national development goals and policies

The project is fully aligned with Myanmar's national development goals and policies. As a signatory to the Millennium Declaration, Myanmar is committed to the achievement of the Millennium Development Goals (MDGs). The government is working towards meeting the MDG 7 Goal of ensuring environmental sustainability by pro-actively integrating sustainability practices into the country's policies.

The *National Sustainable Development Strategy* (NSDS) prepared in 2009 provides a strategic long-term framework for sustainable development. Sustainable management of natural resources is one of three NSDS goals.

The *Fifth National Economic and Social Development Plan* (2011/12-2015/16) creates an overall vision for the country to become a peaceful, modern and developed nation. Goals include: To expand agriculture, livestock and fishery sectors in order to meet ever-increasing local demand and to promote exports; restore and expand forest area coverage; and, conserve natural resources and protect the environment.

The *National Strategy on Rural Development and Poverty Alleviation* (2011) focuses upon eight priority areas: 1) agriculture production; 2) livestock and fisheries production; 3) rural productivity and cottage industry; 4) micro savings and credit enterprises; 5) rural cooperatives; 6) rural socio economy; 7) rural renewable energy; and 8) environmental conservation.

B. Alignment with NAPA, NAPs, NBSAP, NIPs, NAMA

Table 6 Relevant international agreements ratified by Myanmar

Convention/Agreement	Signed
Convention on Biological Diversity (CBD)	1992
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	1997
United Nations Framework Convention on Climate Change (UNFCCC)	1992
Kyoto Protocol to the United Nations Framework Convention on Climate Change	1992
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2011
Convention to Wetlands of International Importance especially as Waterfowl Habitats ("the Ramsar Convention")	2005
World Heritage Convention on Nature and Culture Sites under UNESCO	1994
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and / or Desertification, Particularly in Africa, Paris, 1994 (UNCCD)	1994
International Tropical Timber Agreement (ITTA) 1995-2006	2006
ASEAN Agreement on Transboundary Haze Pollution	2002

United Nations Convention on the Law of the Sea (Montego Bay 1982)	1982
Vienna Convention for the Protection of the Ozone Layer, Vienna 1985	1993
Montreal Protocol on Substances that deplete the Ozone Layer, Montreal 1997	1994
Myanmar Agenda 21	1997
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2000
Stockholm Convention on Persistent Organic Pollutants	2001

Myanmar is a party to all three Rio Conventions. The country has developed a NAPA, NBSAP and NAP to coordinate national efforts to address climate change, biodiversity conservation and desertification.

The project supports and furthers many of the priority program areas under Myanmar Agenda 21 (1997). So too, will the project support and further key priorities expressed in The Forest Law (1992), which highlights environmental conservation and the participation of people in the conservation and utilization of forest resources. Myanmar ratified the UNFCCC on 13 August 2003 and it entered into force on 16 February 2005. This project supports CC mitigation priorities as expressed in the Initial National Communication to the UNFCCC (INC 2012) and its priority measures to reduce GHG emissions in the agriculture and livestock sectors and the land use change and forestry sector. A total of fifteen priority initiatives are presented in the INC in these sectors. This project will contribute to the aims of four directly related to rice cultivation and nutrient management, and four on forestry-related concepts for improving forest condition and extent. The project supports or complements some of the main objectives of the revised National Action Program on Climate Change (NAPCC 2011), including: increasing forest cover; improving the legal environment and amending the Forest Law to support SFM and protection; and introducing new environmental technologies and practices to reduce GHG emissions and to shift to less carbon emitting economy.

Myanmar acceded to the UN Convention to Combat Desertification in January 1997. This project supports many of the main program priorities and principles identified in the National Action Programme to Combat Desertification (2005) including the need for more locally driven SLM to address LD and prevent land degradation and desertification, as well as the need for more soil conservation programmes; and promotion of sustainable mountain farming and forest systems. The project supports the three priority goals of the National Sustainable Development Strategy (NSDS 2009), which includes conservation of natural resources and minimizing negative impacts due to human activities such as over exploitation, illegal logging, shifting cultivation, and ensuring the well-being of the people and eradication of poverty. Improved cropland management and productivity will be central to these priorities. The NSDS calls for the enactment of a national land use policy for SLM, something to which the project will contribute. This project supports two of the eight priority areas of work under the National Rural Development and Poverty Reduction Programme by developing sustainable agricultural and forest management and improving the capacity of the stakeholders to secure agricultural productivity as well as environmental sustainability.

The National Adaptation Plan of Action (NAPA), developed in 2012, identified three priority sectors for action; agriculture, forests, and early warning systems. Agriculture and forest sectors were again stressed as priorities in Myanmar's initial national communication to the UNFCCC, also in 2012.

C. Alignment with GEF focal area and/or LDCF/SCCF strategies

The project seeks synergies across the Land Degradation (LD) and Climate Change Mitigation (CCM) Focal Areas and is consistent with the SFM strategy of the GEF-5. The project addresses CCM-5: "Promote conservation and enhancement of carbon stocks" by enabling Myanmar to adopt good management practices in LULUCF including restoring and enhancing carbon stocks in forests and croplands. The project addresses LD-1 "Maintain or improve flow of agro-ecosystem services to sustaining the livelihoods of local communities" by strengthening the enabling environment among sectors (agriculture, environment, forestry) comprising agro-ecosystems in Myanmar, engineering a

paradigm shift from unsustainable crop and forestland practices leading to degradation to sustainable forest and cropland management. It will demonstrate and scale up innovative and proven participatory forest management practices which support community use rights and improve forest management practices to maintain natural forest cover and ecosystem services in dry-land habitats. The project has been designed in line with GEF Guidelines for SFM/REDD+ Mechanism. Myanmar is committed to creating the legal, regulatory, scientific and practical grounds for inclusion of its forests in international forest markets; the project creates capacities for the proliferation of good management practices pertinent to SFM and REDD. SFM incentive funding will help to establish a sound policy environment to recognize the value of forest ecosystem functions and reduce greenhouse gas (GHG) emissions from deforestation and forest degradation.

Focal Area objectives, expected outcomes and outputs summary

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs
CC-5: Promote conservation and enhancement of carbon stocks through sustainable management of land use land-use change and forestry.	5.1.Good management practices in LULUCF adopted both within the forest land and in the wider landscape.	Forests and non-forest lands under good management practices.
	5.2. Restoration and enhancement of carbon stocks in forests and non-forest lands, including peat land.	Forests and non-forest lands under good management practices.
	5.3. GHG emissions avoided and carbon sequestered.	Carbon stock monitoring systems established.
LD-3: Reduce pressures on natural resources from competing land uses in the wider landscape.	3.1 Enhanced cross sector enabling environment for integrated landscape management	Integrated land management plans developed and implemented
	3.2: Integrated landscape management practices adopted by local communities	Information on INRM technologies and good practice guidelines disseminated.
SFM/REDD-1 **Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services.**	Outcome 1.1: Enhanced enabling environment within the forest sector and across sectors.	Types and quantifies of services generated through SFM
	Outcome 1.2: Good management practices applied in existing forests.	Forest area (hectares) under sustainable management, separated by forest type.

D. Alignment with FAO Strategic Framework and Objectives

The project adheres to FAO's new Strategic Objectives, particularly SO-2: Increase production in agriculture in an economic, social, and environmentally sustainable manner. The project also fits the priority elements of the Country Programme Framework (CPF) outlining the main areas of cooperation and partnership between FAO and the Republic of the Union of Myanmar. In particular, the project supports Priority Outcomes: #1: Increased agricultural production; #3: Sustainable management of natural resources and the environment; #4: Human resource development and capacity building.

FAO will be responsible for technical support and overall management and financial supervision of project implementation through FAO's Myanmar office, led by the FAO Assistant Representative for Programs (a senior agriculture professional) with day-to-day supervision resting with the Programme

Officer for FAO-Myanmar. The primary executing partner will be the FD of Myanmar, which will enter a Letter of Agreement with FAO. FD will be responsible for day-to-day project coordination, execution of project activities and day-to-day monitoring of project progress. TCI is the lead technical unit on this project, coordinating project support and technical supervision across "the House" from FAO's forestry and natural resource management groups. The FAO RAP in Bangkok will provide critical technical support through its depth of expertise in forestry, REDD, and sustainable land use.

SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS

2.1 Project strategy

The project will support Myanmar to set in place the tools required to generate CC, SLM and SFM benefits across the productive landscape. The project will introduce participatory and integrated SFM, SLM, and CSA approaches. This will be achieved through four interlinked components designed to strengthen relevant policy and regulatory frameworks; generate replicable models for climate smart agriculture; generate replicable models for community-based forest management; and, set in place a program for capture, dissemination, and national uptake of best practices.

The GEF funded alternative will improve the sustainability of agriculture and forest use management through the demonstration and adoption of low-carbon technologies. The project will increase ecological integrity while enhancing the quality of life for rural communities.

This ecosystem management approach will include building the capacity required to generate necessary regulatory and planning tools. Stakeholders will be assisted to demonstrate integrated land use management planning. This ecosystem based planning approach will apply to both agriculture and forest lands. The project will support the development of a model program for climate smart agriculture. This CSA program will result in strengthened research and academic institutions, trained national extension officers, a farmer field school program to build farmer capacity, and best CSA practices being applied within three pilot zones. The project will set in place the tools required to establish community-based forest management. This management approach will promote forest integrity, maintain ecosystem services, and enhance community well-being. The project will set in place a system to monitor results, capture lessons, and upscale best practices.

The project is predicated upon creating long-term capacity to carry innovations forward. This will focus upon integrating SLM, SFM, and CSA principles and practices within the training programs of numerous training institutions associated with both the Ministry of Environmental Conservation and Forestry and the Ministry of Agriculture and Irrigation. Training will ensure vertical integration of best practices from national level policy makers to extension officers and ultimately on-the-ground resource users. This will insure that capacities set in place during project implementation endure post-project, evolve and improve over time, and are up-scaled nationally.

2.2 Project objective

The project objective is to build the capacity of farming and forestry stakeholders to mitigate climate change and improve land condition by adopting climate smart agriculture and sustainable forest management policies and practices.

2.3 Expected project outcomes

Outcome 1: ***Enabling institutional, policy and regulatory framework for SFM, CSA, and SLM resulting in approximately:***

- 14 million hectares of production forest with improved SFM
- 2 million hectares spreading across 6 districts benefiting from improved SLM
- 64,000 hectares of croplands under CSA

Outcome 2: ***Farmers adopt CSA/ICLM/SLM practices across wide areas resulting in approximately:***

- 40,000 hectares of rice under improved management avoiding emissions of 48,000 tCO2e per year.
- 20,000 hectares of annuals under improved management avoiding emissions of 62,000 tCO2e year
- 4,000 hectares of upland and dryzone degraded annual crop land changed to agroforestry with perennial crops, yielding 130,000 t CO2e year.

Outcome 3: ***Forest Department pilots improved multi-functional forest management in closed forestlands resulting in approximately:***

- 50,000 hectares of forestlands under improved multi-functional management providing
    - short-term benefits accruing 1,148,125 tCO2e & long-term years (6-20) accruing 11,481,250 tCO2e of avoided emissions (AE)
- 10,000 hectares of forest land with Forest user groups implementing SFM providing
    - 21,560tCO2e of AE & C storage accruing from 4,000 ha under improved SFM
    - 16,967 tCO2e accruing from 4,000 ha under improved SFM
    - 12,122 tCO2e of C storage yielded from 2,000 hectares of low productivity dryland agri-cultural land brought under a taungya teak agroforestry system

Outcome 4. ***Scaled-up and integrated SLM, CSA, and SFM practices resulting in:***

- 500,000 hectares of forestlands across Myanmar with improved land condition and carbon sequestration due to main-streamed SFM plans
- 40% Capacity Development Scorecard improved from baseline if app.18%
- 40 policy makers, 25 extension agents, 75 field staff; and 3,000 FUG members applying SLM/SFM practices

2.4 Project components and outputs

Component 1. Institutional, policy and regulatory frameworks strengthened to support SLM, CSA, and SFM

Component Budget: GEF (USD 963 566) Co-financing (USD 1 000 000)

This component's objective is to enable stakeholders to strengthen the regulatory and institutional frameworks needed to support SLM, CSA, and SFM. The component will directly address Barrier #1: Insufficient legal regulatory and institutional framework for sustainable forest and cropland management. Stakeholders will be assisted to design and implement a vastly improved regulatory framework that incorporates best international principles and practices.

By project close, an enabling framework will be established to fully support CSA, SFM, and SLM programming. The regulatory framework will reflect an integrated, ecosystem-based approach. This approach will be operational across large landscapes supporting the implementation of community-based forest management and climate smart agriculture. The framework will set in place componentry necessary to establish and demonstrate integrated natural resource planning for each of the pilot townships. Resource planning mechanisms will form the foundation for development of the project's CSA, SLM, and SFM interventions. Rigorous monitoring will inform associated decision-making. A cohort of forestry and agricultural specialists with significantly greater exposure and knowledge of best international principles and practices will actively maintain and adapt the improved framework. The framework will be field tested and improved through the efforts of Components 2 and 3. Lessons learned will be distributed via the activities and outputs of Component 4.

Sub-component 1. A. Comprehensive program to enable regulatory/institutional framework assessment, strengthening and capacity building

Sub- Component Outputs:	
Output 1.1	Package of CSA and SFM regulatory and policy modifications for cropland and forest management
Output 1.2	Updated national forestry master plan integrating SFM/REDD and community forestry (CF) elements
Output 1.3	Updated agricultural master plan integrating CSA
Output 1.4	Training in SFM, CSA, and SLM at national, state, and district levels

Capacity Building: The first step required is to provide opportunities for national decision-makers to build awareness regarding SLM, SFM, and CSA. During the project's first year a series of at least five two-day technical workshops will be implemented to build national and pilot site awareness of best SLM, SFM, and CSA approaches and practices. Training programs will cover regulatory and planning tools designed to support eco-system based land use planning and management, climate smart agriculture practices, community-based natural resource management, appropriately scaled eco-system based monitoring, and best sustainable land use management principles and practices. This formal training program will be designed for the benefit of national decision-makers within both the MOECAF and MoAI. Participants will be those persons most directly responsible for assessing opportunities for regulatory framework improvements. The objective will be to build the capacity of these stakeholders to better identify opportunities for making enabling environment improvements. Training will be based upon a brief training strategy to be completed within three months of project inception. The investment will facilitate knowledge exchange between international and national experts, drawing upon FAO and other international expertise.

Assessment: Once decision-maker awareness is enhanced, the project will facilitate completion of an enabling environment assessment and proposed improvements. Project and government staff will work with stakeholders at both the national and pilot site level to fully assess both the regulatory challenges and opportunities. This will include working closely with rural communities to come to a more full understanding of customs governing land use, forest use, shifting and permanent agriculture, mangrove management, etc. The teams will identify existing regulatory gaps, potential social and environmental impacts of various policy decisions, and prioritize regulatory framework needs.

Strategy: A policy improvement strategy for SLM, CSA, and SFM will be completed based upon assessment findings. This strategy will be finalized prior to the close of project year two. The strategy will detail specific steps required to improve the national and local enabling environment to support the realization of SLM, SFM, and CSA. The overall aim of the strategy will be to maintain and enhance ecological integrity in order to deliver critical ecosystem services, including climate change mitigation and adaptation. The strategy and subsequent project implementation support will reflect best international principles and practices related to inclusive, transparent, and informed decision-making. The strategy will detail and prioritize regulatory and institutional improvements for community-based forest management and climate smart agriculture. The strategy will detail financial mechanisms that may incentivize adoption of improved practices. The strategy will detail monitoring responsibilities and how best to evaluate performance based upon specific conservation targets and rigorous science. The strategy will detail how best to integrate resource management across broad landscapes, especially the three unique and "at risk" zones that are of primary project concern (uplands, lowland, and dry).

The strategy and subsequent project support effort will primarily focus upon the following topics:

- Community-based Forestry: The strategy will describe improvements required to support the establishment of operational community-based forestry. This will include addressing all barriers described above, e.g., clarity regarding transfer of use rights. The strategy will detail how current production based forest planning will be morph into more ecosystem based planning. The strategy will contain a full package of SFM guidance materials. This will include model forest use agreements, procedures for determination of use rights, implementation handbooks, policy guidelines, model agreements for the establishment of representative and accountable legal entities, etc. The strategy will propose refinements to the Community Forestry Instruction. The strategy will elaborate improvements to the 30-yr Forestry Master Plan and the Forest Law.

- Climate Smart Agriculture: The project will review and set in place specific policy recommendations to support climate smart agriculture. This will include review and recommended improvements to incentive policies, land use management and planning regimes, value added and organic certification processes, etc. The strategy will address agro-ecosystem specific approaches. For instance, how best to enhance shifting agricultural practices as a mechanism to promote achievement of SLM, SFM, and CC objectives. This may include supporting the codification of traditional land use management. Proposed improvements will detail how best to integrate CSA as a part of national and pilot site level land use and farm planning. This may include a description of how current production based planning will morph into land use and farm management planning that is much more agro-ecosystem based. Policy recommendations will propose protocols for climate change vulnerability assessment, monitoring, and response mechanisms. Recommendations will guide the creation of capacity support for the CSA Center and Farmer Field Schools described in Component 2. Recommendations will guide the integration of CSA within the agricultural master plan, research and development, capacity support for identification and adoption of CSA approaches, and Five-Year Short Term plans. This will include establishing targets for number of farmers adopting CSA practices and approaches.

- Land Use Planning: The recommendations will describe land use planning as a mechanism to catalyse on-the-ground adoption SFM, SLM, CSA. The strategy will promote land use planning as a means to transcend currently compartmentalized planning regimes with more holistic approaches. Such an ecosystem-based approach is required in order to reach the desired SFM, SLM, and CSA project results. This will ideally integrate ecosystem-based management across classified forests, unclassified forests, and agricultural lands. The planning process described and set in place with project support will be based upon locally-scaled monitoring protocols, include recommendations for monitoring of ecological functions and related indicators such as water quality and quantity, forest cover, and biodiversity. These indicators used to inform land use planning will be predicated upon achievement of SLM, CC, and SFM objectives.

- Monitoring: The strategy will recommend a monitoring program to support informed decision-making regarding SLM, CSA, and SFM. This monitoring program will be used to help national level decision-makers better understand the results – both successes and challenges – associated with on-going SLM, CSA, and SFM programming. Monitoring will be demonstrated using project activities at each pilot site. Initial results and lessons learned at the pilot site level will inform national upscaling.

The strategy will clearly detail steps required to adopt recommended policy improvements. The project will provide the government with technical support required to adopt and fully implement these recommendations, including legislative/regulatory drafting support. As necessary, these activities will be conducted independently with the MoAI and MOECAF.

Sub-component 1. B. Program for improved land use management and planning to inform institutional and regulatory improvements

Sub- Component Output(s):	
Output 1.5	Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA
Output 1.6	Pilot digital land-use mapping process in priority districts

Land Use Advisory Committees and Land Use Mapping: The project will support the design and implementation of township level land use plans and associated regulatory guidelines that support CSA, SLM, and SFM. This will be done through the newly created township Land Use Management Committees. These committees are chaired by the General Administrative Department with representation from key government departments such as forestry and agriculture. The project will provide the committees with the technical support required to generate land use options and recommendations that reflect ecosystem-based approaches and integrate SLM, SFM, and CSA principles. This organized township level planning will encourage synergies across key sectors such as agriculture, forestry, water, soil, and biodiversity conservation. The plans will provide guidance regarding the identification and monitoring of key natural resource indicators, e.g., mangroves, forests, water quality/quantity, etc. The project will provide technical support required to initiate community-based monitoring of indicator resources. The project will assist model land use advisory committees to develop and model improved mapping skills. This will include digital mapping to help inform the planning and monitoring process. Each township level plan will be completed prior to the close of project year three. The plans will be monitored and updated annually with project support. Prior to project close, lessons learned will be captured. A specific transition strategy will be completed to make certain each land use advisory committee is fully operational and self-sustaining. Lessons learned will also be used through Component 4 activity to promote district and national level replication.

The broad objective of each plan will be to maintain and restore ecosystem services in order to conserve biodiversity, augment climate change resilience, and improve food security. The model community-based plans will assist the authorities to strategically plan and regulate productive sector activities in order to maintain ecosystem functionality. The plans will be developed with and in reference to traditional management regimes. These plans will outline economic, social and ecological challenges related to key risk factors impacting the security of local livelihoods and the ecological integrity. These risk factors include unsustainable practices related to grazing, agriculture, fisheries, water management and forestry. The interface of climate change, biodiversity conservation, and rural livelihoods will be a critical element of each plan. The plans will serve as climate change mitigation, vulnerability assessments and adaptation strategies. The process will build the capacities needed for rural communities to identify emerging threats to the ecosystem services upon which they depend, generate effective management responses, and mobilize action in unison. The planning process will be designed to catalase community involvement and response. The output will serve as a training program for vulnerability assessment designed to build rural capacity to monitor, assess and respond to climate change risks. Activities will provide FFS stakeholders with the tools necessary to effectively design and implement integrated ecosystem based adaptation management and planning. Local level decision-makers, resource users and other stakeholders will receive the tools and training required to monitor the health and status of their ecosystem.

Each township level plan will incorporate and reflect agro-ecosystem and forest ecosystem plans completed under Components 2 and 3.

Component 2: Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems

Component Budget: GEF (USD 1 849 550), Co-financing (USD 4 946 500)

GEF investments will set in place the fundamental elements required to establish a national CSA program. GEF resources will complement government funded baseline programs and will directly address identified barrier 2: Minimal experience among key agriculture stakeholders in developing and implementing improved cropland management/climate smart agriculture practices on the ground**.**

Under current national policies, farmers can widely choose their own cropping methods without government interference. This requires a much different approach to incentivizing the adoption of CSA practices. At the same time, government policies are primarily focused and geared towards increasing production.

The GEF catalytic investment will help develop the national support network required to promote achievement of SLM, SFM and CC benefits. The regulatory and planning frameworks required to support CSA will be established under Component One. Under Component Two, the project will build capacities required to implement CSA practices.

Through Component Two, existing institutions responsible for agricultural training and research will have CSA elements added to their structures. A national CSA knowledge center will be established to help coordinate the identification and dissemination of best practices. A cohort of international and national experts will support the knowledge center. Extension officers responsible for farmer outreach will benefit from on-going CSA training support. A farmer field school model will be established at each of the pilot sites. Each FFS will fully integrate CSA and SLM principles and practices. Field level demonstrations implemented by FFS with project support will advance productivity, sequester carbon, reduce GHG emissions, and decrease risk exposure to climate change. Farmer Field School and extension models will establish conduits to move knowledge from and between government institutions and rural farmers. These project elements will work in concert to identify, demonstrate, and disseminate best practices. By project close, successful practices demonstrated at each pilot site will be ready for national level upscaling.

The GEF investment will promote a more agro-ecosystem based planning structure, particularly on the township level. This agro-ecosystem approach will be holistic, providing a more balanced perspective regarding agriculture's role in water, soil, biodiversity, climate, and social impacts. The agro-ecosystem based planning structure will provide the framework required to support identification and adoption of CSA practices. The project will set in place knowledge generation and dissemination mechanisms necessary to move knowledge from the theoretical to practical field level applications. This will be achieved through training programs, establishment of CSA knowledge centers linked to improved extension services and farmer field school programs. Finally, this comprehensive approach will result in the demonstration of improved practices delivering substantial and measurable climate change benefits.

Sub-component 2. A. Program for climate smart agriculture support services

Sub- Component Output(s):	
Output 2.1	CSA support program established within key institutions and demonstrated at priority agro-ecosystems
Output 2.2	Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices

CSA/SLM Implementation Strategy

Within six months of project approval, a brief strategy will be drafted to finely define the precise steps and time frame required to establish the national CSA support program. The strategy will detail the training program to be implemented during project implementation, support required to establish the national CSA center, and support required to establish the FFS model. The strategy will assure that best

practices established during project implementation are maintained after project close. This includes making certain human, institutional, and financial capacities exist to carry forward and enhance established programming. The strategy will be revisited annually to make certain the component is on-track to deliver required outputs. At least one year prior to project close, the implementation strategy will be amended to include a clear hand-over strategy describing how project implemented activity will be carried forward.

National CSA/SLM Capacity Building Program

The project will establish a national CSA/SLM training program. The project will work with three existing institutions to integrate CSA within their research and development programs: Agricultural University, Department of Agricultural Research, and Department of Agriculture. The national CSA training program will be applied to three levels: degree, in-service, and demonstration. The project will supply required international and national technical expertise to make each output operational.

Degree level support will take place primarily at the Agricultural University. Professional level MoAI staff receives training from this university. The project will work with this institution to establish at least one under-graduate level SLM/CSA methodology and survey course. By project close, this course will be a graduation requirement for all Agricultural University students. The project will support course development and initiation with necessary international and national expertise.

In-service (on-the-job) CSA/SLM training support will build the capacities of existing extension officers and government staff. The MoAI has a series of one-week in-service training programs based upon an annual selection process. Key staff are identified and assigned to in-service training programs. Specialists associated with DoA, DAR, CARTC, and the Agricultural University implement these training programs. The project will support the MoAI to design a specific in-service training module. This will be implemented for select staff over a period of 8 – 10 weeks each year. The one-week training module will be implemented with the support of national and international experts. It is envisioned that approximately 10 – 15 staff will participate in each of these one-week modules. The training sessions will be repeated annually, gradually adding lessons learned from project implementation activity to the core curriculum. By project close, this training module will be self-supporting and implemented fully by MoAI through one of the CSA Center affiliated institutions.

Extension agent training will be specific. This training will include setting in place a module for formal professional level training and in-service training. The extension agent capacity building program will be conducted in coordination with Agriculture University and Central Agriculture Research and Training Center (CARTC). Before being fielded, each extension officer must complete a multiple month training program through Central Agriculture Research and Training Center (CARTC) under the Department of Agriculture. The project will design a specific CSA/SLM training component for CARTC extension service officer training. Extension officers also receive periodic in-service training from either the CARTC or Department of Agricultural Research. The project will emplace a professional level CSA/SLM training component for extension officers at both of these in-service training facilities.

In-service extension officer training will focus upon extension officers located within the project's pilot areas. This in-service training will commence with the implementation of a one-week SLM/CSA overview training program for each pilot township. Lead by national and international experts, the one-wee survey coarse will introduce extension officers to the basic principles and practices associated with SLM and CSA. The one-week overview will also serve to build pilot site extension officer knowledge and support for project planned activities. In-service for pilot site extension officers will also involve working closely with project staff to create and implement the farmer field school models. Pilot-site extension officers will receive one-week refresher course work every year during project implementation. These courses will be jointly lead by representatives of the local extension officer core, Department of Agriculture Extension Division, local farmer members of established farmer field schools, national experts associated with the CSA Center, and international experts. This multi-tiered

approach will serve to build capacities and understanding across these several agencies. By project close, all extension officers within the pilot sites should be reasonably capable of fully supporting the Farmer Field Schools and associated CSA/SLM activity. In-service training lessons learned will be fully scrutinized and captured by project close for upscaling nationally.

Additional in-service training will also be initiated as necessary. For instance, the project will sponsor a series of annual national CSA/SLM workshops covering key topics and reporting on project progress. As well as reporting progress, each workshop will focus upon a different theme of CSA/SLM. These workshops will help to bridge communications between international and national institutions, fostering increased cooperation, shared learning and topic concern. By project close, the progress workshop will be shifted to become an annual CSA/SLM conference. This international conference will gather international and national expertise and concerned stakeholders to exchange opinions regarding CSA/SLM approaches. By project close, the CSA Center will organize and host this annual conference.

Demonstration of research results and best practices comprise the third CSA training tier. This will be conducted primarily through the model farming programs run by the Department of Agricultural Research. This will also be informed by the results of on-the-ground demonstrations implemented through the Farmer Field Schools. The project will assist the department to establish a functional program for the identification, demonstration, and dissemination of best CSA practices. This will be integrated within the Research Department's on-going program. Project support will aim to create an incubator for the generation and identification of best CSA practices. A consortium of established research and training institutes will trial CSA/SLM practices at existing research facilities. The project's research completed in cooperation with the DAR will prioritize and define specific activities to be initially capitalized with project financing. Examples of efforts to be undertaken include the use of effective micro-organisms, alternative wetting and drying, system of rice intensification, identification of drought resistant crop varieties, conservation tillage and improved water harvesting and retention techniques. By project close, the DAR will have an on-going and fully functional CSA research program associated with the Farmer Field School program. The CSA Center will be positioned to act as a nexus to help coordinate, monitor, distribute and facilitate the upscaling of successful practices. These practices will be monitored and success determined based upon indicators that include climate change mitigation, adaptation, and maintaining ecosystem services.

National CSA Center

The GEF investment will assist Myanmar to establish a national Center for CSA. The CSA Center will serve as a focal point for the advancement of knowledge, monitoring of impacts, and adoption of CSA/SLM practices. The CSA Center will be a government institution and housed within the Agricultural University located within ten kilometers of the capital city, Nay Pyi Taw. Nearly all MoAI staff graduate from the Agricultural University. The Department of Agriculture Research is located next to the Agricultural University.

The CSA Center will act the national CSA knowledge repository and catalyst. The Center will serve as a clearinghouse for best practices and foci for the development and exchange of information and knowledge. The Center will work closely with the Department of Agriculture to sustain and improve the function Farmer Field Schools. The Center will help to organize and facilitate the annual CSA/SLM conference. The Center will help coordinate CSA related activities at existing research institutions.

The CSA Center will establish a national CSA technical support group. This informal working group will represent a national cohort of Myanmar's best experts associated with CSA/SLM approaches. This will include representation from DoA extension services, Department of Agriculture Research, NGO's and donors, and University staff. This working group will be responsible for vetting training programs, advising on curriculum, increasing access to international expertise, and generating linkages and alignment between concerned institutions. This will include improving information sharing and research between institutions.

A critical function of the Center will be monitoring of CSA/SLM activity. The Center will monitor and catalog best practices nationally. This will be done in unison with other concerned agencies, particularly the Department of Agriculture. As the primary knowledge base, the Center will be well positioned to integrate best practices within degree, in-service, and demonstration level learning. This information will be used to promote wide application of SLM/CSA practices.

The GEF invest will assist with the initial establishment and operationalization of the CSA Center. Project funds will be used to facilitate the exchange of information and knowledge between international CSA/SLM experts and national experts. This will include drawing upon the vast knowledge base housed with FAO. The project will provide the technical support necessary to be certain the Center is capable of implementing associated responsibilities, particularly monitoring. The project will make certain that by project close, the CSA Center is fully functional with adequate staff and financing secured from government and/or other sources.

CSA/SLM Tool Box

The project will establish a number of technical materials designed to increase awareness and implementation of CSA/SLM practices. This will include CSA/SLM handbooks and training materials suitable for use by Farmer Field Schools and development of a CSA website. The CSA/SLM toolbox will capture in an extension officer training manual completed prior to the project's mid-term. The toolbox will be in a format suitable for trial use by extension officers, local government decision-makers, and farmer field schools. The toolbox will be reassessed and updated at least one year prior to project close. These efforts will be closely aligned with the project's Component 4 activities.

Township Level CSA/SLM Integrated Land Use Planning

The implementation of CSA/SLM practices requires land use planning that ultimately creates a vision to support the adoption of CSA/SLM across agro-ecosystems. These plans will form the agro-ecosystem component of Township level plans described under Component 1. The new Farm Land Law, as noted, creates a pathway for this planning system. However, there is little capacity to integrate CSA/SLM practices within this new system. The project will work with key stakeholders at each of the pilot sites to facilitate the adoption of township level land use planning systems that incorporate CSA/SLM principles and practices. Key participants include government institutions such as Department of General Administration (GA) in Regional & State Level and District & Township level, Village tract administrators in village level, Settlement and Land Record Department (SLRD), Department of Agriculture (DOA), as well as from Pilot District and Township level Land Use Advisory Committees.

These CSA/SLM approaches will assist to bridge the divide between forest and agricultural land management to encourage more ecosystem-based approaches. The agro-ecosystem management plans will focus upon a key element unique to each pilot zone. At the upland pilot site, the land use management plan will focus on integrating CSA/SLM within traditional shifting agriculture processes. At the dry zone, work will primarily focus upon water use improvements, conjunctive management, and grazing. At the delta, the land use planning process will support mangrove conservation and the development of organic rice production. The planning process will benefit from and be incorporated with the capacity building and knowledge building activities described in this component. The project will make certain that lessons learned are captured and upscale through Component 4 activity.

Sub-component 2. B. Program for farmer climate smart agriculture capacity building

Sub- Component Output(s):
Output 2.3 National farmer field school curriculum developed
Output 2.4 Model farmer field schools established in three priority agro-ecosystems
Output 2.5 Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems

National CSA Farmer Field School Curriculum

During project years 1 – 2, the project team will design an FFS curriculum and mobilize establishment of Farmer Field Schools at each of the pilot sites. The curriculum will be developed based upon international practices. The curriculum will integrate CSA, SLM, and biodiversity conservation specific issues and knowledge building. The curriculum will be developed based upon a needs assessment. The FFS development team will include project technical staff as well as representatives from: Department of Agriculture Extension Division, Agriculture University, Department of Agricultural Research. A draft curriculum will be completed prior to the close of project year two.

In Myanmar, several NGO's have attempted to implement Farmer Field School practices. In addition, UNDP has worked to development FFS in a variety of townships. The FFS curriculum development process undertaken by this project will look to developing FFS for example, utilize and apply FAO's substantial competencies in this field, and integrate best practices particularly related to achievement of CSA/SLM objectives.

The FFS program will augment and substantially improve current MoAI extension approaches. The FFS will integrate tools designed specifically to address climate change adaptation. The FFS will stress the use of low-cost ecosystem based approaches. Concepts will improve the farm family's quality of life. The training will assist rural communities to raise their levels of food security and potentially diversify their livelihood options. The curriculum will build farmer knowledge of practical adaptation and mitigation practices such as improved crop varieties. The curriculum will assist farmers to identify and apply opportunities to improve practices related to tillage and soil conservation, site-specific nutrient management, water use, fisheries and livestock management. The knowledge tool will help provide farmers with information regarding increased productivity and crop diversification to enhance food security and improved nutrition.

The model curriculum will assist farmers to generate livelihood options based upon climate smart practices. This may include identifying more cost-effective production methods and improve financial management, product marketing and business planning. Capacity building will support the development of improved business practices and acumen. This will include generating training programs for business planning, financial management, crop marketing, etc. designed to help growers improve the profitability of SLM/CSA grown commodities.

The FFS module will offer a conduit to bring the best international principles and practices related to CSA/SLM to improve on-the-ground action. The FFS curriculum will be innovative, combining a host of advanced learning methodologies. The curriculum will include on-the-ground practices and models with reference to initiatives funded under this component. Importantly, the curriculum will be available in languages that target stakeholders within each pilot site. The curriculum will be designed to incorporate local stakeholders who are illiterate. The curriculum will integrate formal and informal learning, stressing the facilitation of peer-to-peer or circle learning among field school participants (e.g., farmer demonstration competitions, field fairs, peer evaluations, etc.). The strategy will stress cooperation and peer-to-peer learning both within and between pilot areas. This may include the provision of multi-media tools such as tablets (e.g., I-Pad) that allow farmer field school participants to digitally record and share progress and lessons learned. These tools will facilitate the ability of FFS to access and share international and national sources of information.

The FFS women cohorts will benefit from a specific curriculum and approach targeting the needs of women. Project technical staff will generate and support the piloting of women specific FFS curriculum and learning. Each FFS' women cohort will provide a foundation for organizing knowledge building. The cohort approach will offer rural women opportunities to benefit from women-centered knowledge building and information exchange. FFS will enhance the agricultural skills of established FFS women cohorts. Gender specific FFS modules for women cohorts will be guided by opportunities for woman-

to-woman learning both within and between pilot sites. The FFS curriculum designed for women cohorts will address gender specific issues related to nutrition and food security, including food use and stability. Innovative knowledge tools will assist rural women to share traditional knowledge, increase their awareness of conservation issues, and reduce their vulnerability to climate change. For each FFS, at least one demonstration site established specifically for women, ideally on a farmstead owned and/or operated by a woman headed household. By project close, the FFS women cohort-training module will be fully integrated as a section within the FFS curriculum.

During project years 3 – 4, the curriculum will be rolled out and tested with the newly established FFS. Trial implementation will be closely monitored with both successes and challenges assessed by the curriculum development team and FFS participants. These results will be used to insure sustainability and broad-scale replication. The assessment will disaggregate results by gender to make certain impacts are unbiased.

At the close of project year 4, successful interventions will be used to improve and modify the curriculum. The curriculum will be updated to integrate lessons learned and reflect any necessary improvements. The revised curriculum will continue to be tested until project close. At least one year prior to project close, the FFS approach will again be assessed and updated and prepared for national upscaling.

Model Farmer Field Schools

The project will support the creation of Farmer Field Schools (FFS) at each of the project pilot sites. During project years one and two, project technical staff working with extension officers and other stakeholders will work to identify and recruit local farmers as FFS members. This period will also be used to work with emerging FFS to inform the development of the Farmer Field School curriculum. FFS are membership based and will become the primary mechanism for extension to efficiently provide information and CSA/SLM services to local farmers. FFS may also become a platform for improved marketing and cooperative financing of commodity production and sale. The FFS will be designed to build the capacity of rural communities to improve their knowledge and adoption of CSA and SLM. To address gender specific issues and challenges, each FFS will have a women cohort. The training will enhance the ability of local resource users to understand and maintain ecosystem services.

The FFS curriculum will be team-taught using a combination of international and national project staff, extension services, and local stakeholders. National and international experts will be engaged to serve as mentors. International and national technical experts will work closely at the field level support implementation of the FFS modules. These parties will inform and vet the curriculum developed for the FFS. By twinning international and national expertise with local community knowledge, the proposed responses will be tailored specifically to the local situation while benefitting from the integration of best international principles and practices.

Each FFS will meet throughout the year. They will likely every 1 – 2 months. Each FFS will likely be organized on the village level. The average size of an FFS will likely include participation of 15 – 20 households. This will be determined based upon the human resources available to the MoA extension services. The pilot sites have a total of less than 1,000 villages. Each extension officer is responsible for servicing approximately 10 - 20 villages. The project will commence with approximately ten (10) farmer field schools at each pilot site or an initiation total of 50 FFS. By project close, there should be more than 150 farmer field schools operationalized with a cohort of at least 50 government extension staff with sufficient knowledge and capacity to support the sustainable replication of the established FFS curriculum.

Early Adopter "On the Ground" CSA/SLM Demonstrations

Under the current agricultural approaches, there is very little incentive for local farmers to adopt CSA practices. The objective of the FFS model is to change this and facilitate on-the-ground advancement of CSA practices. These practices will sustain CSA, SLM and SFM and deliver measurable benefits.

Farmers participating in project established FFS will form the core of early adopters, demonstrating the short and long-term benefits of CSA/ICIM practices. Only FFS participants will be eligible to benefit from project supported farm level interventions. This will create an incentive for farmer participation in the capacity building aspects of FFS. Farmer field schools will incorporate well-known design methods such as community level demonstration plots. However, demonstration plots are generally not adequate to show large-scale climate change related benefits.

To achieve higher scale benefits, the project will provide venture capital financing to FFS members to implement and trial CSA practices. The project will support the trial implementation of such CSA interventions at each project pilot site. Unknown production methods are frequently viewed as a risk. In Myanmar, where food security margins are already very narrow, farmers can generally not afford to take such risks. The project will offer financial support to stakeholder rural households willing to trial or enhance CSA. This financial bridge will be specifically designed to limit farmer risk exposure when attempting to transition from "known" production methods to "CSA" production methods. To further limit these risks, the project will work with national crop financial institutions and insurers to encourage these private parties to provide affordable coverage for FFS participants willing to adopt CSA practices.

Each intervention will be approached as a community-wide capacity and knowledge-building tool, implemented and monitored by FFS participants. Implemented activities will be used to build the capacity of all FFS cohort members. This will include specific attention and allocations for women cohorts. The project will use these exercises as a training tool, including institutionalization of a strategic peer-to-peer learning approach. The selected projects will be highly scrutinized by project technical staff and cohort members. The project's technical team will closely monitor each party that receives project support to implement interventions.

During the project's first year of operation, a clear set of guidelines will be developed for the allocation and monitoring of funding to individual FFS. It is foreseen that funding will be provided annually to each FFS to support implementation of prioritized interventions. Prior to receiving funding, each FFS will be responsible for generating a proposal detailing how they intend to implement desired activities and manage funding. FFS proposals will be developed with the technical support of FFS instructors. The proposals will be submitted to the Project Board for final approval. The proposal will include a monitoring plan with specific indicators and targets. Each proposal will clearly explain the intended CSA and social benefits.

Financed interventions will be based upon priorities defined by local stakeholders with inputs from national and international experts. All interventions will be based upon the prioritized results of village level FFS plans. These farmer plans will be developed with technical support from project staff and extension services. The plans will function as both business plan and resource use plan, making certain that any intervention tested provides economic, social and environmental benefits. Each FFS will prioritize activities based upon the community FFS plan. These plans will be completed no later than the close of project year three. Trial interventions will be implemented during subsequent project years. The project budget will set aside approximately USD 450 000 to fund model demonstration interventions.

Each of the three pilot zones will model a system of CSA interventions unique to the individual agro-ecosystem type. Every FFS intervention financed by the project will maximize CC, SLM, and SFM benefits. In the highland, the FFS approaches will focus upon interventions linked to improving shifting agriculture practices. In the dry land areas, the FFS interventions will support improved water resource use. In the delta region, there is a very good opportunity for local farmers to produce organic, branded rice for international consumption. This is particularly the case for both Chinese and Thai markets. In this location, the FFS farmer plans will incentivize organic rice production linked to mangrove conservation. This may include project support for organizing brand marketing and sale linked to the generation of CC, SLM, and SFM benefits.

Model interventions will empower communities to assess and respond to pending climate change impacts in an effort to maintain ecosystem resilience. By project close, the model interventions should be delivering tactical responses to climate change needs and providing tangible examples of how conservation of ecosystem services results in social, economic, and environmental improvements. These interventions will serve as an incentive to promote conservation of both terrestrial and marine biodiversity.

Each activity will be closely monitored to determine if desired objectives are being met. Monitoring and technical support will be directly linked to the CSA Center. This "learning circle" will help align on-the-ground activity with the achievement of climate change mitigation and SLM objectives. The intervention proposals will describe how the FFS expects to monitor these benefits. Recipients will be charged with working with responsible extension officers to provide monthly progress/business reports to the FFS. Investment monitoring and evaluation will be linked to and success measured by improved conservation of ecosystem services. The proposal will describe how the FFS intends to report on results each year.

Funded activities will draw upon successful national and international principles and practices showing practical methods for maintaining and restoring ecosystem functionality. Investments will be designed to maintain, rather than alter, natural ecosystem function. Effort will focus upon making certain that water provisioning is sustained through natural means. The project may support placement of physical interventions that are designed to maintain and/or restore natural ecosystem functionality and the delivery of associated services. This will include efforts to decrease land and forest degradation, reduce erosion, siltation and maintain natural temperature regulation to increase resilience. Riparian degradation is a major contributor to the vulnerability of water provisioning ecosystem services impacting both terrestrial and marine ecosystems. Both upland and lowland riparian damage from cropping, forestry, livestock and fuel-wood collection is pervasive. Techniques will include assisted natural regeneration and enrichment planting of native vegetation along riparian areas and degraded lands to increase water retention and ground cover productivity. In upland areas, effort may include assistance with expanding and improving drought resistant cropping practices and community forest plots. Activity in the lowland areas will focus upon addressing threats to both terrestrial and marine areas caused by unsustainable practices, including mangrove harvest related to paddy management.

The project may employ innovative cropping and ecosystem friendly agricultural production techniques that will reduce land degradation, increase water security, improve climate change resilience and assist the achievement of biodiversity conservation objectives. Where gully erosion is taking place, the project may invest in construction of small-scale erosion controls to rehabilitate and maintain riparian habitat. This may include water harvesting with earthen weirs based upon successful international approaches designed to slow flow rates, retain soil, and restore/maintain natural flow and vegetation. The project may invest in physical improvements to existing small-scale water retention and/or management schemes that increase efficiency, reduce waste, and maintain natural in-stream flow required for biodiversity and human needs. Where ground water extraction is occurring, the project may work with stakeholders to improve extraction and application technologies while monitoring water use and increasing efficiency.

The component will enable farmers to demonstrate improvements on approximately 64,000 ha. On a per hectare basis, the emissions reduction potential for CSA is relatively small. Farmers in Myanmar do not generally use substantial amounts of fertilizers. However, with the rapid industrialization of agricultural practices noted in the baseline analysis, this will potentially change if early interventions are not taken. Substantial GEB will occur when proven practices are scaled-up and adopted by farmers across hundreds of thousands of hectares.

The project will support the annual completion of a handbook detailing all aspects and results of the physical investments. This will describe individual project approaches, costs, benefits, lessons and best

practices. The purpose will be to create a record that can be followed by other community members and communities. This handbook will be vetted by local participants and distributed broadly. The strategy will describe in detail how the project will capture and disseminate lessons learned. This will be linked with the monitoring and public awareness activities to be funded under Component 4.

Hand-over Strategy
At least one year prior to project close, the project will generate a hand-over strategy. This strategy will clearly detail how the Department of Agriculture Extension Division will take over full responsibility for the Farmer Field Schools model. This will include mechanisms for monitoring, updating, linkages to the CSA Center, and sustainable financing. By project close, FFS implementation will be fully functional, supported by MoAI and associated extension officers, and ready for broad-scale national replication.

Component 3. Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems

Component Budget: GEF (USD 2 485 700) Co-financing (USD 3 712 280)

This component's objective is to enable stakeholders to strengthen the capacity of MOECAF to implement SFM and deliver SLM and CC benefits. The component will directly address Barrier #3: Minimal experience among key forest stakeholders in developing and implementing Forest Department and Community Forest-driven SFM practices on the ground. This barrier will be removed through the application of two subcomponents, each designed to address challenges contributing to barrier. This will be achieved by assisting the MOECAF to accelerate the on-going process of SFM.

Under the first sub-component, the project will assist the Forest Department to shift current management practices from activities oriented towards production management to more ecosystem based management approaches. The project will assist the MOECAF to generate and operationalize forest management plans at the pilot site level demonstrating SFM principles and practices. All capacity building will be directed towards the generation of forest management plans that reflect ecosystem management principles. This will include setting in place and monitoring for the achievement indicators related to water quality/quantity, climate change mitigation, forest integrity, biodiversity, and social issues. Plans will create a firm foundation for the establishment of community-based forestry as a tool to promote SFM practices. This will include detailing parameters of forest use to be placed under community-management and specific terms for such use. By project close, Forest Departments at each of the pilot sites should be benefitting from the capacity to design, implement, and monitor ecosystem based management planning.

Under the second sub-component, the barriers inhibiting the application of community-based forestry will removed at each of the project's pilot sites. The regulatory framework generated under Component One will help establish a platform for this. Under Component Two, community-based forestry will be fully implemented and tested on the field level. This "new" community-based approach will differ from existing methods in many fundamental ways, including a clear regulatory environment that describes community use parameters, responsibilities, benefits and liabilities. In order to demonstrate the CC and SLM benefits across varying location, the project will focus upon three unique ecosystems (upland, lowland delta, dryzone). Community-managed forests will be fully operational in each of these locations by project close. These community-managed forests will be delivering substantial SLM and CC benefits. The models demonstrated by the project will be ready for national upscale and replication.

Sub-component 3. A. Program for improved forest planning

Sub- Component Output(s):	
Output 3.1	National ecosystem-based SFM capacity building program established

Output 3.2	Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives

SFM Planning Training:
The project will set in place a training program to build MOECAF capacity to generate and implement ecosystem-based forest planning. Prior to the close of project year one, a formal training strategy will be completed precisely describing the implementation process.

The project will establish a formal "in-service" ecosystem-based forest management training program for Forestry Staff. The Forest Department's "Training and Research Development Division" is responsible for in-service training. This takes place through the Central Forestry Development and Training Center located in Yangon. The project supported in-service training programs will be run through this center.

During the project's first year, a one-week "ecosystem based forest management" training seminar will be implemented for pilot site project participants. The objective of this intensive training will be to increase the awareness of pilot site project participants to generate ecosystem-base management plans. Initial training will be co-led by international and national experts. The initial training program will be conducted exclusively project pilot site stakeholders. Key stakeholders will include representation from the Planning and Statics Division, District Forest Officers and Forest Staff Officers from each pilot township.

The "in-service" ecosystem-based management seminar will be repeated annually during project implementation. These subsequent seminars will engage additional forest officers from outside of the project's pilot areas. As part of the training program, pilot site forest officers will be responsible to present and explain progress made on the development and implementation of both community-based forest initiatives and the platform ecosystem-based management plan. By project close, the seminar will be offered annually to Forest Department staff and lead by trainers from the Central Forestry Development and Training Center. By project close, approximately 100 township forest officers should have benefitted from participation in this annual training seminar.

Certificate level ecosystem-based forest management will be conducted through the Forestry School located near Mandalay. This 100+ year old school trains field level staff. This institution offers a one-year certificate program. The project will design and implement course-work for Forestry School students to increase awareness of ecosystem-based forest management principles. The objective of this course-work will be to make certain that future Forestry School graduates have the awareness required to support the formulation and implementation of community-based and ecosystem-based forest management practices. The original course-work will be designed and supported by project technical staff. By project close, this course will be fully operational and supported by the Forestry School.

Degree level ecosystem-based forest management training will be conducted through the University of Forestry. Nearly all officer level forest service employees are graduates of this institution located near Nay Pyi Taw. Forestry students attend this university for six years. The project will work with university staff to generate a specific, semester long, upper-level course focused upon ecosystem-based forest management and planning practices. The course work will include review of best international examples, including community-based forest management practices. The objective of this class will be to provide future foresters with the tools required to support the generation and implementation of ecosystem-based forest management planning and implementation. This undergraduate class will benefit from initial support from international level project technical staff. By project close, the undergraduate class should be fully operational and implemented by University staff.

SFM Planning Implementation Handbook:

To facilitate the generation of improved forest management planning, the project will support the creation of a SFM planning and implementation handbook. This handbook will be intended as a reference guide for the use of foresters at the Township level to assist them with the design and implementation of ecosystem-based forest management planning. The handbook will cover details regarding identification of ecosystem indicators, systems assessment, monitoring, climate change mitigation and adaptation assessment, best SLM practices, community-based forestry approaches, agro-ecosystem management and planning, etc. The handbook will assist foresters to better understand and quantify climate change mitigation benefits of on-the-ground forest management decisions. The handbook will include references to outlines for ecosystem-based plans, templates for community-based forest management agreements, references to key regulatory provisions, etc. The initial handbook will be completed prior to the close of project year two. The handbook will be updated at least one-year prior to project close, reflecting the results of on-going and completed project activity.

SFM Model Management Plans:
The project will support the creation, initial implementation, and revision/adaptation of SFM plan for three districts. These three pilot districts provide examples of unique ecosystem and challenges, including a mangrove based system, a dryland/acacia system, and upland teak/pine system. These plans will be suitable to inform the existing forest management plan and planning process. These plans will also be suitable to inform the township level land use planning process initiated under Component 1.

The objective of the "new" SFM plans will be the conservation of forest ecosystems. Success will be measured by a number of indicators, including climate change mitigation, biodiversity conservation, and sustainable land management. "Connectivity" and "forest diversity" will be key elements of each SFM plan. Although the plans will legally only cover forests within the Permanent Forest Estate, the plans will consider the effect and impact of uses within surrounding jurisdictions.

The plans will consider both ecological and social factors, including food security and reasonable use of forest and forest products. The SFM plans will create a foundation for the demonstration of much improved community-based forest initiatives. The plans will form the basis for community forest plans required to generate community-based forest initiatives. Done properly, communities located within or near potential forest areas suitable for community-based forestry activity will be able to use the SFM forest management plan for guidance. This will include descriptions of allowable forest use, community forest management responsibilities, and MOECAF oversight responsibilities.

During the project's first year, a full assessment will be conducted for each site. Working with project technical staff, the MOECAF will generate a template for the design of introductory SFM plans. Initial SFM plans will be developed for implementation no later than the close of project year two. These introductory SFM plan will allow the MOECAF and project staff to trial ecosystem-based planning and implementation methods. However, these initial plans will not be comprehensive and/or fully informed. The introductory plans will simply allow the project to move forward with community-based forest management, township level planning and other key activities. The plans will also provide guidance to responsible forest officers regarding monitoring and the generation of a data baseline for key ecosystem-health indicators. The costs of ecosystem-based planning can be high. It is imperative that by project end, the process is designed so that the MOECAF can realistically implement it in light of financial and human resource constraints. Therefore, initial implementation will also assist the MOECAF to determine opportunities to increase cost-efficiency and improve effectiveness associated with ecosystem-based planning.

During project implementation, a more comprehensive inventory of landscapes and forests covered by each SFM management plan will be conducted. This will be used as a capacity building exercise to help build ecosystem-based forest management knowledge. At least two-years prior to project close, each of the pilot site plans will be assessed and fully upgraded. Lessons learned will be captured. These lessons will be integrated within the planning handbook, training course-work, and other upscale and replication activity, including project Component 4.

Sub-component 3. B. Program for community-based forest conservation

Sub- Component Output(s):	
Output 3.3	Community based forestry implementation strategy and handbook completed
Output 3.4	Community-based forestry capacity building and technical support program operationalized
Output 3.5	Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems

Community-Based Forestry Support Unit
With the project's catalytic support, the MOECAF will establish a community-based forestry unit. This unit will be responsible for supporting the implementation of community-forestry initiatives. A major part of project effort will be focused upon building the operational capacity of this unit.

Community-Based Forestry Implementation Strategy and Handbook
Under Component One, the regulatory framework creating a barrier to the achievement of community-based forestry will be alleviated. The nation has also implemented a number of disparate community-base forest initiatives, some supported by international donors such as JICA and UNDP. Myanmar has the existing Community Forest Instruction from 1995. None of these initiatives to date provide full and clear implementation guidance. None incorporate best international CBNRM practice. The project will address this by generating a cohesive implementation strategy and guidelines designed to encourage the use of community-based forestry as an effective tool for addressing SFM, SLM, and CC.

Prior to the close of project year one, project technical staff will work with MOECAF to generate a clear set of community-based forestry guidelines. The guidelines will summarize the general purposes of community-based forestry, clearly detailing that this is a tool to advance conservation. The implementation strategy's guidelines will detail how community-based natural resource management will incentivize achievement of SLM, SFM, and CC targets. The guidelines will emphasize the use of community-based forestry as a mechanism to maintain connectivity, conserve biodiversity, and enhance forest integrity.

The guidelines will describe and include model language or "templates" for the generation of new community-based forestry initiatives and help to improve effectiveness of existing community-based forestry initiatives. Templates will cover issues related to community organization and transparent decision-making.

Templates for the establishment of representative and accountable legal entities will be included within the strategy. A representative legal entity is necessary to legitimize the transference of use rights from the government to communities. Without such a structure, it is very difficult for communities to enter into legally binding agreements. The structure also provides a vehicle for accountability. The structure describes membership requirements and responsibilities, including issues related to migration in/out of the community area. The structure offers a clear mechanism for decision-making, including the generation and dispersal of associated benefits and responsibilities. The model agreements will set forth special provisions for integration of women and other vulnerable sectors in decision-making processes.

Various types of legal entities may be used depending upon local conditions. In most cases, the entity formed will likely be a community-based cooperative or corporation. In nearly all cases, the community entity will be a non-profit committed to dispersing any funds generated for the benefit of the general community. This legal entity makes certain that communities with limited resource use rights for forest areas have a corporate structure that represents the community's interests.

Templates will be created that offer model language for the transfer of use rights from the Government to communities. This model language will help MOECAF and communities streamline and legitimize the process of use allocation. The model transfer agreement will describe the general obligations of both parties in terms of resource use and conservation. The transfer template will clearly detail responsibilities regarding enforcement, rights and responsibilities regarding dispute settlement, monitoring, reporting and other safeguards. This may include the establishment of monitoring priorities and protocols. All transfers of use rights will be linked to the improved forest management plans completed with project support. Most importantly, the transfer agreements will clearly detail what resource use rights are being transferred and how this transference complies with and upholds these improved forest management plans. This will insure that any resource use rights transferred are done in a way to help insure achievement of SLM, SFM, and CC objectives set out in the forest management plan.

Templates will be created to describe the sub-transfer or joint venture agreements for the use rights from the community to third parties, either from within or outside of the community. These templates will make certain that all decision-making is transparent, in the best interest of the community, and adheres to the principle requirements of the use rights transferred from the government to the community.

The implementation strategy will be used during project implementation to help guide community-based forestry action within each of the project's pilot sites. The strategy will also be used as a training tool to help build capacity and understanding for key stakeholders. The strategy will be updated and improved throughout the project implementation period based upon lessons learned. At least one year prior to project close, the strategy will be incorporated within a handbook for national upscaling and replication.

Community-Based Forestry Capacity Building Program

The project will generate the capacity required to support community-based forestry as an effective tool for achieving SFM, SLM, and CC targets. Certificate training implemented through School of Forestry, degree training at the University of Forestry, and "in-service" training through the Central Forestry Development and Training Center described above will fully incorporate community-based forestry as an element of SFM training.

The project will build a second training element for communities. This training element will be demonstrated within each of the pilot sites. This training will be scaled to village or village tract level. The project will initiate this training program using a combination of international/national project technical staff and township forest offices. The training will be focused upon assisting communities to build capacities required to fully implement community-based forestry practices as described in the implementation strategy and handbook. The training program will initially be introductory, working with interested stakeholders to simply introduce community-based forestry practices and potential. In pilot locations where community forest user groups are already established, the project will work directly with these communities to help them operationalize their endeavours based upon project supported improvements.

As communities come on line and gradually implement community-based forestry practices, the project will work to support increasingly sophisticated training programs. The project will design and implement a specific, field based training program for community-based forestry. This training program will be designed as a set of independent training components that may be delivered to individual communities using short (e.g., single-day) intensive instruction. Each of the components will cover a specific element of community-based forestry common to all community groups. The elements will be based upon the guidelines presented in the community-based forestry implementation strategy. These elements will like cover details such as operations, monitoring, benefit sharing, etc. The program will also cover technical aspects related to forest and ecosystem management.

These technical components will be designed to build community awareness and capacity to engage in natural resource monitoring, reforestation and afforestation, pest management, integrated water resource management, etc. These programs will be designed to assist communities to build their technical capacity. Training may cover aspects such as transparent decision-making, natural resource monitoring, generation and distribution of benefits, ecosystem-based land use planning, etc. The project will pay particular attention to the emplacement of peer-to-peer training, community exchanges, facilitating the ability of established community-based management organizations to exchange information and knowledge.

During the project's first year, a brief community capacity building strategy will be designed. This strategy will describe the basic methodology to be used. The strategy will specifically detail how the project intends to record and capture training activities implemented throughout the project period. The strategy will detail how the project will use the training demonstrations to build MOECAF capacity to fully adopt successful programs. By project close, a comprehensive capacity building and support program for community-based forestry should be fully operational and supported by the MOECAF. This program should be ready for national replication and upscaling.

Model Implementation

The ultimate objective of project activity will be to operationalize community-based forestry. This will be done in order to provide community benefits as an incentive to reach CC targets. Demonstrations will also deliver measurable benefits for SLM, SFM, and biodiversity conservation. Through the regulatory framework improvements, the project will facilitate the creation of community-based forestry initiatives supported by substantially strengthened regulatory, planning, and institutional structures. The project will also increase the knowledge capacity of communities and government agencies. The project will use these tools to assist communities in each of the pilot sites to implement community-based programming.

The project's three pilot sites are selected based upon their ability to demonstrate community-based forestry programming on three representative ecosystems: lowland mangrove, dry acacia, and upland pine/teak forests. In each of these sites, some progress has already been made with the limited development of community-based forestry practices. As feasible, the project will build upon and expand this baseline. The project will support the implementation of community-based forestry practices demonstrating reduced and reversed forest degradation, conversion of "unclassified" forest into community-based and conserved forest lands, reforestation, etc.

During the project's first year of operation, the project's technical team will work with MOECAF to identify and prioritize locations within each of the pilot sites for targeted community intervention. This process will include identifying high risk and high benefit locations suitable for demonstrating the maximization of CC benefits. During the project's second year of operation, the technical team will work directly with communities in each of these prioritized locations to establish and operationalize community-based forestry practices. This operationalization will benefit from the application of the project developed implementation guidelines. This will include viable agreements for the establishment of community-based organizations and the clear transfer of limited use rights and responsibilities from the government to these organizations.

Once community-based forestry organizations are in place, the project will provide necessary venture capital to assist these organizations to implement priority interventions. Funded interventions will be based upon the finalized SFM plans and the community-based forestry guidelines. Funded interventions will be scaled appropriately so that after initial project investment, communities are able to sustain implementation without project support. Interventions will be designed to incentivize conservation. They will be based upon the delivery of benefits to the communities equal to or greater than perceived social and economic costs.

During project design, a number of potential scenarios were identified during project design. Please see the appendix for a full description. It is foreseen that prior to project close, over a dozen community-based organizations will be delivering CC benefits on thousands of hectares of lands.

Tantamount to all demonstration activities will be the setting in place of a comprehensive monitoring program. Project technical experts, MOECAF staff, and stakeholder communities will jointly implement this program. The program will generate a comprehensive baseline so that progress and impact may be understood. The monitoring program will quantify CC benefits. The monitoring program will also measure social impacts and the programs effect on SLM, SFM, and biodiversity. The monitoring program will be rigorous and consistent. The results of this monitoring program will be made available at both the project mid-term and the project's final evaluation.

The project will fully capture all lessons for upscaling and replication via Component 4.

Component 4. SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally

Component Budget: GEF (USD 489 232), Co-financing (USD 3 067 707)

Under this component, GEF resources will support knowledge management, training, and scaling up of SLM/SFM and CSA/SLM practices. Stakeholders will record lessons learned and capture good practice. Cutting edge programs demonstrated with project support will be up-scaled and replicated. The project will enable stakeholders at national, regional and local level to have access to improved knowledge and data to manage sustainably croplands and forest resources by developing new mechanisms for effective learning, systematic long-term approaches to capacity building, and by disseminating information on best practices. Long term sustainable financing will be secured.

Sub-component 4. A.

Sub- Component Output(s):	
Output 4.1	Support program established for scaling-up SFM practices

This subcomponent will be directed towards upscaling best practices related to the implementation of SFM practices. GEF investments will be designed to assist the MOECAF and other stakeholders to monitor and capture results of project activity. Based upon a communications strategy to be completed prior to the close of project year one, the project technical staff will provide support for the generation of a series of public awareness and educational events. This may include the design of a community-based forestry website, arranging for site visits for key decision-makers to see first-hand project results, the facilitation of participating project stakeholders to meet with other national stakeholders to help them build confidence to adopt project improvements, etc. As much as possible, the project will make use of emerging opportunities for electronic media to be applied. This will include generating opportunities for community-based forestry engaged communities, field level forest officers and others to tell and show the stories of their success electronically.

A key aspect of this sub-component's investments will be to make certain pathways are created for SFM and ecosystem-based planning to be mainstreamed nationally into the forest management process. This will include using the awareness and educational materials developed through various project components, e.g., the ecosystem-based forestry management planning handbook. This will be designed so that positive impacts will potentially reverberate and support improved forest management on over 500,000 hectares of forest across Myanmar.

A key aspect of this sub-component will be to design and deliver a comprehensive strategy – including sustainable financing – for the adoption and upscaling of project emplaced initiatives. This strategy will be designed to facilitate the MOECAF to make a fact-based case for funding required to continue implementation and upscaling of project initiated activity. As necessary, this will be a collaborative funding approach.

Sub-component 4. B.

Sub- Component Output(s):	
Output 4.2	Support program established for scaling-up CSA practices

This subcomponent will be directed towards upscaling best practices related to the implementation of CSA practices. GEF investments will be designed to assist the MoAI and other stakeholders to monitor and capture results of project activity. Based upon a communications strategy to be completed prior to the close of project year one, the project technical staff will provide support for the generation of a series of public awareness and educational events. This may include the design of a CSA website, arranging for site visits for key decision-makers to see firsthand project results, the facilitation of participating project stakeholders to meet with other national stakeholders to help them build confidence to adopt project improvements, etc. As much as possible, the project will make use of emerging opportunities for electronic media to be applied, such as Agricultural University remote learning programs and the new "Farmer Channel" on national Myanmar television. This will include generating opportunities for Farmer Field School engaged communities, field level extension officers and others to tell and show the stories of their success electronically.

A key aspect of this sub-component's investments will be to make certain pathways are created for CSA to be mainstreamed nationally into broader agricultural programs. This will include using the awareness and educational materials developed through various project components, e.g., the Farmer Field School training manual and curriculum. This will be designed so that positive impacts will potentially reverberate and support improved agricultural management and deliver CC benefits on over 300,000 hectares across Myanmar.

A key aspect of this sub-component will be to design and deliver a comprehensive strategy – including sustainable financing – for the adoption and upscaling of project emplaced initiatives. This strategy will be designed to facilitate the MoAI to make a fact-based case for funding required to continue implementation and upscaling of project initiated activity. As necessary, this will be a collaborative funding approach.

2.5 Global Environmental Benefits – Adaptation Benefits

Baseline	Project Alternative	Global Benefits
Croplands		
Scenario 1: Sustainable rice intensification		
Inefficient water management; Continuously flooded paddy. ½ paddy straw burned, ½ fed to animals. 3x more urea used than in alternative & not site-specific; low organic matter return. Shorter fallow periods w/no crop rotation w/ legumes leads to soil degradation, increased emissions,	Improved water management; Intermittently flooded paddy. ½ paddy straw incorporated into field; ½ used as animal feed. Deep placement of granules and site specific nutrient management (1/3 of baseline). Use of short duration and improved seed varieties;	Avoided emissions (sink): 1.2 tCO_2e/ha/ yr @ 20,000 ha in Shan State and 20,000 ha in Coastal area; 40,000 ha X 1.2 tCO_2e/year/ha @ 4 years = 192,000 tCO_2e for project lifespan. 40,000 ha X 1.2 tCO_2e/year/ha @ 15 years = 720,000 tCO_2e for 15 year post project.

and reduced soil organic matter (SOM), i.e. carbon stored in soil. *Carbon fluxes without project: 5.9 tCO_2eq /ha/year emissions (source).*	Crop rotation using legumes increases SOM; reduces fertilizer use. Carbon fluxes with project: 4.7 *tCO_2eq/ha/year emissions (source).*	Total avoided emissions: 912,000 tCO2e. *Carbon calculations done using FAO EX-ACT Tool.
Scenario 2: Improved Annuals		
Tenure insecurity disincentive for sustainable use. Burning crop residues; Frequent tillage. Mono-cropping. Exposed hill tops planted in annuals prone to erosion. No water harvesting/ collection measures. *Carbon fluxes without project: .63 tCO_2eq /h/year emissions (source).*	Land use planning and tenure system enhances local tenure security; Compost of crop residues; Minimum/no tillage, Crop rotation/diversification, and mixed cropping; improved nutrient management More perennial/fruit trees on hill tops instead of erosion-prone annual crops. Reduce soil erosion via soil-water conservation, and contour farming. Improved crop varieties more resistant to drought. *Carbon fluxes with project:* 2.42 *tCO_2eq/ha/year emissions (sink).*	Avoided emissions (sink): 3.1 *tCO_2eq/ha/year* Assuming 10,000 ha in Shan State & 10,000 ha in Dry Zone (Magway Region): 20,000 ha X 3.1 tCO_2e/ha/year = 62,000 tCO_2/year X 4 years = 248,000 tCO_2e over life of project. 20,000 ha X 3.1 tCO_2e/ha/year = 62,000 tCO_2/year X 15 years = 930,000 tCO_2e for 15 year post project. Total sequestration: 1,178,000 tCO_2e.
Scenario 3: Land-use change to perennials		
No soil conservation measures Unsustainable cropland management practices in erosion prone areas. Minimal soil cover. Baseline source/sink = 0 Very few perennial crops Agroforestry not widely practiced Trees not integrated in the landscape *Carbon fluxes without project: 0 tCO_2eq /h/year emissions (source).*	Agroforestry with annuals and perennials. Agroforestry with annual cropping to increase soil fertility, water retention, and to decrease soil erosion Integrate multi species tree nurseries to ensure seedlings and seeds are available Integrated trees in landscape for C sequestration and multi-functionality: fodder, fuel, construction materials, biodiversity, and environmental conservation. Perennial cropping of suitable trees/shrubs with market value e.g. spices, fruit trees *Carbon fluxes with project:* 32.47 *tCO_2eq/ha/year sequestration (sink).*	Sequestration (sink): 32.5 *tCO_2eq/ha/ year* Assuming 2,000 ha in Shan State & 2,000 ha in Dry Zone (Magway Region): 4,000 ha X 32.5 tCO_2e/ha/year = 130,000 tCO_2/year X 4 years = 520,000 tCO_2e over life of project. 4,000 ha X 32.5 tCO_2e/ha/year = 130,000 tCO_2/year X 15 years = 1,950,000 tCO_2e for 15 year post project. Total sequestration: 2,470,000 tCO_2e. LD benefit across three scenarios above: *64,000 ha croplands under effective land use management with vegetative cover maintained or increased.*
Forests		
Scenario 1: Inappropriate management by the FD		
Non-project scenario is unsustainable production forest management in 50,000 ha of FD-managed forest, average density 80 m^3/ha, average net degradation of 5m^3/ha /yr. Top-down timber production-oriented forest management	*Project scenario* is management under the MSS with 0 m^3/ha net gain/loss by year 4 of the project. Degradation will be halted and a balance between extraction and recuperation will be maintained.	1) Improved multi-functional SFM by FD across 50,000 ha of closed forest with average density of 80m^3/ha, currently logged unsustainably at the rate of 5m^3/ha/year yields short-term and long-term global benefits in the form of avoided emissions (AE):

discounts SFM principles, excludes local uses. Inadequate capacity to plan and implement SFM. Main drivers are: - Technical deficiencies in FM – unsustainable timber extraction - Damage to ecosystem from careless extraction methods - Unplanned extraction of forest products to meet local needs - Insufficient resources and infrastructure for forest protection - Lack of local stake in forest management strategy - Insufficient technical resources for forestry training institutions - Lack of capacity in multi-purpose forest management planning	Improved SFM-based management planning in FD-managed "closed forest" lands. Capacity building in MSS and other SFM techniques to FD employees in the field. Forest inventory capacity building and new inventories carried out in target areas. Improved SFM strategies developed and implemented in target areas. Reduced Impact Logging (RIL) strategy development, capacity building and implementation Regular forest resources needs assessment of local communities and incorporation into production forest management planning Incorporate local usufruct rights to forest products into ongoing reforms of land tenure and forest policy Local feedback system for forest manage-ment planning, grievance mechanism at DFO level to sanction nonconformity with agreed management plans	Short-term benefits accruing project years 3-5: 313,125 tC or 1,148,125 $tCO2_e$. Note: assumes benefits begin accruing in year 3. Long-term: years 6-20 (post-project): 3,131,250 tC or 11,481,250 $tCO2_e$ 2) Improved SFM management across 13,444,000 ha of forest over the long-term.
Scenario 2: Community forests: Reduced Degradation		
Unplanned fuel wood harvest and overgrazing by local communities degrades forests; FUGs have no timber rights and limited rights to forest products from CF. SFM not tied to incentives for FUGs to implement SFM. Encroachment/conversion of natural forest areas to farmland and plantations (upland) due to unsustainable extraction of timber, minor forest products and shifting cultivation. Forest ecosystem services not quantified or valued.	Community forest management plans allow for sustainable offtake of fuel wood, fodder. Partnership between FD & FUGs enable forest conservation. Socially inclusive FUGs formed and supported by a gender and pro-poor approach and support for equity. Benefit sharing incentives for FUGs Actual community forest management plans documented and operational. Regular annual monitoring of forest management interventions in 8,000 ha of community managed forest and measurement of social and environmental impacts of these activities, and the change in biomass and forest carbon pools.	3) Improved community-based SFM across 4,000 ha reduces degradation (AE) and increases C sequestration. - 4,000 ha of degraded closed forest, with average density of 30 m^3/ha, currently degraded at the rate of 2m^3/ha/yr, to be brought under sustainable community forest management, leading to restoration of 1m^3/ha/yr by year 4, and 80m^3/ha in the long term. Short-term benefits accruing project years 4-5: AE: 5,010 tC or 18,370 tCO_2e C storage: 870 tC or 3,190 tCO_2e Note: assumes project effects (AE) begin year 4 and end at year 5 (project end). Long-term: years 6-20 (post-project): AE: 98,530 tC or 361,270 tCO_2e; C storage: 6,525 tC or 23,925 tCO_2e
Scenario 3: Community forests: Reduced Deforestation		
Unclassed forests under the administration of MOAI are converted to agricultural land	Community forest management plans allow for sustainable extraction of	Improved community-based SFM across 4,000 hectares reduces deforestation (avoided emissions) and increases C sequestration.

No cooperation between MOAI and FD in the management of Unclassed Forest Land Unmanaged, unsustainable extraction of forest products by local communities Unplanned encroachment by local communities and conversion of Unclassed Forests to agricultural land No land tenure or usufruct rights of local communities to Unclassed Forest land	fuel wood, fodder, timber and other forest products Partnership between MOAI, FD & communities enables forest conservation. Socially inclusive community forest users' groups formed and supported by a gender and pro-poor approach and support for equity. Actual community forest management plans developed, documented and operational. Regular annual monitoring of forest management interventions in 4,000 ha of community managed forest and measurement of social and environmental impacts of these activities, and the change in biomass and forest carbon pools.	- 4,000 ha of unclassed degraded closed forest, with average density of 30 m^3/ha, currently under threat of conversion to agriculture, to be brought under sustainable community forest management, leading to restoration of 1m^3/ha/yr by year 4, and 80m^3/ha in the long term. Short-term benefits accruing project years 4-5: AE: 3,758 tC or 13,777 tCO_2e C storage: 870 tC or 3,190 tCO_2e Note: assumes project effects (AE) begin year 4 and end at year 6 (project termination). Long-term: years 6-20 (post-project): AE: 73,898 tC or 270,910 tCO_2e; C storage: 6,525 tC or 23,925 tCO_2e
Scenario 4: Community forest plantations		
Limited implementation of traditional taungya system.	Improved sustainability of of taungya forest systems	Sequestration of carbon through 2,000 ha of forest under sustainable taungya system. Short-term C storage benefits accruing project years 3-5: 3,306 tC or 12,122 tCO_2e Long-term: years 6-20 (post-project):37,193 tC or 136,372 tCO_2e

2.6 Cost effectiveness (alternative strategies and methodologies considered)

During project design, several alternative scenarios were considered from the point of view of cost-effectiveness. These included extensive purchase of hardware and other tactical equipment, construction of major facilities for administration and agriculture and expensive international training programs. Stakeholders eventually abandoned these options after carefully considering conservation priorities relevant to a limited budget. In the end, the highly precise and, therefore, cost-effective investment rested on a number of principles, each integrated within the activities and expenditures of this proposed project. The relatively small investment is targeted to catalyze a substantial course change. The result is a relatively small amount of financing potentially will leverage the long-term conservation of an immense landscape and associated global benefits. Paramount was the desire to build the regulatory, management and financial capacity required for Myanmar to independently maintain effective conservation efforts. For instance, the project's limited investment will help to create capacity and decision-making pathways that enable local governments to use revenues to make pro-conservation investments rather than ill-advised and unsustainable short-term investments. This catalytic effect coupled with the objective of sustainability makes the GEF investment highly cost-effective.

2.7 Innovativeness

This project is highly innovative. With a relatively small amount of financing, this project will catalyse a whole new way of doing business. The project will for the first time establish an integrated approach to SLM, SFM and CSA. Using exiting training institutions, the project will set in place national level training programs that will teach new and existing agricultural and forestry professionals cutting-edge management techniques related to SLM, CC, and CSA. This will not be "one off" training. The project will actually embed within these institutions courses and practices that will become core parts of each institution's framework. The project will set in place learning loops providing opportunities for national level programs to be informed by the successes and challenges of on-the-ground conservation activities. These same loops will generate pathways for the identification of best practices and the effective distribution these practices to forest and agriculture stakeholders nationally. The project will for the first time provide a basis for more holistic and ecosystem based management, better aligning productive landscape management objectives and monitoring both on the pilot site level and nationally. Nearly every activity undertaken by this project represents innovation and remarkable conservation opportunity.

SECTION 3 – FEASIBILITY

3.1 Environmental impact assessment

The project and the GEF resources invested are expected to have positive impacts on the sustainability of agricultural and forest resources, improve the integrity of ecosystems, and result in tangible environmental benefits including biodiversity conservation, sustainable land management, and climate change mitigation and adaptation. Based on the project objective, outcomes and outputs no adverse environmental or social impacts are likely and it conforms to FAO's pre-approved list of projects excluded from a detailed environmental assessment.

3.2 Risk Management

3.2.1 Risks and mitigation measures

This project presents moderate risks in an overall atmosphere of increased openness and optimism for change. It will build on a sound foundation and established approach of community-based forest management and a trend to increase local control of farmers over what they plant and how they manage their fields. A number of potential risks have been considered:

Table 8 : Risks, ratings and their mitigation measures

Risk	Rating	Mitigation measures
Political pressure may continue or increase to log forests at unsustainable rates going forward, maintaining or increasing forest degradation rates.	Medium	The project design emphasizes improving governance, particularly local participation and enhancing transparency, in forest management. The project will also work with partners such as UN-REDD to highlight the benefits Myanmar may have from improved and enhanced SFM. Trends in Myanmar for teak is to move more and more to plantation production, which may reduce pressure to log closed forest unsustainably.
The capacity at local FUG level to support SFM is just emerging and may be difficult to operationalize effectively.	Medium	The project will apply a systematic capacity building program for FUGs that will be supported first by strengthened tenure for FUG work and secondly by new partnerships among Government, civil society, and the international development community to initiative and sustain FUG capacity building.
Increased frequency or regularity of temperature extremes caused by CC may trigger shifts and movement in forest types across agro-ecosystems and/or disease and insect infestations.	Uncertain	The project will instill an approach to SFM that is underlain by fundamental scientific principles and participatory methods and mechanisms that will enable stakeholders to modify SFM approaches as needed. Local level monitoring is also a key part of the project's work, which will enable stakeholders to apply adaptive management in response to changes over time. Well-managed forest stands will also be healthier and more resilient to climate change. And finally, a more flexible land use policy approach to "agriculture" and "forest" land will only help stakeholders respond to climate driven shifts.
Increased frequency, or regularity of temperature extremes and changing rainfall patterns caused by climate change may necessitate changes in cropping pattern.	Impact: 3 Probability: 3	The project design encourages crop diversification, thus reducing dependency on a single crop and introduces more mixed cropping systems, reducing vulnerability to single crop failure. Participatory varietal selection helps ensure selection of crop to fit local conditions and encourages farmers to take an active role in varietal selection and maintenance, which allows for cultivation of range of different varieties, potentially suited to different conditions.

Increased frequency, or regularity of temperature extremes and changing rainfall patterns caused by climate change may trigger disease, and/ or pest infestations in crops.	Impact: 4 Probability: 2	The threat of disease and pest attack is always present. Linking farmers together through farmer field schools enables faster identification of emerging problems and helps provide farmers with knowledge and links for accessing assistance.
There may not be sufficient incentive for communities to form and sustain FUGs.	Medium	The project will be designed to build on the positive momentum in Myanmar for change, particularly with respect to strengthening land tenure security and the community forestry policies and incentives in order to encourage local stakeholders to form FUGs and to practice SFM. This will include changes that will allow FUGs to benefit from commercially valuable timber on CF lands.
Government financing constraints may limit investments in SFM, and indeed place more pressure on forest resources.	Medium	The project will be designed to uncover and secure the full value of the types of services from healthy forest ecosystems and sustainable forest management, both from ecosystem services perspective and from the REDD+ perspective, shedding new light on the benefits of SFM.
Government financing constraints may limit investment in SLM and extension services may be under resourced to implement the project.	Impact:5 Probability: 3	The project is designed to include NGOs (both international and national) as implementing agencies alongside government agencies, which will enhance capacity for implementation as well as drawing on the considerable experience already present in both the government and non-government sectors in SLM activities.

3.2.2 Fiduciary risk analysis and mitigation measures (only for NEX projects)

A. Macro analysis

(not applicable)

B. Micro analysis

(not applicable)

C. Action plan for capacity strengthening of Executing Partner if needed

(not applicable)

SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 Institutional Arrangements

a. *General institutional context and responsibilities*

At the request of the Government of Myanmar, the project will be executed by FAO in close consultation with MOECAF and MoAI. A national project steering committee will be established for the coordination of project activities. The two lead executing partners are the MOECAF and the MoAI.

The project will be launched by a well-publicized multi-stakeholder inception workshop. This workshop will provide an opportunity to provide all stakeholders with updated information on the project, as well as a basis for further consultation during the project's implementation. The workshop will be basis for generation and confirmation of the project's multi-year work plan.

b. *Coordination with other ongoing and planned related activities*

The proposed project will coordinate with and through a range of relevant initiatives and groups in Myanmar. The donor situation in Myanmar is very dynamic. The nation is at the cusp of seeing a substantial increase of highly needed donor aid. Please see the annex for a complete listing of current and planned investments. This project - coordinated through FAO is well situated to help build coordination of these investments. In addition, several "Working Groups" exist in Myanmar to institutionalize greater cohesion between donor and government activities. These working groups are platforms for stakeholder participation and will be used to help this project avoid duplication and build synergies. These working groups were engaged during project design and will be regularly informed during project implementation. This will include constantly seeking out ways to maximize project impact through greater coordination as well as capture/upscale of best practices.

- The *Food Security Working Group (FSWG)* is a member-based network of approximately 53 non-governmental organizations, community based organizations and individuals addressing food security in Myanmar. The group directly engages with members to build their knowledge and skills on food security. The intent is to mobilize the collective capacities of the network to identify and formulate issues for research, dialogue and policy advocacy that will benefit the lives of vulnerable communities in Myanmar. The FSWG has a dedicated "Land Core Group".

- The *Myanmar Environment Rehabilitation-conservation Network (MERN)* was established to promote networking among local environmental NGOs working on the rehabilitation and conservation of mangrove resources and other critical eco-systems important for the livelihoods, food security and resilience to natural disasters. MERN has 16 member organizations.

- The *Environmental Thematic Working Group (ETWG)* was facilitated by UNDP and established in May 2009. The ETWG has not convened since July 2012 and is currently considered defunct by several national NGOs. It comprises government departments, I/LNGOs, academic institutions, UN agencies, private companies, bilateral and multilateral aid and development agencies, embassies and media organizations. The group is chaired and co-chaired by UNDP and FAO. This current coordination mechanism will remain until a new and formal mechanism is established. The FD is intended to be the focal government agency for this new Thematic Working Group, which was envisaged to play a major coordination role in the sector.

c. Coordination with Other GEF Financed Initiatives

Summary of GEF projects in Myanmar

Project title	Principal donor/ agency	Dates	Budget	Project objectives and Primary activities	Project Coordination Measures
Preparation of National Adaptation Programme of Action (NAPA)	UNEP	Approved in 2008	USD 200 000 from GEF, USD 30 000 from co-financing	NAPA development	The NAPA was used to help define the proposed project activities
Adapting Community Forestry Landscapes and Associated Community Livelihoods to a Changing Climate, in Particular an Increase in the Frequency and Intensity of Extreme Weather Events	UNEP	Approved in 2013	USD 5 087 500 from GEF, USD 19 211 000 From co-financing	To increase the resilience of Community Forestry and associated local community livelihoods to climate change-induced risks in the Central Dry Zone, Rakhine Coastal State and Ayeyarwady Region.	This proposed project will work closely with this UNEP program also run through Ministry of Environmental Conservation and Forestry (MOECAF)/Environment Conservation Department (ECD), and Forest Department (FD), Ministry of Transport(MoT)/ Department of Meteorology and Hydrology (DMH)
Improvement of Industrial Energy Efficiency	UNIDO	Approved in 2013	USD 2 830 000 From GEF, USD 13 800 000 From Co-financing	To promote sustained GHG emissions reduction in the Myanmar industry by improvement of policy and regulatory frameworks and institutional capacity building for industrial EE and implementation of energy management system, based on ISO 50001, EnMS and optimization of energy systems in industry.	Ministry of Industry, Ministry of Environment Conservation and Forestry, Ministry of Energy etc.
Enabling Activities to Facilitate early Action on the Implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Myanmar	UNIDO	Approved in 2013	USD 500 000 from GEF, USD 500 000 from co-financing	The overall objective of the proposed Enabling Activities (EA) is to strengthen national capacity and capability to prepare a National Implementation Plan (NIP) for the management of POPs with a basic and essential level of information to enable policy and strategic decisions to meet the	Ministry of Environmental Conservation and Forestry (MOECAF)

				requirements of the Stockholm Convention.	
Strengthening Sustainability of Protected Area Management	UNDP	Approved in 2013	USD 6 127 850 from GEF USD 17 896 300 from co-financing	Strengthen the terrestrial system of national protected areas for biodiversity conservation through enhanced representation, management effectiveness, monitoring, enforcement and financing	Projects will be aligned, particular at the upland pilot site. The project is run through the Ministry of Environmental Conservation and Forestry (MOECAF), Wildlife Conservation Society (WCS)
Development of the National Biodiversity Strategy and Action Plan (NBSAP)	UNEP	Approved in 2008	USD 200 000 from GEF, USD 50 000 from co-financing	The goal of the project is to enable Myanmar to better meet its immediate obligations under the Convention on Biological Diversity, especially in relation to Article 6: General measures for conservation and sustainable use.	The NBSAP helped inform this proposed investment.
Summary of GEF regional projects including Myanmar					
Building Capacity for Regionally Harmonized National Processes for Implementing CBD Provisions on Access to Genetic Resources and Sharing of Benefits	UNEP	Approved in 2011	USD 750 000 from GEF, USD 750 000 from co-financing	The objectives of the project are to: (1) strengthen the capacity of Southeast Asian countries to implement the CBD provisions on ABS through the development of full and effective national ABS frameworks; (2) increase understanding of ABS issues among stakeholders and the general public and strengthen national capacity for country negotiators to have full understanding of issues and preferred options in the negotiation on the international ABS regime in a way that protects national interests and promotes equitable benefit sharing; and (3) improve public understanding of the contribution ABS can make to biodiversity conservation and sustainable livelihoods.	Lessons learned from the proposed project will help inform the regional project. Executing agencies : ASEAN Secretariat, ASEAN Centre for Biodiversity (ACB), United Nations University Institute of Advanced Studies (UNU-IAS)
Support to GEF Eligible Parties	UNEP	Approved in 2012	USD	Project Objective: With the overarching goal of	Lessons learned from the proposed project

(LDCs & SIDs) for the Revision of the NBSAPs and Development of Fifth National Report to the CBD - Phase II			6 118 200 from GEF, USD 5 513 640 from co-financing	integrating CBD Obligations into National Planning Processes through Enabling Activities, the main objective of this project is to enable GEF eligible LDCs and SIDs to revise the National Biodiversity Strategies and Action Plans (NBSAPs) and to develop the Fifth National Report to the CBD	will help inform the regional project.
GMS Forest and Biodiversity Program (GMS-FBP) - Creating Transboundary Links Through a Regional Support	ADB	Approved in 2014	USD 917 431 From GEF, USD 30 738 000 from co-financing	To strengthen transboundary cooperation for the sustainable management of a network of priority conservation landscapes in the Greater Mekong Subregion (GMS)	Lessons learned from the proposed project will help inform the regional project.

4.2 Implementation Arrangements

a. Roles and responsibilities of the executing partners

At the request of the Government of Myanmar, the project will be executed by FAO in close consultation with MOECAF and MoAI. FAO will carry out its responsibilities to support project execution through the National Project Director (NPD). Funds received will be used to execute the project activities in conformity with FAO's rules and procedures.

The project will be implemented through a National Project Implementation Unit (PMO). This unit will be situated within the FAO compound in Yangon. This will be part of the GEF implementation support unit. Small field offices will be established in Nyaung Oo (upland and dry zone pilot sites) and Laputta (coastal zone pilot site). Various project staff will also be placed within the Ministry of Environmental Conservation and Forestry (MOECAF), Ministry of Agriculture and Irrigation (MoAI), and associated training institutions.

The project is designed to achieve many of its key outputs by means of letters of agreement (LoA) with key partners. These LoA are listed under the "Contracts" Budget Line of the project budget. Further detail on results-based LoA work plans and budgets will be developed during inception phase of the project. Specific Letters of Agreement (LoA) will be elaborated and signed between FAO and the respective collaborating partner. This will include inter alia, civil society organizations as appropriate. Project financing and monitoring will reflect the following implementation responsibilities of the MOECAF and MoAI.

Component/Output	***Principle***

Component 1: Institutional, policy and regulatory frameworks strengthened to support SLM, CSA, and SFM strengthened	
1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management	MOECAF MoAI
1.2: Updated national forestry master plan integrating SFM/REDD and community forestry	MOECAF
1.3: Updated agricultural master plan integrating CSA	MOECAF MoAI
1.4: Training in SFM, CSA, and SLM at national, state, and district levels	MOECAF MoAI
1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA	MOECAF MoAI
1.6: Pilot digital land-use mapping process in priority districts	MOECAF MoAI
Component 2: Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems	
2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems	MoAI
2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices	MoAI
2.3: National farmer field school curriculum developed	MoAI
2.4: Model farmer field schools established in three priority agro-ecosystems	MoAI
2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems	MoAI
Component 3: Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems	
3.1: National ecosystem-based SFM capacity building program established	MOECAF
3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives	MOECAF
3.3: Community based forestry implementation strategy and handbook completed	MOECAF
3.4: Community-based forestry capacity building and technical support program operationalized	MOECAF
3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems	MOECAF
Component 4: SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally	
4.1: Support program established for scaling-up SFM practices	MOECAF
4.2: Support program established for scaling-up CSA practices	MoAI

b. FAO's role and responsibilities, as the GEF Agency (and as an executing agency, when applicable), including delineation of responsibilities internally within FAO

FAO will be the GEF implementing and executing agency. As the GEF Agency, FAO will be responsible for project oversight to ensure that GEF policies and criteria are adhered to, and that the project efficiently and effectively meets its objectives and achieves expected outcomes and outputs as established in the project document. FAO will report on project progress to the GEF Secretariat and financial reporting will be to the GEF Trustee. FAO will closely supervise the project by drawing upon its capacity at the global, regional and national levels, through the concerned units at FAO-HQ, the Sub-Regional Office in Bangkok and the FAO Representation in Yangon. There is a complete separation between the GEF oversight responsibilities and project execution roles and responsibilities, as described below.

Executing Responsibilities (Budget Holder): Under FAO's Direct Execution modality, the FAO Representative in Myanmar will be the Budget Holder (BH) of this project. The BH, working in close consultation with the LTO, will be responsible for timely operational, administrative and financial

management of the project. The BH will head the multidisciplinary Project Task Force that will be established to support the implementation of the project and will ensure that technical support and inputs are provided in a timely manner. The BH will be responsible for financial reporting, procurement of goods and contracting of services for project activities in accordance with FAO rules and procedures. Final approval of the use of GEF resources rests with the BH, also in accordance with FAO rules and procedures.

Specifically, working in close collaboration with the LTO, the BH will: i) clear and monitor annual work plans and budgets; ii) schedule technical backstopping and monitoring missions; iii) authorize the disbursement of the project's GEF resources; iv) give final approval of procurement, project staff recruitment, LoAs, and financial transactions in accordance with FAO's clearance/approval procedures; v) review procurement and subcontracting material and documentation of processes and obtain internal approvals; vi) be responsible for the management of project resources and all aspects in the agreements between FAO and the various executing partners; vii) provide operational oversight of activities to be carried out by project partners; viii) monitor all areas of work and suggest corrective measures as required; ix) submit to the GEF Coordination Unit, the TCID Budget Group and the LTO semi-annual financial reports on the use of the GEF resources (due 31 July and 31 January). These reports will show the amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments), and details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in the Project Document; x) be accountable for safeguarding resources from inappropriate use, loss, or damage; xi) be responsible for addressing recommendations from oversight offices, such as Audit and Evaluation; and xii) establish a multi-disciplinary FAO Project Task Force to support the project.

The FAO Lead Technical Unit (LTU). The Forest Assessment Management and Conservation Division (FOM) of FAO's Forestry Division will be the LTU for this project and will provide overall technical guidance to its implementation, particularly through the Mountain Partnership Secretariat. FOM will delegate the responsibility for direct technical supervision to the FAO country Office.

FAO Lead Technical Officer (LTO) The Senior Forestry Officer in the FAO Country Office will be the LTO for the project. Under the general technical oversight of the LTU, the LTO will provide technical guidance to the project team to ensure delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical backstopping from all the concerned FAO units represented in the Project Task Force. The Project Task Force is thus composed of technical officers from the participating units (see below), operational officers, the Investment Centre Division/GEF Coordination Unit and is chaired by the BH. The primary areas of LTO support to the project include:

- Review and ensure clearance by the relevant FAO technical officers of all the technical Terms of Reference (TOR) of the project team and consultants;
- Ensure clearance by the relevant FAO technical officers of the technical terms of reference of the Letters of Agreement (LoA) and contracts;
- Lead the selection of the project staff, consultants and other institutions to be contracted or with whom an LoA will be signed in consultation with MoE;
- Review and clear technically reports, publications, papers, training material, manuals, etc.;
- Monitor technical implementation as established in the project RF;
- Review the Project Progress Reports (PPRs) and the annual Project Implementation Review (PIR).

A multidisciplinary Project Task Force will be established by the Budget Holder and comprised of technical units in the Country Office and FAO Headquarters, the Asia and Pacific Service (TCIB) of the Investment Centre Division, and the GEF Coordination Unit. Participating units from across FAO will be involved in supporting the project's work and in ensuring that the project stays on track to achieve its overall objectives and indicators of success. When appropriate, these units within the Sub-regional Office for Central Asia and HQ will provide technical support in areas such as: forest and sustainable

land management, climate smart agriculture, gender, climate change vulnerability assessment and adaptation. The Asia and Pacific Service (TCIB) of the FAO Investment Centre Division (TCI) will provide adaptive management support and results-based management oversight and guidance to the LTO and the participating units.

FAO GEF Coordination Unit in Investment Centre Division will review and approve PPRs, annual PIRs and results-based financial reports and budget revisions. The GEF Coordination Unit will organize annual independent supervision missions, in consultation with the LTU, LTO, the BH and TCI. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GEF Coordination Unit. The GEF Coordination Unit will work closely with the FAO Evaluation Office (OEDD) to ensure that the project's mid-term review and final evaluations meet GEF requirements by reviewing evaluation ToRs and draft evaluation reports. Should the PIRs or mid-term review highlight risks affecting the timely and effective implementation of the project, the GEF Coordination Unit will work closely with the BH and LTO to make the needed adjustments in the project's implementation strategy.

The Investment Centre Division Budget Group (TCID) will provide final clearance of any budget revisions. The FAO Finance Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the GEF Coordination Unit and the TCID Budget Group, call for project funds on a bi-annual basis from the GEF Trustee.

c. Project technical, coordination and steering committees

Steering Committee

A Project Steering Committee (PSC) will be established and chaired by MOECAF with the participation of MoAI and FAO, representative and at least one member from the Stakeholder Committee (SC – see below), and observers from NGOs and the Private Sector. The PSC will meet minimally two times per year and its specific responsibilities will be: i) overall oversight of project progress and achievement of planned results as presented in bi-annual PPRs; ii) take decisions in the course of the practical organization, coordination and implementation of the project; iii) facilitate cooperation between PMO/MOECAF and project participating partners and project support at the local level; (iv) advise the PMO on other on-going and planned activities facilitating collaboration between the Project and other programmes, projects and initiatives in Myanmar; (v) facilitate that co-financing support is provided in a timely and effective manner; and (vi) review bi-annual Project Progress and Financial Reports and approve AWP/B.

Member Organization	***Organization Representative***
MOECAF	Deputy Minister, Chair of SC
Forestry Department, MOECAF	Director General
Environmental Conservation Department, MOECAF	Director General
Dry Zone Greening Department (DZGD), MOECAF	Director General
Department of Agriculture, MoAI	Director General
Department of Agricultural Planning, MoAI	Focal person for project
Department of Land Settlement and Records (SLRD), MoAI	Focal person for project
Department of Agricultural Research, MoAI	Focal person for project
Yezin University of Agriculture, MoAI	Focal person for project
FAO	Representative
FAO	CTA/Senior Technical Advisor of GEF
Land use committee	Representatives

National Project Implementation Unit

Project Management Office (PMO) will be hosted by FAO and will be responsible for day-to-day project operations. The role of the PMO will be, in close consultation with the PSC and independent expert group (IEG) members (see below), to ensure the coordination and execution of the Project through the timely and efficient implementation of annual work plans.

The PMO will manage project information and documentation and distribution of project reports, newsletters and training materials to relevant stakeholders; manage project M&E, conduct regular field M&E visits to project sites, and assist the National Project Manager (see below) in preparing bi-annual Project Progress Reports monitoring progress in achieving project outputs and outcome indicators, and in liaising with FAO Representation's Finance and Administrative Assistant (for preparing financial reports). FAO will provide office space, equipment and utilities and part of travel as a counterpart contribution to project management.

The PMO will act as secretariat to the PSC. It will coordinate work and follow closely the implementation of project activities, handle day-to-day project issues and requirements, coordinate project interventions with other on-going activities and ensure a high degree of provincial/oblast and local/rayon inter-institutional collaboration, monitor project progress and ensure the timely delivery of inputs and outputs. It will organize workshops and annual meetings for the Project for monitoring project progress and develop work plans with detailed budget for the next year to be approved by the PSC. It will be responsible for implementing the project's M&E plan, managing its monitoring system and communication programme, the elaboration of bi-annual Project Progress and Financial reports and assist in the preparation of the annual Project Implementation Review (PIR) and midterm and final evaluations. Project Progress Reports on implemented activities and progress in achieving project outputs and outcomes, and financial statements of expenditures and status for the previous year will be submitted together with the Annual Work Plan and detailed Budget (AWP/B) to the PSC and FAO via MOECAF's Project Director.

The project will benefit from a full-time National Project Manager in charge of project daily management and technical supervision including, preparing "Annual Work Plan and Budget (AWP/B)" and allocating tasks to Field Offices, preparing TORs and technical requirements for consultancy services contracting documents and material and equipment procurement documents, providing technical supervision and guidance to the Field Offices in implementing project activities, conducting regular field supervision visits and provide on-site guidance to oblast/rayon technical staff, day-to-day coordination and communication with Field Office staff in charge of the GEF project, and preparing the project progress reports.

The project will also benefit from a part-time Senior Technical Advisor. The international level STA will back-stop the PMO activities and provide technical advice and direction to project implementation activities.

A Finance and Administrative Assistant will be in charge of preparing detailed budgets for cash transfer requests based on the AWP/B and project account cash balance, keeping the financial records and regular review of the project account, reviewing the receipts and financial reports submitted by field offices and sub-contractors and preparing bi-annual financial statement of expenditures, preparing the personnel and services contracting and procurement documents and participate in contracting and procurement processes including of submission of documentation to FAO for ex-antes clearances, and preparing relevant documents for internal and external financial audits.

Independent Technical Expert Group

An Independent Expert Group (IEG) will be established to provide technical advice on specific project components and outputs. This group will include representation from key organizations, including co-funders.

Member Organization	*Organization Representative (Job title/position)*
FAO	Project Manager
FD	National Project Coordinator
MOECAF	Technical officer 1
MOECAF	Technical officer 2
MOECAF	Technical officer 3
MoAI	Technical officer 1
MoAI	Technical officer 2
MoAI	Technical officer 3
UNDP	Technical officer
ADB	Technical officer
WB	Technical officer
FSWG	Representative
ETWG	Representative

The IEG may also be involved in technical evaluation of project progress and outputs, and identification of possible solutions and/or changes in project activities when technical issues arise in the course of project implementation.

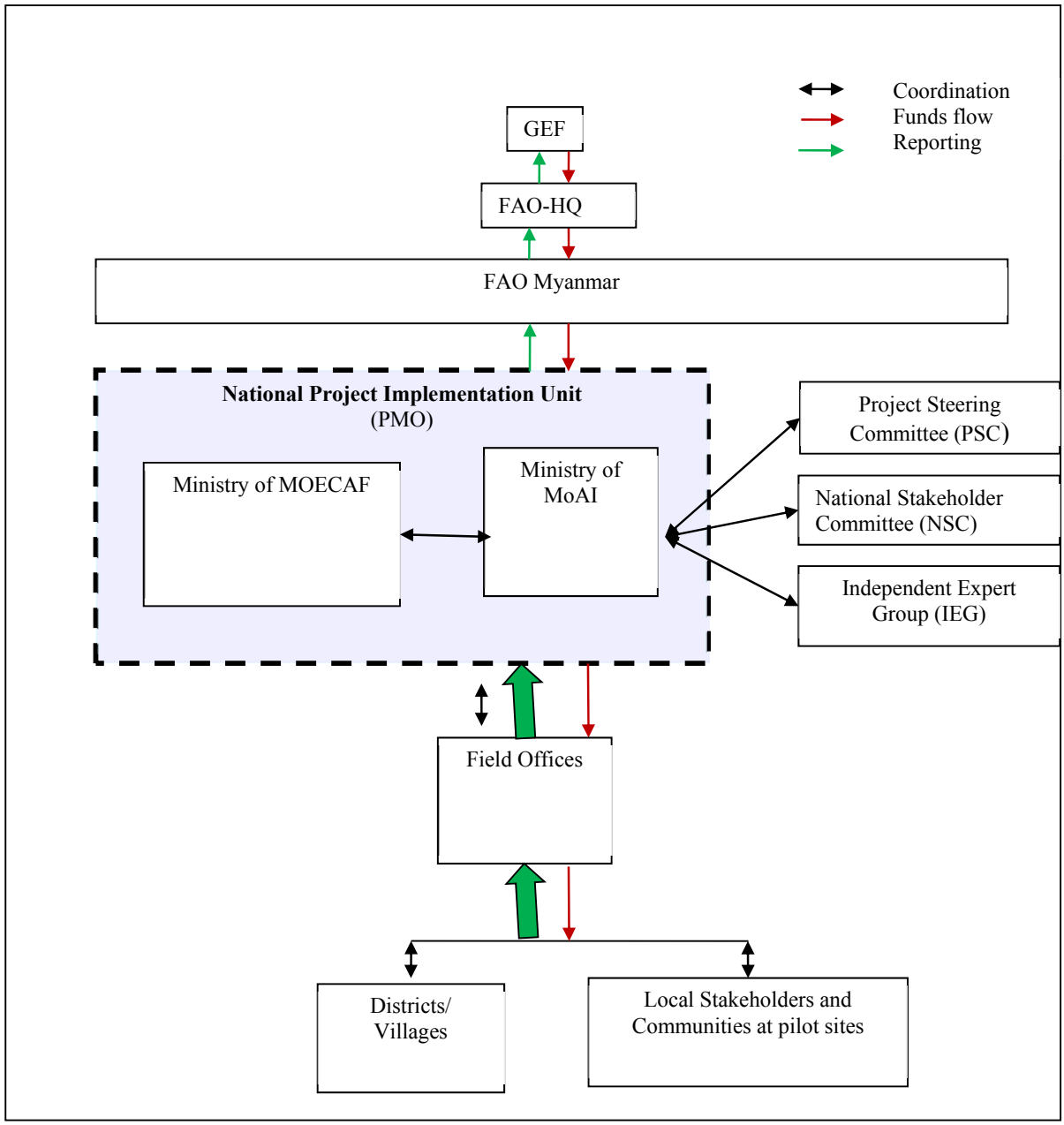
Local Stakeholder Committees

Local Stakeholder Committees (NSC) will: i) provide advice on relevant policies, actions and measures in particular related to participation of local communities at the pilot sites; ii) provide new ideas and thinking on conflict resolution over management of natural resources, options for increased carbon sequestration and sustainable use, and creative initiatives on how to increase public awareness of socio-economic and global environmental benefits generated by SFM and SLM; and iii) promote communications between the government agencies and local communities and the private sector.

The composition of the LSC's will consist of the Township Land Use Committee plus civil society representatives:

Member Organization	Organization Representative (Job title/position) (e.g. Deputy Director General)
General Administrative Department	Staff officer
Forest Department	Staff officer
DoA	Staff officer
SLRD	Staff officer
Civil societies	Representatives
INGOs and LNGOs	Representatives
Irrigation Department	Staff officer

d. Organizational chart



4.3 Financial Planning and Management

4.3.1 Financial plan (by component, outputs and co-financier)

Component/output	MOECAF/FD	MoAI/DA	LIFT	FAO	Total Co-financing	% Co-financing	GEF	% GEF	Total
Component 1: Institutional, policy and regulatory frameworks strengthened to support SLM, CSA, and SFM strengthened	250,000	750,000	-	-	1,000,000	51%	963,566	49%	1,963,566
1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management 1.2: Updated national forestry master plan integrating SFM/REDD and community forestry (CF) elements 1.3: Updated agricultural master plan integrating CSA 1.4: Training in SFM, CSA, and SLM at national, state, and district levels 1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA 1.6: Pilot digital land-use mapping process in priority districts									
Component 2: Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems	-	2,250,000	1,000,000	1,696,500	4,946,500	72%	1,894,550	28%	6,841,050
2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems 2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices 2.3: National farmer field school curriculum developed 2.4: Model farmer field schools established in three priority agro-ecosystems 2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems									
Component 3. Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems	1,500,000	-	2,000,000	585,260	4,085,260	62%	2,485,700	38%	6,570,960
3.1: National ecosystem-based SFM capacity building program established 3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives 3.3: Community based forestry implementation strategy and handbook completed									

3.4: Community-based forestry capacity building and technical support program operationalized 3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems									
Component 4. SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally	150,000	1,500,000	1,417,707	1,535,800	4,603,507	90%	486,532	10%	5,090,039
4.1: Support program established for scaling-up SFM practices 4.2: Support program established for scaling-up CSA practices									
Project Management	100,000	500,000	-	570,440	1,170,440	77%	349,983	23%	1,520,423
Total Project	2,000,000	5,000,000	4,417,707	4,388,000	15,805,707	72%	6,180,331	28%	21,986,038

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (USD)	Total Amount (USD)
National Government	Ministry of Agriculture and Irrigation (MoAI) - Good Agricultural Practice (GAP) Programs [grant] - Development of structural measure to combat land degradation [grant] - Extension work, office management, staff [in-kind]	Grant	3 000 000	**5 000 000**
		In-kind	2 000 000	
National Government	Ministry of Environmental Conservation and Forestry (MOECAF) - District forest management planning and implementation [in-kind] - Distribution of seedling for forest user groups and green programme [grant] - Tree nursery operation and forest plantation management [grant] - Fuelwood and fuel-efficient stove/alternative fuel stove distribution [grant]	Grant	1 000 000	**2 000 000**
		In-kind	1 000 000	
GEF Agency	FAO - Environmentally Sustainable Food Security Programme (ESFSP) GCP/MYA/011/ITA: Support to Special Rice Production [grant] - FAO Technical Cooperation Programme (TCP) TCP/MYA/3501: Strengthening Myanmar's National Forest Monitoring System – Land Use Assessment and Capacity Building [in-kind]	Grant	1 950 000	**2 194 000**
		In-kind	244 000	
Multilateral Agency	Livelihoods and Food Security Trust Fund (LIFT)	In-kind	4 417 707	**4 417 707**
Total Co-financing			13 611 707	**13 611 707**

4.3.2 GEF/LDCF/SCCF inputs

The requested GEF grant will be allocated mainly in support of capacity building.

4.3.3 Government inputs

Government in-kind co-financing will mainly consist in staff time, office space and utilities, and support for local travel.

FAO will also mobilize resources from other bilateral and multi-lateral donors as co-financing for the project as reflected in the close cooperation evident among Government of Myanmar and FAO together with the growing international community of development agencies increasing their presence and levels of investment in Myanmar.

4.3.4 FAO inputs

FAO will also bring to bear co-funding from its own programs and resources in SFM and ICLM/CSA and tenure issues in the order of USD 2 194 000.

4.3.5 Other co-financiers inputs

Private enterprises, and particularly farmers and ranchers, participating in the co-management models will contribute with parallel financing in terms of their time and experience. They will also provide inputs by supporting much of the financial risk associated with shifting from land degrading to SLM supportive practices.

4.3.6 Financial management of and reporting on GEF/LDCF/SCCF resources

a) **Financial Records**. FAO shall maintain a separate account in United States dollars for the Project's GEF resources showing all income and expenditures. Expenditures incurred in a currency other than United States dollars shall be converted into United States dollars at the United Nations operational rate of exchange on the date of the transaction. FAO shall administer the Project in accordance with its regulations, rules and directives.

b) **Financial Reports** The BH shall prepare six-monthly project expenditure accounts and final accounts for the project, showing amount budgeted for the year, amount expended since the beginning of the year, and separately, the un-liquidated obligations as follows:
   (i) Details of project expenditures on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the Project document, as at 30 June and 31 December each year.
   (ii) Final accounts on completion of the Project on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the Project document.
   (iii) A final statement of account in line with FAO Oracle Project budget codes, reflecting actual final expenditures under the Project, when all obligations have been liquidated.

c) The BH will submit the above financial reports for review and monitoring by the LTO and the FAO GCU. Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

d) Budget Revisions. Semi-annual budget revisions will be prepared by the BH in accordance with FAO standard guidelines and procedures.

e) **Responsibility for Cost Overruns**. The BH is authorized to enter into commitments or incur expenditures up to a maximum of 20 percent over and above the annual amount foreseen in the Project budget under any budget sub-line provided the total cost of the annual budget is not exceeded.

f) Any cost overrun (expenditure in excess of the budgeted amount) on a specific budget sub-line over and above the 20 percent flexibility should be discussed with the GCU/TCIB with a view to ascertaining whether it will involve a major change in Project scope or design. If it is deemed to be a minor change, the BH shall prepare a budget revision in accordance with FAO standard procedures. If it involves a major change in the Project's objectives or scope, a budget revision and justification should be prepared by the BH for discussion with the GEF Secretariat.

g) Savings in one budget sub-line may not be applied to overruns of more than 20 percent in other sub-lines even if the total cost remains unchanged, unless this is specifically authorized by the GCU upon presentation of the request. In such a case, a revision to the Project document amending the budget will be prepared by the BH.

h) Under no circumstances can expenditures exceed the approved total Project budget or be approved beyond the NTE date of the project. **Any over-expenditure is the responsibility of the BH.**

i) **Audit**. The Project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO.

j) The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the terms of reference of each. Internal audits of imprest accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

4.4 Procurement

Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a "Best Value for Money" basis, and in accordance with the Rules and Regulations of FAO. It requires analysis of needs and constraints, including forecast of the reasonable timeframe required to execute the procurement process. Procurement and delivery of inputs in technical cooperation projects follow FAO's rules and regulations for the procurement of supplies, equipment and services (i.e. Manual Sections 502 and 507). Manual Section 502: "Procurement of Goods, Works and Services" establishes the principles and procedures that apply to procurement of all goods, works and services on behalf of the Organization, in all offices and in all locations, with the exception of the procurement actions described in Appendix A – Procurement Not Governed by Manual Section 502. Manual Section 507 establishes the principles and rules that govern the use of Letters of Agreement (LoA) by FAO for the timely acquisition of services from eligible entities in a transparent and impartial manner, taking into consideration economy and efficiency to achieve an optimum combination of expected whole life costs and benefits ("Best Value for Money").

As per the guidance in FAO's Project Cycle Guide, the BH will draw up an annual procurement plan for major items which will be the basis of requests for procurement actions during implementation. The plan will include a description of the goods, works, or services to be procured, estimated budget and

source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available.

4.5 Monitoring and reporting

4.5.1 Oversight and monitoring responsibilities

Monitoring and evaluation of progress in achieving project results and objectives will be done based on the targets and indicators established in the Project Results Framework. Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines.

The Project Management Unit (PMU) will set up a project progress monitoring system. Participatory mechanisms and methodologies for systematic data collection and recording will be developed in support of outcome and output indicator monitoring and evaluation. During the inception workshop M&E related tasks to be addressed will include: i) presentation and clarification (if needed) of the project's Results framework with all project stakeholders; ii) review of the M&E indicators and their baseline; iii) drafting the required clauses to include in consultants' contracts to ensure they complete their M&E reporting functions (if relevant); and iv) clarification of the respective M&E tasks among the Project's different stakeholders. A detailed monitoring plan agreed to by all primary stakeholders will be a main workshop output.

The day-to-day monitoring of Project Implementation will be the responsibility of the PMO driven by the preparation and implementation of an AWP/B followed up through semi-annual PPRs. The preparation of the AWP/B and semi-annual PPRs will represent the product of a unified planning process between main project partners. As tools for results-based-management (RBM), the AWP/B will identify the actions proposed for the coming project year and provide the necessary details on output targets to be achieved, and the PPRs will report on the monitoring of the implementation of actions and the achievement of output targets. NR-specific inputs to the AWP/B and the PPRs will be prepared based on participatory planning and progress review with local stakeholders and coordinated through the PMO and facilitated through project planning and progress review workshops. An annual project progress review and planning meeting should be held. Subsequently the AWP/B and PPRs are submitted to the PSC for approval (AWP/B) and Review (PPRs) and to FAO for approval. The AWP/B will be developed in a manner consistent with the project's Results Framework to ensure adequate fulfillment and monitoring of project outputs and outcomes.

Following the approval of the Project, the project's first year AWP/B will be adjusted (either reduced or expanded in time) to synchronize it with an annual reporting calendar. In subsequent years, the FSP work plan and budget will follow an annual preparation and reporting cycle.

4.5.2 Indicators and information sources

To monitor project outputs and outcomes including contributions to global environmental benefits specific indicators have been established in the Results Framework. The framework's indicators and means of verification will be applied to monitor both project performance and impact. Following FAO's monitoring procedures and progress reporting formats data collected will be of sufficient detail to be able to track specific outputs and outcomes and flag project risks early on. Output target indicators will be monitored on a bi-annual basis and outcome target indicators will be monitored on an annual basis if possible or as part of the mid-term and final evaluations. The project output and outcome indicators have been designed to monitor on-the-ground impacts and progress in building and consolidating capacities.

The main sources of information to support the M&E program will be: i) participative progress monitoring and workshops with beneficiaries; ii) on-site monitoring of implementation; iii) project progress reports prepared by the PMO; iv) consultants reports; v) participants training tests and evaluations; vi) mid-term and final evaluations completed by independent consultants; vii) financial reports and budget revisions; viii) Project Implementation Reviews prepared by the FAO Lead Technical Officer supported by the Project Task Manager in the FAO Office in Yangon and the PMO; viii) FAO supervision mission reports; and ix) post project impact and evaluation studies.

4.5.3 Reports and their schedule

Specific reports that will be prepared under the M&E program are: (i) Project inception report; (ii) project implementation strategy; (iii) Annual Work Plan and Budget (AWP/B); (iv) Project Progress Reports (PPRs); (v) annual Project Implementation Review (PIR); (vi) Technical Reports; (vii) co-financing Reports; and (viii) Terminal Report. In addition, assessment of the GEF Monitoring Evaluation Tracking Tools (METTs) against the baseline (completed during project preparation) will be required at midterm and final project evaluation.

Project Inception Report:
After FAO approval of the project and signature of the Execution Agreement an inception workshop will be held. Immediately after the workshop, PMO will prepare a project inception report in consultation with the FAO Project Task Manager and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan based on the monitoring and evaluation plan summery presented in section 4.5.4 below, and a progress and completion report on all actions agreed in the mitigation plan of fiduciary risks (as referred to in section 3.2.2). The draft inception report will be circulated to FAO and the PSC for review and comments before its finalization, no later than three months after project start-up. The report should be cleared by the FAO Yangon, LTO, LTU and the FAO GEF Coordination Unit and uploaded in FPMIS by the LTO.

Project Implementation Workplan:
Immediately following the inception workshop, the project will be tasked with generating a strategic workplan. The workplan will outline the general timeframe for completion of key project outputs and achievement of outcomes. The workplan will map and help guide project activity from inception to completion. To ensure smooth transition between project design and inception, the inception workshop and work planning process will benefit from the input of parties responsible for the design of the original project, including as appropriate relevant technical advisors.

Annual Work Plan and Budget (AWP/B):
PMO will submit to the FAO Representation in China a draft Annual Work Plan and Budget no later than 10 January. The AWP/B should include detailed activities to be implemented by project outputs and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The draft AWP/B is circulated to and reviewed by the FAO Project Task Force, DWP/PMO incorporates eventual comments and the final AWP/B is send to the PSC for approval and to the FAO for final no-objection and upload in FPMIS by the GEF Coordination Unit. (See AWP/B format in Execution Agreement Annex 4.B)

Project Progress Reports (PPR):
PMO will prepare semi-annual PPRs and submit them to the FAO Representation in Myanmar no later than July 15 (covering the period January through June) and 15 January (covering the period July through December). The 1st semester six months report should be accompanied by the updated AWP/B,

for review and no-objection by FAO. The PPR are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework Appendix 1). The FAO Project Task Manager will review the progress reports and collect and consolidates eventual FAO comments from the LTO, LTU, the GEF Coordination Unit, and the Budget Holder Office and provide these comments to the DWP/PMO. When comments have been duly incorporated the LTO will give final approval and submit the final PPR to the GEF coordination Unit for final clearance and upload in FPMIS.

Annual Project Implementation Review (PIR):
The LTO supported by the LTU and the FAO Project Task Manager and with inputs from the PMO, will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the GEF Coordination Unit for review and approval no later than 31 July. The GEF Coordination will upload the final report on FAO FPMIS and submit it to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The GEF Coordination Unit will provide the updated format when the first PIR is due.

Technical Reports:
Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by PMO to the FAO Representation in Myanmar who will share it with the LTO and LTU for review and clearance and to the GEF Coordination Unit for information and eventual comments, prior to finalization and publication. Copies of the technical reports will be distributed to the PSC and other project partners as appropriate. The final reports will be posted on the FAO FPMIS by the LTO.

Co-financing Reports:
PMO will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided. PMO will submit the report to the FAO Representation in Myanmar in a timely manner on or before 31 July covering the period July (the previous year) through June (current year).

GEF Tracking Tools:
Following the GEF policies and procedures, necessary tracking tools will be submitted at three moments: (i) with the project document at CEO endorsement; (ii) at the project's mid-term evaluation; and (iii) with the project's final evaluation or final completion report.

Terminal Report:
Within two months before the end date of the Execution Agreement PMO will submit to the FAO Representation in Myanmar a draft Terminal Report. The main purpose of the final report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. The terminal report is accordingly a concise account of the main products, results, conclusions and recommendations of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application of best principles and practices within the context of national priorities as well as in practical execution terms. This report will specifically include the findings of the final evaluation. A final project review meeting should be held to discuss the draft terminal report before it is finalized by the PMO and approved by the FAO LTO, LTU and the GEF Coordination Unit.

4.5.4 Monitoring and evaluation plan summary

Table below provides a summary of the main M&E reports, responsible parties and timeframe.

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs
Inception Workshop	PMO, FAO Project Task Manager (PTM) supported by the FAO LTO, BH, and the GEF Coordination Unit	Within two months of project start up	USD 20 000
Project Inception Report	PMO, FAO PTM cleared by FAO LTO, LTU, and the GEF Coordination Unit	Immediately after workshop	(If we want to leave some funding for the report, we need to add it in the budget, otherwise we should specify in the TORs who will write it)
Field based impact monitoring	PMO and relevant line agencies.	Continually	USD 20 000
Supervision visits and rating of progress in PPRs and PIRs	PMO, FAO LTO/LTU and GEF Coordination Unit	Annual or as required	The visits of the FAO LTU and the GEF Coordination Unit will be paid by GEF agency fee. The visits of the PMO will be paid from the project travel budget
Project Progress Reports	PMO, with inputs from project partners	Bi-annual	USD 5 000
Project Implementation Review report	FAO PTM and LTO supported by the LTU, PMO and project partners and cleared and submitted by the GEF Coordination Unit to the GEF Secretariat	Annual	Paid by GEF agency fee
Co-financing Reports	PMO	Annual	USD 2 000
Technical reports	PMO	As appropriate	
Mid-term Evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 23 and 24	USD 40 000 for external consultants. FAO staff time and travel or an additional consultant will be paid through the agency fee
Final evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 45 and 46	USD 30 000 for external consultants. FAO staff time and travel or an additional consultant will be paid through the agency fee
Terminal Report	PMO	Completed by project month 47	USD 2 000
Total Budget			USD 119 000

4.6 Provision for evaluations

An independent Mid-Term Evaluation (MTE) will be undertaken during project months 28 - 30. The MTE will review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. Findings and recommendations of this evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO will arrange for the MTE in consultation with project management.

The evaluation will, inter alia: i) review the effectiveness, efficiency and timeliness of project implementation; ii) analyze effectiveness of partnership arrangements; iii) identify issues requiring decisions and remedial actions; iv) propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and v) highlight technical achievements and lessons learned derived from project design, implementation and management.

An independent Final Evaluation (FE) will be completed by project month 58. The FE will identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This Evaluation will indicate future actions needed to sustain project results, expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to responsible management authorities to assure continuity of the processes initiated by the Project.

The FAO Project Task Manager will prepare the first draft of the Terms of Reference for the mid-term and the final evaluations and consult with and incorporate comments from key project partners, including the FAO budget holder, the FAO Lead Technical Unit and Officer, and the FAO GEF Coordination Unit. Subsequently the TORs will be sent to the FAO Office of Evaluation for finalization, in accordance with FAO evaluation procedures and taking into consideration evolving guidance from the GEF Evaluation Office.

4.7 Communication of project results and visibility

Giving high visibility to the project and ensuring effective communications in support of the project's message has been addressed in a number of activities that have been incorporated into its design.

SECTION 5 – SUSTAINABILITY OF RESULTS

5.1 Social Sustainability

As detailed throughout this project document, the investment is designed to promote social sustainability. This includes making certain that more vulnerable sectors of society, such as women and the rural poor, benefit directly from project activities. The project will help rural communities work in a more cooperative manner to understand and identify environmental issues that might cause social instability. For instance, land degradation and climate change both increase economic risks and decrease social cohesion. By working to reduce land degradation and minimize the impacts of climate change, the project will be promoting social sustainability. This will also be improved by creating opportunities for stakeholder engagement and discussion, such as capacity building functions, farmer field schools, and activities related to land use planning.

National figures show some 70% of Myanmar's 58 million people as living in rural areas, with project site information showing even higher 80-90 % figures. The rural population is largely engaged in

agriculture sectors, the majority of households being small-scale farmers, with the average size of land holding being some 5.8 acres (2.4 hectares). The dependence of a high proportion of the population on agriculturally based livelihoods makes them vulnerable to climate change and land degradation risks. Introduction of more sustainable and resilient systems of cultivation can reduce these risks alongside meeting carbon emission and reduced land degradation targets.

As noted, Myanmar is an ethnically diverse country with 135 distinct ethnic groups recognized by the government. Dependence on natural resources is particularly high among the poor and poorer communities, including Myanmar's many ethnic minorities and tribal groups. Tribal groups and ethnic minority groups comprise some of the most forest dependent communities who will ultimately benefit from a more community-based approach to agro-ecosystem management.

Declining forest cover and degraded land contribute to rural food security problems and present challenges for long-term community development and poverty alleviation. Ultimately, forest and land degradation decreases the ability of people to develop economically over the long term. Improved cropland management is designed to increase productivity, increasing food security and farm incomes. Small holder famers will benefit from the project through additional investments in productive capital (skills, inputs, tools) necessary to improve cropland and forestland management and the natural capital that will be conserved and restored as a result, i.e. environmental services from healthy forests.

The project's work to strengthen community-based forestry will help to diversity rural livelihoods, and meeting local and national demands for fuel wood and timber products while at the same time maintaining healthy and productive forest ecosystems. Initial stakeholder consultations indicate that in some forest dependent communities a large portion of income is derived from illegal forest resource use. This suggests that there is room for more formal involvement of local people in forest product value realization, including timber. Local benefits will include financial benefits for FUGs from forest products and livelihoods associated with forest management and sustainable use, social capital formation among rural communities. A detailed socio-economic assessment and analysis will be conducted during the PPG, which will inform the project's design, including of the value of forest products realized currently by local groups and the potential for increasing this.

Rural women in Myanmar are key drivers of agriculture productivity and forest resource use and management, performing at least 80% of the agriculture and livestock work. Rural women and women headed households too often lack access to land, resource entitlements and inputs such as credit and technology and extension services. Customary practices often restrict women's ability to own or operate land, the critical asset for households that depend on agriculture. GEF resources, in helping to strengthen and enable improved community based cropland and forest management, will seek to expand both economic empowerment and political participation of rural women through its work to pilot new local institutions for improved land and resource use management (e.g. LUAC) and by ensuring women are active participants in FUGs and have equal access to productive resources such as agricultural inputs, finance, extension services and technology/extension services. Project efforts will seek to strengthen rural women's self-confidence and capacity to take on leadership roles, while working with men to champion and support change through removing gender-discriminatory norms and attitudes. The project's work to strengthen governance framework for SFM and SLM will catalyze policy, legal, budgetary and land tenure reforms in support of rural women.

Women's full participation in agricultural activities, combined with their de facto status of head of household due to migration, absence or other livelihood activity, calls for their full integration into the project. A flexible approach to Farmer Field Schools, in terms of timing of meetings to allow for women's household and child care responsibilities, will support women's attendance, as will the designation of at least two FFS for women in each pilot area. Women's ability to participate in both family and village decision-making has shown a marked increase with successful participation in self-reliance groups.

5.2 Environmental Sustainability

The project is designed to promote environmental sustainability and specifically the maintenance of ecosystem services upon which rural communities depend. The project will result in both on-the-ground improvements that will be carried forward as well as policy improvements. This will have positive ramifications in terms of climate change mitigation/adaptation, SLM, and biodiversity conservation. All project activity is directed towards achieving improvements in ecosystem integrity and making certain that these improvements are supported and progress over time. This includes setting in place a comprehensive monitoring system linked to decision-making frameworks to make certain environmental sustainability is achieved.

Efforts will include reduction in land degradation currently caused by swidden agricultural practices in Mindat District, improvements in vegetative cover and soil carbon and water holding capacity in dry land areas and reduced erosion from paddy cultivation in Laputta township area.

Avoidance of carbon dioxide emissions by introduction of modified irrigation and fertilization practices in the cultivation of rice in pilot areas around Laputta, could provide a practical model for larger areas of the predominately rice-producing Delta Region. Similarly avoidance of carbon dioxide emissions are.

5.3 Financial and Economic Sustainability

Each component has integrated within it a hand-over plan. This hand-over plan will specify the financial and economic factors required to carry forward project-initiated activities. The Government of Myanmar and other stakeholders have shown a willingness to co-finance the project and a desire to fully absorb and continue identified best practices.

Identification and multiplication of improved and drought resistant varieties of key crops at local level, combined with demonstrations and trainings in improved soil and crop management, will enable farmers' groups to adopt more productive and sustainable cropping systems. Improving the quality of seeds available will impact on a much larger number of farmers than those involved directly in the pilot sites. Training in seed selection and production are skills that can increase farmer's resilience to climate change and encourage local adaptation. Farmer field schools can increase a sense of solidarity and identity among groups of farmers and lead to further organization around functions of improved input supply, marketing and/or financing of agricultural activities.

5.4 Sustainability of Capacities Developed

The project at all levels is designed to set in place not only mechanisms to support the sustainability of capacities developed but to continue to improve those capacities. This is particularly the case in terms of the Farmer Field Schools, monitoring programs, and land use planning initiatives. Each of these activities and all others are designed to grow, evolve and improve over time, all the while building and supporting capacities within the private and public sector to support SLM, CC mitigation/adaptation and biodiversity conservation.

5.5 Appropriateness of Technology Introduced

The project design benefited from the inputs of numerous national experts, government staff, and private stakeholders. Each of these parties had a hand in helping to define the types of technology that the project will support and introduce. This applies to sophisticated technologies such as methane capture and improved cultivation techniques as well as more mundane technologies such as the use of manure

for fertilizer. Each technology has been scaled to match the technical and financial capacities of the participating stakeholder group.

5.6 Replicability and scaling up

This is fundamentally a demonstration project. Every element of this project is designed to create models that are appropriate for replication and pathways to facilitate replication and scaling up. At both the pilot site and national level, representatives of both the MOECAF and MoAI throughout the project design process have repeatedly expressed their desire to use this project to identify best practices and broadly apply lessons learned. These agencies stand ready provide the financial and technical support required to support replication and upscaling. This will be enhanced by decision-making and policy structures designed to encourage and facilitate replication and upscaling.

APPENDICES

Appendix 1: Results Matrix

Outcome	Indicator	Baseline	End of Project Target	Means of Verification and Source of Information	Assumptions
Project objective: Build the capacity of farming and forestry stakeholders to mitigate climate change and improve land condition by adopting climate smart agriculture and sustainable forest management policies and practices.	Land cover delivering global environmental benefits in the project target area as reported in the GEF LD Tracking Tool	0 hectares of vegetative cover	124,000 hectares of vegetative cover delivering GEB	Independent evaluations FAO evaluations Project reports Results of project outputs/activities Monitoring through EX-ACT tool	High-level ownership by primary government stakeholders to apply reforms continues Substantial buy-in from private stakeholders is sustained and expanded Rate of capacity building can match pace of required changes
	Spatial coverage of integrated natural resource management practices in wider landscapes as reported in GEF LD tracking tool	0 ha agricultural lands 0 ha forests	6,4 ha agricultural lands 6 million ha forests		
	Direct and indirect lifetime greenhouse gas emissions avoided and carbon captured from forest and non-forest interventions from this project as reported in GEF SFM REDD+ Tracking Tool	0	Direct (tons of CO2-eq): Non-forest: 0,96 million Forest: 1,91 million Indirect lifetime (tons of CO2-eq): Non-forest: 3,60 million Forest:12,25 million		

Outcome	Indicator	Baseline	End of Project Target	Means of Verification and Source of Information	Assumptions
Outcome 1: Strengthened institutional, policy and regulatory frameworks	An enhanced enabling environment within the forest sector for SFM strengthened as reported in GEF SFM REDD+ Tracking Tool	Forest Sector Policy/ Regulation SFM Framework Score: #3: sector policy/regulation framework have been formally proposed but not adopted	Forest Sector Policy/ Regulation SFM Framework Score: #5: sector policy/regulation framework are enforced	Independent evaluations FAO evaluations Project reports Results of project outputs/activities	High-level ownership by primary government stakeholders to apply reforms continues Substantial buy-in from private stakeholders is sustained and expanded Rate of capacity building can match pace of required changes
	Agriculture policy enhancement score as reported in GEF LD tracking tool	Agriculture policy enhancement score of 2	Agriculture policy enhancement score of 3		
	Updated strategies for SFM and CSA finalized and adopted	Updated SFM Strategy: 0 Updated CSA Strategy: 0	Updated SFM Strategy: 1 Updated CSA Strategy: 1		
	Enhanced cross-sector enabling environment for integrated landscape management (LD3)	Framework strengthening INRM Score: 1 Integrated land management plans: 0	Framework strengthening INRM Score: 5 Integrated land management plans: 3 (one at each pilot site)		

	Township-wide land use plans updated and adopted to fully integrate CSA, SLM, and SFM		Number of updated township-wide land use plans: 3 (one for each pilot site)		
Outputs 1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management 1.2: Updated national forestry master plan integrating SFM/REDD and community forestry (CF) elements 1:3 Updated agricultural master plan integrating CSA 1:4: Training in SFM, CSA, and SLM at national, state, and district levels 1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA 1.6: Pilot digital land-use mapping process in priority districts					

Outcome	Indicator	Baseline	End of Project Target	Means of Verification and Source of Information	Assumptions
Outcome 2: Models for Climate Smart Agriculture (CSA) practices demonstrated and enhancing carbon storage in three priority agro-ecosystems	Conservation and enhancement of carbon in nonforest lands (agriculture) as reported in GEF CC Mitigation Tracking Tool (Objective 5: LULUCF)	Conservation and enhancement of carbon in nonforest lands (agriculture): 0 ha	Conservation and enhancement of carbon in nonforest lands (agriculture): 64,000 ha	Independent evaluations FAO evaluations Project reports Results of project outputs/activities	High-level ownership by primary government stakeholders to apply reforms continues Substantial buy-in from private stakeholders is sustained and expanded Rate of capacity building can match pace of required changes
	Good CC mitigation management practices developed and adopted for agriculture as reported in GEF CC Mitigation Tracking Tool (Objective 5: LULUCF)	#2: developing prescriptions for sustainable management	#5: over 80% of area in project certified		
	Number of farm households adopting CSA practices that support SLM and climate change mitigation	Number of CSA farm households: To be determined at Project Inception	Number of CSA farm households: To be determined at Project Inception		
	Number of annual national CSA/SLM knowledge exchange seminars established and supported by GoM	0 national CSA/SLM knowledge exchange seminars	1 annual (5 completed during project) national CSA/SLM knowledge exchange seminar established		

	Number of FFS and number of participating members	FFS established: 0 FFS participating members: Male: 0 Female: 0	FFS established: 50 FFS participating members: Male: 350 Female: 350		
Outputs 2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems 2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices 2.3: National farmer field school curriculum developed 2.4: Model farmer field schools established in three priority agro-ecosystems 2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems					

Outcome	Indicator	Baseline	End of Project Target	Means of Verification and Source of Information	Assumptions
Outcome 3. Models for sustainable forest management practices demonstrated and enhancing carbon storage in three priority ecosystems	Carbon stored in forest ecosystems and emissions avoided from deforestation and forest degradation from this project as reported in GEF SFM REDD+ Tracking Tool	Conservation & enhancement of carbon in forests due to project- Area: 0 ha Tonnes of CO2eq: 0	Conservation & enhancement of carbon in forests - Area: 60,000 ha Tonnes of CO2eq: 12,68 million	Independent evaluations FAO evaluations Project reports Results of project outputs/activities Monitoring through EX-ACT tool	High-level ownership by primary government stakeholders to apply reforms continues Substantial buy-in from private stakeholders is sustained and expanded Rate of capacity building can match pace of required changes
	Good forest management practices applied in existing forests as reported in GEF SFM REDD+ Tracking Tool	Area covered by forest management plans: 0 ha Restoration/rehabilitation of degraded forests: 0 ha	Area covered by forest management plans: 60,000 ha Restoration/rehabilitation of degraded forests: 2,000 ha		
	Enhanced institutional capacity to account for GHG emission reduction and increase in carbon stocks as reported in GEF SFM REDD+ Tracking Tool	National carbon stock monitoring systems in place (area covered): #2: in design phase	National carbon stock monitoring systems in place (area covered): # 6: monitoring information database publicly available		
	Number of SFM Model management plans adopted and operational	SFM model management plans adopted and operational: 0	SFM model management plans adopted and operational: 3 (one for each pilot site)		

	Number of Community-based forestry support units established at MOECAF	Community-based forestry support units established at MOECAF: 0	Community-based forestry support units established at MOECAF: 1		
	Number of ecosystem based community forestry initiatives operational and actively monitoring/delivering substantial CC and SLM benefits	Ecosystem based community forestry initiatives operational: 0	Ecosystem based community forestry initiatives operational: 9 (minimum of 3 per pilot site)		
Outputs 3.1: National ecosystem-based SFM capacity building program established 3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives 3.3: Community based forestry implementation strategy and handbook completed 3.4: Community-based forestry capacity building and technical support program operationalized 3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems					

Outcome	Indicator	Baseline	End of Project Target	Means of Verification and Source of Information	Assumptions
Outcome 4. SLM, SFM, and CSA knowledge management, training, and practices scaling up nationally	CSA knowledge center established, fully functional and supporting national replication of project generated outputs	CSA knowledge center: 0	CSA knowledge center: 1	Independent evaluations FAO evaluations GEF tracking tools Project reports Results of project outputs/activities	High-level ownership by primary government stakeholders to apply reforms continues Substantial buy-in from private stakeholders is sustained and expanded Rate of capacity building can match pace of required changes
	Number of annual participants in national in-service CSA/SLM extension officer training program	0 participants	100 participants		
	CSA/SLM supportive FFS established by GoM outside of project areas	FFS established outside of project areas: 0	FFS established outside of project areas: 50		
	Number of annual participants in project established national ecosystem-based forestry management training	Central Forestry Development and Training Center: 0 Forestry School: 0 University of Forestry: 0	Central Forestry Development and Training Center: 100 Forestry School: 50 University of Forestry: 25		
	Number of ecosystem based community forestry initiatives established by GoM outside of project area	Ecosystem based community forestry initiatives outside of project area: 0	Ecosystem based community forestry initiatives outside of project area: 10		
Outputs					

4.1: Support program established for scaling-up SFM practices 4.2: Support program established for scaling-up CSA practices

Appendix 2: Work Plan (Results Based)

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Component 1: Strengthened institutional, policy and regulatory frameworks.																						
1.1: Package of CSA and SFM regulatory and policy modifications for cropland and forest management																						
1.2: Updated national forestry master plan integrating SFM/REDD and community forestry (CF) elements																						
1:3 Updated agricultural master plan integrating CSA																						
1:4: Training in SFM, CSA, and SLM at national, state, and district levels																						
1.5: Pilot district and township level Land Use Advisory Committees pilot regulations for land-use planning integrating SFM and CSA																						
1.6: Pilot digital land-use mapping process in priority districts																						
Component 2: Improved Cropland Management (ICLM) Practices Demonstrated by Farmers in Priority Agro-Ecosystems of Myanmar.																						
2.1: CSA support program established within key institutions and demonstrated at priority agro-ecosystems																						
2.2: Township level agricultural extension service plans for climate smart agriculture/ improved cropland management (CSA/ICM) practices																						
2.3: National farmer field school curriculum developed																						
2.4: Model farmer field schools established in three priority agro-ecosystems																						
2.5: Early adopter farmers piloting CSA practices and delivering lessons within three priority agro-systems																						
Component 3: Models for sustainable forest management and enhancing carbon storage in priority agro ecosystems demonstrated.																						
3.1: National ecosystem-based SFM capacity building program established																						

Output	Activities	Responsible institution/ entity	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
3.2: Three Forest District Forest Management Plans revised and incorporate ecosystem-based SFM objectives																						
3.3: Community based forestry implementation strategy and handbook completed																						
3.4: Community-based forestry capacity building and technical support program operationalized																						
3.5: Twenty community-based forestry demonstrations established and delivering SLM/SFM/CC benefits in three priority ecosystems																						
Component 4: Knowledge management, Training, & Scaling up of SLM and SFM Practices.																						
4.1: Support program established for scaling-up SFM practices																						
4.2: Support program established for scaling-up CSA practices																						

Appendix 3: Results Budget

Oracle code and description	BUDGET in USD									Expenditures by year				
	Unit	No. of units	Unit cost	Component 1	Component 2	Component 3	Component 4	PM	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5
5300 Salaries professionals														
Operations officer	Month	60	2,917					174,991	174,991	34,998	34,998	34,998	34,998	34,998
Procurement Associate	Month	60	1,458					87,496	87,496	17,499	17,499	17,499	17,499	17,499
Financial associate	Month	60	1,458					87,496	87,496	17,499	17,499	17,499	17,499	17,499
5300 Sub-total salaries professionals				0	0	0	0	349,983	349,983	69,997	69,997	69,997	69,997	69,997
5570 International Consultants														
1 Law and Policy Specialist (Component 1 Tech Support)	Week	96	3,000	288,000					288,000	57,600	57,600	57,600	57,600	57,600
1 Climate Smart Agriculture Specialist (Component 2 Tech Support)	Week	50	3,000		150,000				150,000	30,000	30,000	30,000	30,000	30,000
1 Forest Specialist (Component 3 Tech Support)	Week	96	3,000			288,000			288,000	57,600	57,600	57,600	57,600	57,600
1 Public Awareness and Marketing Specialist (Component 4 Tech Support)	Week	10	3,000				30,000		30,000	6,000	6,000	6,000	6,000	6,000
1 Senior Technical Advisor	week	50	3,000	80,000	25,000	25,000	20,000		150,000	100,000	50,000			
Sub-total international Consultants				368,000	175,000	313,000	50,000	0	906,000	251,200	201,200	151,200	151,200	151,200
National consultants														
1 Law and Policy Specialist (Component 1 Team Leader)	Week	192	750	144,000					144,000	28,800	28,800	28,800	28,800	28,800
1 Climate Smart Agriculture Specialist (Component 2 Team Leader)	Week	240	750		180,000				180,000	36,000	36,000	36,000	36,000	36,000
1 Forest Specialist (Component 3 Team Leader)	Week	240	750			180,000			180,000	36,000	36,000	36,000	36,000	36,000
1 Public Awareness and Marketing Specialist (Component 4 Team Leader)	Week	100	750				75,000		75,000	15,000	15,000	15,000	15,000	15,000

Oracle code and description	BUDGET in USD									Expenditures by year				
	Unit	No. of units	Unit cost	Component 1	Component 2	Component 3	Component 4	PM	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5
1 National Technical Coordinator	week	240	1,000	60,000	60,000	60,000	60,000		240,000	48,000	48,000	48,000	48,000	48,000
1 Field Site Technical Assistant (Bayan)	week	240	600	36,000	36,000	36,000	36,000		144,000	28,800	28,800	28,800	28,800	28,800
1 Field Site Technical Assistant (Laputta)	week	240	600	36,000	36,000	36,000	36,000		144,000	28,800	28,800	28,800	28,800	28,800
Sub-total national Consultants				276,000	312,000	312,000	207,000	0	1,107,000	221,400	221,400	221,400	221,400	221,400
5570 Sub-total consultants				644,000	487,000	625,000	257,000	0	2,013,000	472,600	422,600	372,600	372,600	372,600
5650 Contracts														
Enabling Environment Assessment and Regulatory Strategy (Component 1 supported by law/policy team)	Lump-sum	1	10,000	10,000					10,000	10,000				
National forestry master plan update (Component 1 supported by law/policy and forestry team)	Lump-sum	1	6,000	6,000					6,000		6,000			
Agricultural master plan update (Component 1supported by law/policy and CSA team)	Lump-sum	1	6,000	6,000					6,000		6,000			
Ecosystem-based land use management program (Component 1)	Lump-sum	1	70,000	70,000					70,000			70,000		
CSA/SLM Implementation Strategy (Component 2)	Lump-sum	1	20,000		20,000				20,000	20,000				
National CSA/SLM Training Program (Component 2)	Lump-sum	1	250,000		250,000				250,000	50,000	50,000	50,000	50,000	50,000
National CSA Center Establishment (Component 2)	Lump-sum	1	200,000		200,000				200,000		100,000	100,000		
Township Level CSA/SLM Land Use Planning (Component 2)	Lump-sum	1	100,000		100,000				100,000	20,000	20,000	20,000	20,000	20,000
Farmer Field School Curriculum (Component 2)	Lump-sum	1	70,000		70,000				70,000		70,000			

Oracle code and description	BUDGET in USD									Expenditures by year				
	Unit	No. of units	Unit cost	Component 1	Component 2	Component 3	Component 4	PM	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5
Farmer Field School Trial Implementation (Component 2)	Lump-sum	1	70,000		70,000				70,000			35,000	35,000	
CSA Hand-Over Strategy (Component 2)	Lump-sum	1	20,000		20,000				20,000					20,000
National SFM Training Program (Component 3)	Lump-sum	1	350,000			350,000			350,000	70,000	70,000	70,000	70,000	70,000
SFM Planning Implementation Handbook (Component 3)	Lump-sum	1	35,000			35,000			35,000	35,000				
SFM Model Management Plans (Component 3)	Lump-sum	1	35,000			35,000			35,000	35,000				
Community Based Forestry Support Unit (Component 3)	Lump-sum	1	150,000			150,000			150,000			150,000		
Community Based Forestry Strategy and Education Materials (Component 3)	Lump-sum	1	70,000			70,000			70,000	70,000				
Community Training Program for SFM (Component 3)	Lump-sum	1	150,000			150,000			150,000		37,500	37,500	37,500	37,500
Community Based Forestry Model Implementation Program (Component 3)	Lump-sum	1	150,000			150,000			150,000		37,500	37,500	37,500	37,500
Replication and upscale strategy design and implementation (Component 4)	Lump-sum	1	15,000				15,000		15,000			5,000	5,000	5,000
Carbon monitoring EX-ACT (Components 2 and 3)	Lump-sum	2	20,000		20,000	20,000			40,000	8,000	8,000	8,000	8,000	8,000
Mid-term evaluation	Lump-sum	1	40,000				40,000		40,000			40,000		
Final evaluation	Lump-sum	1	30,000				30,000		30,000					30,000
5650 Sub-total Contracts				92,000	750,000	960,000	85,000	-	1,887,000	318,000	405,000	623,000	263,000	278,000
5900 Travel														
Field work		1	210,000	50,000	75,000	75,000	10,000		210,000	42,000	42,000	42,000	42,000	42,000
Local travel		1	235,000	50,000	75,000	75,000	35,000		235,000	47,000	47,000	47,000	47,000	47,000

Oracle code and description	BUDGET in USD									Expenditures by year				
	Unit	No. of units	Unit cost	Component 1	Component 2	Component 3	Component 4	PM	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5
International travel		1	210,000	50,000	50,000	75,000	35,000		210,000	42,000	42,000	42,000	42,000	42,000
5900 Sub-total travel				150,000	200,000	225,000	80,000	-	655,000	131,000	131,000	131,000	131,000	131,000
5020 Training and workshops														
SLM, SFM, CSA Technical Workshops (Component 1)			10,000	10,000					10,000	10,000				
Annual Project National Reporting Workshops (Component 4)		1	15,000				15,000		15,000	3,000	3,000	3,000	3,000	3,000
Inception Workshop (Components 1 - 4)		1	16,000	4,000	4,000	4,000	4,000		16,000	16,000				
Final workshop (Components 1 - 4)		1	16,000	4,000	4,000	4,000	4,000		16,000					16,000
5020 Sub-total training				18,000	8,000	8,000	23,000	-	57,000	29,000	3,000	3,000	3,000	19,000
6000 Expendable procurement														
CSA/SLM Tool Box (Component 2)		1	20,000		20,000				20,000	10,000	10,000			
Farmer Field School Teaching Materials (Component 2)		1	20,000		20,000				20,000	10,000	10,000			
Farmer Field School Demonstrations (Component 2)		1	240,000		240,000				240,000		60,000	60,000	60,000	60,000
Community-based Forestry Training Materials (Component 3)		1	70,000			70,000			70,000	35,000	35,000			
SFM Training Materials (Component 3)		1	70,000			70,000			70,000	35,000	35,000			
Community-based Forestry Demonstrations (Component 3)		1	330,000			330,000			330,000		82,500	82,500	82,500	82,500
Project marketing and replication materials (Component 4)		1	13,000				13,000		13,000	2,600	2,600	2,600	2,600	2,600

Oracle code and description	BUDGET in USD									Expenditures by year				
	Unit	No. of units	Unit cost	Component 1	Component 2	Component 3	Component 4	PM	Total GEF	Year 1	Year 2	Year 3	Year 4	Year 5
Technical Support Office Facilities (Components 1 - 4, PM)		1	40,000	3,000	17,000	17,000	3,000		40,000	8,000	8,000	8,000	8,000	8,000
Stationary and Consumables	Months	180	450	3,600	36,900	36,900	3,600		81,000	16,200	16,200	16,200	16,200	16,200
6000 Sub-total expendable procurement				6,600	333,900	523,900	19,600	-	884,000	116,800	259,300	169,300	169,300	169,300
6100 Non-expendable procurement														
Furniture, Common Equipment and Renovation	Sites	3	9,000	9,000	9,000	9,000			27,000	10,000	4,250	4,250	4,250	4,250
Computer Equipment, Electronics, Power Generation and Security	Sites	3	10,000		15,000	15,000			30,000	30,000				
Motorcycle (2 Sites: Nyaung Oo and Lattputta)	Sites	2	1,500		1,500	1,500			3,000	3,000				
6100 Sub-total non-expendable procurement				9,000	25,500	25,500	-	-	60,000	43,000	4,250	4,250	4,250	4,250
6300 GOE budget (5%)														
Vehicle rental and running cost including boat	Days	900	110	9,900	35,200	41,800	12,100		99,000	19,800	19,800	19,800	19,800	19,800
Communication (3 Sites)	Months	180	400	20,000	20,000	32,000			72,000	14,400	14,400	14,400	14,400	14,400
Utilities (3 Sites)	Months	180	450	9,000	31,500	40,500			81,000	16,200	16,200	16,200	16,200	16,200
Miscellaneous including contingencies				5,066	3,450	4,000	9,832		22,348	4,470	4,470	4,470	4,470	4,470
6300 Sub-total GOE budget				43,966	90,150	118,300	21,932	-	274,348					
TOTAL				963,566	1,894,550	2,485,700	486,532	349,983	6,180,331	1,180,397	1,290,897	1,373,147	1,013,147	1,044,147

Appendix 4: Risk Matrix

See tables in Sections 3.2.1

Appendix 5: Procurement Plan

To be determined at the project inception.

Appendix 6: Consultants to Be Hired Using GEF Resources*

Position Titles	USD/Person Week	Estimated Person Weeks	Tasks to be Performed
Outcome			
National/Local			
Law and Policy Specialist	USD 750	192	Component 1 Team Leader. Will be responsible for making certain that all Component 1 activities are implemented according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a strong background in natural resource management policy with a particular emphasis upon issues related to CC, SLM, and SFM.
Climate-Smart Agriculture Specialist	USD 750	240	Component 2 Team Leader. Will be responsible for making certain that all Component 2 activities are implemented according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a strong background climate smart agriculture. This will include an emphasis upon extension services and excellent knowledge/capacity for improving on-the-ground adoption of innovative approaches.
Forest Specialist	USD 750	240	Component 3 Team Leader Will be responsible for making certain that all Component 3 activities are implemented according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a strong background in sustainable forest management. This will include an emphasis upon ecosystem-based management, community-based management, and integrated forest planning.

* Full Terms of Reference will be developed for each position during project inception. Recruitment for all positions will commence at the earliest date possible.

Public Awareness and Marketing Specialist	USD 750	100	Component 4 Team Leader Will be responsible for making certain that all Component 4 activities are implemented according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a working knowledge of conservation issues, particularly SLM, CC, and SFM. Must have knowledge regarding the design and application of social media tools for rural community awareness building. Must have technical capacity and experience with the design and implementation of public awareness programming focused upon generating conservation impact.
National Technical Coordinator	USD 1000	240	Will coordinate technical inputs from the national consultants.
Field Site Technical Assistant (Laputta)	USD 600	240	Will support technical project aspects related to lowland pilot site CSA, SLM, and SFM.
Field Site Technical Assistant (Bayan)	USD 600	240	Will support technical project aspects related to dry zone and upland pilot sites CSA, SLM, and SFM.
International			
Law and Policy Specialist	USD 3000	96	Component 1 Team Technical support Person will make certain all Component 1 activities integrate and reflect best international principles and practices. Will implement activities according to the direction of the Project Document and subsequent project management direction. Specialist will have an exceptionally strong background in natural resource management policy with a particular emphasis upon issues related to CC, SLM, and SFM. Experience with community-based management and land use planning will be important.
Climate Smart Agriculture Specialist	USD 3000	50	Component 2 Technical Support Person will make certain all Component 2 activities integrate and reflect best international principles and practices. Will implement activities according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have an exceptionally strong background climate smart agriculture, including areas related to SLM and

			CC. This will include an emphasis upon extension services and excellent knowledge/capacity for improving on-the-ground adoption of innovative approaches. Must be knowledgeable in issues related to CC and measurement/achievement of CC benefits.
Forest Specialist	USD 3000	96	Component 3 Technical Support Person will make certain all Component 3 activities integrate and reflect best international principles and practices. Will implement activities according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a strong background in sustainable forest management. This will include an emphasis upon ecosystem-based management, community-based management, and integrated forest planning. Must be knowledgeable in issues related to CC and measurement/achievement of CC benefits.
Public Awareness and Marketing Specialist	USD 3000	10	Component 4 Technical Support Will be responsible for making certain that all Component 4 activities are implemented according to the direction of the Project Document and subsequent project management direction. Will provide support for other project components as necessary to insure execution reflects integrated, ecosystem-based approaches. Specialist will have a working knowledge of conservation issues, particularly SLM, CC, and SFM. Must have knowledge regarding the design and application of social media tools for rural community awareness building. Must have technical capacity and experience with the design and implementation of public awareness programming focused upon generating conservation impact.
Senior Technical Advisor	USD 3000	50	Will provide general technical oversight and advice to all aspects of project implementation. Will help all component staff to maintain direction. Will assist project to maximize impact relative to investment. Will assist as necessary with all technical project aspects, reporting on project progress, and provide project management, steering committee, and others with advice regarding project approach. Will assist with communication and coordination between project technical staff and stakeholders, including donor, government, civil society, and private interests. Will facilitate and bridge project at all key junctures, including inception, mid-term and final review. Will support the project manager with technical advice regarding approach, recruitment, and other aspects related to all components.

			Must have international experience with the design, implementation, and evaluation of GEF projects. Will have particular knowledge and proven track record of being able to work with multi-dimensional teams. Will have solid knowledge of natural resource management and particularly ecosystem-based SLM, CC, and CSA approaches.
For Project Management			
Local			
National Project Coordinator	GoM in-kind contribution	GoM in-kind contribu-tion	National project manager responsible to make certain all aspects of project delivery occur in a timely and professional manner. Will have working knowledge of all key project technical areas. Will have proven capacity to oversee the implementation of a complex, multi-disciplinary project.

Appendix 7: Extended Summary of Institutional, Policy and Regulatory Context

1. Project Relevant Institutional Management/Decision-Making Framework

Institution	Responsibilities
National	
Ministry of Agriculture and Irrigation	At present, the Ministry of Agriculture and Irrigation is composed of 10 institutions and departments: - Department of Agricultural Planning (DAP), - Department of Agriculture (DoA), - Department of Agriculture Research (DAR), - Irrigation Department (ID), - Settlement and Land Record Department (SLRD), - Department of Agriculture Mechanization (DAM), - Myanmar Agricultural Development Bank (MADB), - Myanmar Industrial Crop Development Department (MICDD), - Water Resource Utilization Department (WRUD) - Yezin Agriculture University (YAU) The main functions of MoAI are: provision and production of high-quality seeds; training and education; and research and development. Livestock and Forestry activities come under separate Ministries. Activities and direction are provided by the first Five Year short Term Plan (2011/12 to 2015/6) which describes implementation of the Twenty Year Long Term Plan (NCDP) (2011/12-2030/31). The primary objective of MoAI is to increase crop production. Since the new government assumed office on 30th March 2011, a number of national level initiatives have been undertaken for development policy and institutional reforms for accelerating growth, reducing poverty, and promoting human development in Myanmar. The Government has held at two national workshops: one on Rural Development and Poverty Alleviation (20-22 May 2011) and the other Reforms for National Economic Development (19-21 August 2011) in order to achieve national level policy and institutional reforms prioritized on the following main issues: Increased agricultural production to enhance food security. Improved food safety and quality. Sustainable management of natural resources and the environment. Human resource development and institutional capacity building. Rural livelihoods improvement and Poverty Reduction. Disaster preparedness and risk management. Mitigation and adaptation to climate change. DoA is the largest unit within MoAI, with a staffing of more than 14,000 and is comprised of 9 divisions responsible for a variety of field operations, including extension, research, seed multiplication, plant protection and land use. The agricultural research, seed and extension division of DoA operate 10 State farms, 20 research farms and 33 central and seed farms.
Department of Agricultural Research (DAR)	DAR is responsible for research and development in the fields of high yielding crop varieties, utilization of crop genetic resources and the generation of agricultural techniques for maximization of benefits and sustainable use of natural resources. DAR's mandate also covers the dissemination of improved crop varieties and agronomic technologies to farmers, together with development of human resources in agricultural research.

Settlement and Land Record Department (SLRD)	SLRD is responsible for all land management and land tax and conducts national field surveys for each cropping period, at which time land use, sown area and harvested area is determined.
Department of Agriculture (DoA)	DoA is the largest unit within MoAI, with a staffing of more than 14,000 and itself is comprised of 9 divisions responsible for a variety of field operations, including extension, research, seed multiplication, plant protection and land use. The agricultural research, seed and extension division of DoA operate 10 State farms, 20 research farms and 33 central and seed farms. Activities of DoA include (1) Production of good quality seed varieties for main crops which are rice, maize, groundnut, sesame, sunflower, mustard, pulses, vegetables and fruits; (2) Conducting training for farmers in production of good quality seed; (3) Organize training on advanced agricultural technologies and cultural practices of above mentioned crops in order to facilitate application and adoption of these techniques by farmers.
Myanmar Agricultural Development Bank (MADB)	MADB is responsible for agricultural loan for farmers in low interest rate in accordance with the monsoon and winter cropping seasons.
Irrigation Department (ID) and Water Resources Utilization Department (WRUD)	Since water has a direct or indirect relationship with poverty, governance, environmental, climate, power, agriculture, floods, food, education and culture etc., society cannot sustain nor stabilize life without managing water wisely and mitigating or solving water problems and water issue. Hence, the Government has formulated plans including water management plans for developing, modernizing, industrializing and promoting the quality of life for its people. Among the water potential of Myanmar, the principal water courses flowing separately in Myanmar comprise 4 major rivers, the Ayeyarwady (including Chindwin), Sittaung, Thanlwin and Bago. Their drainage area spreads rather extensively over the country, with some 876.73 million acre- ft (1,082 km) of water volume per annum from a drainage area of about 284,800 square miles (738,230 km). Another water resource is ground water. In Myanmar, where a perennial supply of surface water is not available, ground water is naturally utilized and sometimes rather costly. Ground water has a greater advantage over surface water as it is usually free from pathogenic organism and bacteria causing water related diseases. In accordance with the legislative framework for water environment management in Myanmar, it has no specific law to control water pollution. The only control of water pollution in the country is through guide lines issued in June 1994 by Myanmar Investment Commission, especially in the new investment projects. In Agriculture sector, the government and concerned ministries have banned use of some toxic pesticides and encouraged the utilization of conventional bio-fertilizers as a substitute for chemical fertilizers to mitigate water quality deterioration. Ministries and departments involved in the control of water quality have organized a forum of experts on water quality issues. Water resources management is the art of safeguarding a nation’s water, including rivers, lakes, wet land aquifers, estuaries and coastal water. Two very frequently used concepts in water resources management are "sustainable and environmental". Myanmar is set to define water quotas for changing trend and pattern of water use by different sectors in both immediate and long term future. MoAI has annually set the targets on the way of policy strictly executed by the agencies concerned of which the Irrigation development is also included. To meet the target of its own, the irrigation development is keeping up with the guidelines laid down by the ministry’s policy as; 1)To develop the upstream (resource) and downstream (canal system)including the on-farm facilities simultaneously by participants of farmers in construction and maintenance of tertiary units

	2)To establish the water users association (WUA) in each level of newly developed irrigation system, to strengthen the existing water users association and to support the farmers' autonomous irrigation system for sustainable development of irrigation 3)To support the farmers to have more efficient and effective water use practice in on-farm level and have an equity of water allocation or adoption of farmers preferable water allocation system
Yezin Agricultural University (YAU)	YAU, which offers both B.Sc and M.Sc courses, is the only tertiary agricultural education institute in Myanmar. Cf. Stakeholder table
Central Farmland Management Body	The authority and duties of the Central Farmland Management body includes: to scrutinize all cases in accordance with law in respect of the right to work farmland for registration, transferring, recording of transfers in register book, to review and settle land disputes, as well cases of appeal and revision; to conduct valuation and registration of deeds at the relevant department office for farmland to which the right to work is to be transferred; to supervise compliance with the prescribed regulations of the right to work farmland and to take action for any breach of the regulations; to revoke the right to work farmland; Whosoever fails to comply with the lawful actions undertaken by the Farmland Management Board at various levels constituted under this law shall be liable to legal action at the relevant court. Every member of the Farmland Management Body at various levels constituted under this law shall be deemed to be a public servant within the meaning of section 21 of the Penal Code. No suit, prosecution or other proceedings shall lie in court against any member of Farmland Management Body constituted under section 11 of this law for action carried out in conformity with this law or rules and regulations of this law. The Central Farmland Management Body consists of: Union Minister for Ministry of Agriculture and Irrigation as a Chairman, Deputy Minister for Ministry of Agriculture and Irrigation as Vice Chairman, Director General for the Settlement and Land Records Department as Secretary the relevant government department officials as members of the body;
Ministry of Environmental Conservation and Forestry (MOECAF)	The Ministry of Environmental Conservation and Forestry (MOECAF) is responsible for managing all forestlands in the country including the Permanent Forest Estate (PFE) and Public Forests. MOECAF develops the forest policy and legal frameworks and coordinates Climate Change related policy analysis and development. The ministry contributes to UNFCCC negotiations through the Ministry of Foreign Affairs (MOFA) and is in charge of developing the National Communications to the Convention. MOECAF is also in charge of environmental protection including the development and implementation of rules relating to Environmental and Social Impact Assessments (ESIA). MOECAF is headed by the Union Minister for Environment Conservation and Forestry, who is assisted by two Deputy Ministers, one for Forestry and one for Environment. There are six Departments under MOECAF: the Forest Department (including the University of Forestry); the Dry Zone Greening Department; the Survey Department; the Environmental Conservation Department; the Planning and Statistics Department; and the Myanmar Timber Enterprise.
Forest Department (FD)	Primary authority responsible for administering Reserved Forest lands. The Forestry Department also has delegated authority over areas of land classified as Protected Public Forest and Public Forest. The FD is responsible for the protection and conservation of biodiversity and the sustainable management of forest resources in the country; The FD is divided into: - Planning and Statistics Division - Watershed Management Division

	- Extension Division - Training and Research Division - Budget Division - Wildlife Conservation Division - Natural Forest and Plantation Division - Administrative Division - Zoological Gardens - Forest Research Institute - Inspection Division - University of Forestry 15 sub-national Offices covering all States and Regions and including 64 District Offices covering the management of Reserved Forests around the country. District Offices are sub-divided into township offices.
Dry Zone Greening Department (DZGD)	Responsible for reforestation of degraded forest lands, protection and conservation of remaining natural forests, and restoration of the environment in the Dry Zone of Central Myanmar; The DZGD is divided into: - Projects Division - Engineering Division - Administrative Division 3 sub-national Offices covering the Mandalay, Sagaing and Magway Regions
Survey Department (SD)	Responsible for producing UTM maps and for conducting land surveys in major cities; The SD is divided into: - Administration Division - Training Division - Boundary Survey Division - Aerial Survey Division - Photogrammetry Division - Map Reproduction Division
Environmental Conservation Department (ECD)	A newly created Department responsible for Environmental and Social Impact Assessments (EIA) of investments and the development of the National Communications to UNFCCC; The ECD is divided into: - Administrative Division - Policy, International Relations, Training and Research Division - Pollution Control Division - Natural Resources Conservation and EIA Division 5 sub-national Offices (Yangon, Mandalay, Ayeyawady, Sagaing and Tanintharyi Regions with plans to expand in all States and Regions).
Planning and Statistics Department (PSD)	Coordinates and facilitates the tasks of other MOECAF Departments and deals mainly with policy matters; The PSD is divided into: - Policy and Planning Division - Commerce and International Cooperation Division - Environment Division
Myanmar Timber Enterprise (MTE)	The MTE is responsible for conducting logging operations both directly or through private contractors and for milling, marketing and export of timber and other wood products. MTE consists of 8 departments to support operations. They are Extraction Department, Export milling & Marketing department, Wood-based industries department, Planning & Statistic department, Engineering department, Budget & Accounting department and Administration department. The MTE's Extraction

	Department has sub-national Offices in all States and Regions but presence at district and township level depends on the potential and intensity of timber harvesting operations. The MTE also runs three Training Schools. School No. 1 was established in Nanchun in 1980 and with annual intake of 20-25 trainees. Subjects include timber harvesting, elephant care and management, fieldwork and office procedures. School No. 2 is in Nay Pyi Taw and has an annual intake of 25-30 trainees. Subjects include basic driving and handling and operator courses for heavy forestry machinery. School No. 3 is in Yangon and has an annual intake of 25 trainees. Subjects include timber milling, marketing, export and management.
University of Forestry	In Yezin and offers Bachelor of Science, Post-graduate diplomas, Master's and PhD degrees in Forestry. Annual intake around 200 students to Bachelor degree. Total staffing of 180.
Forest Research Institute	Created in 1978 (Yezin) and consists of three divisions: the Forestry Development Division, the Administration and Budget Division and the Forest Utilization Division. Total staffing of 173 including 53 researchers.
Myanmar Forest School	Located in Pyin Oo Lwin, the school trains graduates who are generally recruited as junior Forestry Staff and who play a significant role in the implementation of forest management activities in the country.
Central Forestry Development Training Centre	Established in Hmawbi (Yangon) in 1990 with sub-centre (established more recently) focused on Community Forestry and Community Participation in Mandalay.
Inter-ministerial National Committee on Land Scrutiny and Land Allocation (CLSLA)	This cabinet level committee was established in July 2012 and is chaired by MOECAF. The Committee's work focuses on issues related to national land-use policy, land-use planning and allocation of land for investment including in agricultural projects in the country.
Land Confiscation Inquiry Commission	This parliamentary commission was established in July 2012 and will focus on issues relating to land confiscation in the country, specifically whether land confiscation has been carried out in compliance with existing law, if land acquired has been utilized for its intended purpose, and if adequate compensation was paid to those whose land was acquired.
Myanmar Forest Certification Committee (MFCC)	MOECAF established the MFCC in July 2013, replacing the Timber Certification Committee of Myanmar (TCCM). The new committee is more broad-based as it includes members from other ministries including Health, Labour; National Planning, Science and Technology; Attorney General's Office; national NGOs and the Myanmar Timber Merchants Association (MTMA). An MTMA representative has been assigned as Secretary of the MFCC, demonstrating the commitment of MOECAF to wider participation of private sector participation in decision-making in the forest sector.
The Central Committee for the Management of Vacant, Fallow and Virgin Lands (CCVFV)	The Central Committee for the Management of Vacant, Fallow and Virgin Lands (CCVFV) is a national level multi-ministerial committee formed at the President's discretion, in accordance with Article 3 of the VFV Law. The Minister of Agriculture and Irrigation is appointed as Chairperson of the CCVFV; and the Director General of the SLRD acts as the Secretary of the CCVFV. The MOECAF is a member of the CCVFV. The CCVFV overseas the granting and monitoring of use rights over VFV lands in the country for agriculture, mining and "allowable other purposes" under the law, in coordination with concerned Ministries and Regional or State Governments. VFV lands do not include the gazette Permanent Forest Estate (PFE) under the direct responsibility of MOECAF but does include forest lands which are not gazette or reserved and therefore not included in the PFE. The CCVFV is specifically responsible for:

	- Receiving recommendations for the use of VFV land from various Ministries and Regional or State Governments; - Receiving applications for the use of VFV land from public citizens, private sector investors, government entities and NGOs; - Rejecting applications or Grant "Permission Orders" for the use of VFV lands; - Rescinding or modify rights to use VFV land; - Coordinating with MOECAF and other Ministries to prevent damage or destruction to forest lands and conserve natural regions, watershed areas and natural fisheries; - Submitting semi-annual monitoring reports on the use of VFV to the Cabinet of the Union Government; - Providing input on the formulation of National Land Policy; - Fixing the rate of security fees to be deposited for use of VFV land; - Fixing the annual land revenue rate and suitable period for tax exemption in connection with the use of VFV land; - Organizing and delegate responsibilities to Task Forces and Special Groups for use of VFV land at the Regional and State level of Government; - Helping those with rights to VFV land secure assistance upon request (technical assistance, inputs, loans etc.); - Resolving disputes related to the use of VFV land in coordination with other government departments and agencies.
The National Environmental Conservation Committee (NECC)	A National Commission for Environmental Affairs (NCEA) was established in 1990 to address environmental issues more efficiently and with the following specific roles: - advise the government on environmental policies - act as a coordinating body for environmental affairs - promote environmentally sound sustainable development The NCEA was reorganized into the National Environmental Conservation Committee (NECC) in April 2011 based on Notification No.21/2011, (20/04/2011) of the Office of the President. The NECC is considered responsible for guiding national activities to tackle climate change-related problems. Furthermore, the NECC manages and coordinates all climate change related activities in Myanmar, including the development of climate change related policies and strategies and corresponding programmes of action (e.g. NAPA). The following specialized committees were formed under the NECC: - Committee on Conservation of Natural Resources - Committee on Control of Pollution - Committee on Research, Education and Information and - Committee on International Cooperation The overarching responsibilities of the NECC are: 1) To take actions to prevent environmental damage and ensure environmental sustainability; 2) To supervise and oversee rehabilitation activities in relevant areas based on the magnitude and intensity of impacts caused by government projects and activities or commercial and private activities; 3) To participate in and promote actions towards international collaboration & cooperation relating to environmental conservation; 4) To approve activities on Urban Management Planning; 5) To facilitate and negotiate among government agencies and institutions to find solutions to environmental problems; 6) To organize Special Task Force(s) with ToRs to implement conservation activities effectively and efficiently, if necessary; 7) To take actions on task and duties given by Cabinet.

	The NECC is allowed to undertake the following activities & actions to fulfil these responsibilities: - Conducting various types of awareness campaigns; - Coordinating with relevant departments to amend or add environmental conservation in the curriculum of the National Education System; - Receiving donations (funds and materials/equipment) from national and international sources and managing these for environmental protection & conservation; - Advocating and providing recommendations to government agencies and institutions; - Requesting proposals and comments from government agencies and institutions in order to promote environmental conservation; - Prohibiting activities of government agencies and institutions which do or could cause environmental damage and debriefing the President's Office to develop corresponding policies; - Prescribing National Environmental Policy and other environmental related policies with approval of the President; - Issuing Notifications, Orders and Instructions with approval of the President, if necessary. The NECC is in a position to establish working committees at the Union Level and sub-committees at the State & Division levels. This includes the development of corresponding ToRs. The NECC submits reports to the Cabinet when appropriate.
The CDM Designated National Authority (DNA)	The Government of Myanmar signed the UNFCCC on 11 June 1992 and ratified the convention on 25 November 1994 and the Kyoto Protocol in 2003 as a non-Annex 1 party. The Clean Development Mechanism (CDM) Designated National Authority (DNA) was created in 2006 to develop CDM-related policy and to review and approve CDM project proposals. The DNA is chaired by the Union Minister of MOECAF and the vice-Chair is MOECAF's Deputy Minister. The 22 members are Director Generals or Deputy Director Generals of the 15 concerned Ministries including MOECAF, MoAI, MoNPED, MoEP, MoI, , MoC, and MoM. Secretarial support is provided by MOECAF's Forest Department.
Ministry of National Planning and Economic Development (MoNPED)	The MoNPED coordinates amongst ministries on development issues and is responsible for meeting national economic development targets (e.g. poverty reduction targets). The ministry links national and local development plans and planning processes; Promotes and manages Foreign Direct Investments. Moreover, it is a key stakeholder in term of data collection.
Ministry of Foreign Affairs	Represents Myanmar at UNFCCC and Coordinates with ASEAN.
Ministry of Home Affairs)/Attorney General	Responsible for law enforcement and Administration at state/region level.
Ministry of Finance	The MoF is in charge of Budget allocation, distribution and control and of Auditing national budget and ODA.
Ministry of Mining	Management of mining companies (prospecting and extraction).
Ministry of Electric Power	Management of hydro-power development.
Ministry of Fisheries and Livestock	Management of fisheries resources within mangrove forest; River management within forest areas; Rural development and livelihoods improvement programmes in mangroves.
Ministry of Industries	Established industrial plantations for the production of raw materials; Oversees biofuel policy development and programme implementation.

State (Region)	
1)DoA 2)SLRD	Responsibilities will be in line with the National level in 7 Regions and 7 States. Regional or State level Directors will lead the Districts and Townships Staff Officers inter Regions and States of DoA and SLRD.
Dry Zone Greening Department	The DZGD operates in the three regions of the central dry zone of Myanmar; Sagaing, Mandalay and Magway. The division level offices are responsible for supervision of four main tasks; Establishment of forest plantations to resist desertification and to supply forest products for local livelihood needs Protection of remaining natural forests Introducing and promotion of the utilization of wood fuel substitutes Management and development of water resources
Region or State Farm Land Management Body	These bodies shall be constituted by the approval of Central Farmland Management Body, and may be reconstituted periodically; The responsibilities and authorities shall be described in Chapter 6 for the Region or State level. Regional or State Prime Minister as Chairperson, Director of SLRD as Secretary and relevant government department officials as members of the body.
Forest Department	At state or division level, the FD is responsible for managing and supervising all forests and forest products. The state/division FD office cooperates with district level FD to meet the objectives set at national level and provides instructions to district level officials accordingly.
Land Use Advisory Committees	At State/Region, District, and Township levels, Land-use Advisory Committees have been, or are being, established to conduct work on behalf of the national CLSLA. These sub-national committees will include civil society and private sector representatives, although in many locations these committees do not yet exist.
District and Township level	
1)DoA 2)SLRD	Responsibilities will be in line with the National and Regional or State level in relevant Districts and Townships of 7 Regions and 7 States. District level Staff Officer will lead the Townships Staff Officers inter District DoA and SLRD.
District and Township Farm Land Management Body	These bodies shall be constituted by the approval of Central Farmland Management Body, and may be reconstituted periodically. The responsibilities and authorities will be described in Chapter 6 for the District or Township level. District or Township General Administrator as Chairperson, District or Township Staff Officer of SLRD as Secretary and relevant government department officials as members of the body.
Township level Development Supporting Committee	This body has been organized to support, check and balance the development activities in each township. It is composed of nine members, including 2 people elected by ward and village tract administrators, 5 people selected from township business groups, township civil society groups, township based NGOs, farmers group and workers groups and 2 government officers; CEO from township development department and deputy staff officer from General Administrative department. Chairperson and Secretary are elected from the CSOs, not from Government staff members.
Forest Department	Responsible for preparation of 30-year long-term forest management plan, revised every 10 years plan. These plans are based on 5 working circles;

	1) Production working circle 2) Plantation working circle 3) Local supply working circle 4) Watershed working circle 5) Non-wood forest working circle District level FD is also responsible for supervision and management of township FD activities, forest conservation and protection. At township level, the FD is responsible for the management and protection of RF and PPF in the township in accordance with prevailing law and policy. It also develops and implements annual work plans for forest rehabilitation, including plantation, conservation and natural forest improvement operations. Proposals for handover of forest areas for community forestry are also the responsibility of township FD, as well as provision of technical and administrative support to the communities involved. In RF, the township FD is responsible for marking trees for harvesting, preparing for and supervising harvesting operations. In PPF, the FD conducts inventories, surveys, boundary demarcation, fire protection, and is responsible for engagement of local communities in forest management.
MTE	MTE is responsible for timber harvesting, milling, and downstream processing. MTE works with the private sector, including foreign enterprises, to export value-added, semi-processed forest products. Felling is done within the bounds of prescription by the FD, and according to the production working circle of district-level management plans. Skidding or dragging is done by elephants in the rainy season and trucking of timber is carried out in the dry weather.
DZGD	At township level, the DZGD are responsible for planning and implementing operations to support the four main work areas defined at division level. This includes establishment and protection of plantations of dry zone species, promotion and distribution of improved cook stoves and fuel briquettes made from manure and agricultural residues. Under the work area of water resources development, DZGD township officers are responsible for the construction of ponds, wells and pumping systems to enhance water supply for drinking and irrigation.
Village and Community level	
1)DoA 2)SLRD	Village tract Assistant Staff officers from concerned DoA and SLRD have to implement the instruction of Township staff officer at ground level.
Village tract Development Supporting Committee	The village tract development supporting committee's role is to support, check and balance the development activities in each village. This body is formed with 5 members and one chairperson elected from the leaders of each 100 Households from the villages of a village tract.
Community Based Organizations such as Tribal Groups in Chin State (Pilot Site 1)	Land tenure systems are diverse and relatively complex in Chin State. There are 5 main tenure systems which are different from one location to another: 1) Around Mindat Town; Uplands are owned by a few landlords. Most farmers are sharecroppers. Before taking one plot they first have to pay a 'right of user' fee to the landlord (usually one pot of rice alcohol and a pair of chickens). After the harvest, farmers have to pay 10% of their crop. This system tends to change for a new one in which farmers rent the land and have to pay a fixed amount in cash (about 10,000 MMK per acre). 2) North-west of Mindat Township; Land is under customary law in which each clan has its own land and allocates some to its members. When a family wants to cultivate a piece of land that belongs to another clan, they have to sharecrop it and pay 10 % of the crop. 3) Northern part of Mindat; The northern part of Mindat is close to Matubi Township. The level of development and wealth seems to be higher than in

	the rest of the township. In this area, almost all of farmers have access t land. It is also common for landowners to share their land with landless farmers (free of charge). 4) Around Kanpetlet; In this area a majority of farmers own land. There are few landless farmers who sharecrop: for a small piece of land (< 0.5 acre) they have to make in-kind donations (e.g. one pot of raw millet wine and some chicken); for a standard upland plot (3 to 5 acres) they have to pay 10 % of yield. 5) North-West of Kanpetlet; In some villages of Kanpetlet Township, the village community collectively owns the land. Farmers from other villages cannot access it. With population increase, this leads some farmers to move to other places and create new villages. Due to above mentioned land tenure system, the leaders of tribal groups are in important role of major livelihood activity, slash and burn cultivation practice in Chin state.
Village tract Farm Land Management Body	These bodies shall be constituted by the approval of Central Farmland Management Body , and may be reconstituted periodically; The responsibilities and authorities shall be described in Chapter 6 for the Village tract level. : Villager tract Administrator as Chairperson, Assistant Township Staff Officer of SLRD as Secretary and Farmer representative and respective person by community people as members of the body;
Farmers Union or Farmers Association	This body has been formed by relevant local farmers and fair and freely elected Chairperson, Secretary and Executive members. The body has to carry out the benefit of constituted farmers at community level.
Forest Users Groups (FUGs)	Community Forest User Groups (FUGs) can be formed by groups of local households that would like to establish Community Forestry according to the CFI 1995. The FUG is responsible for developing and implementing the CF management plan, although in practice they are heavily reliant on township FD and civil society organizations.

2. Project Relevant Policy and Planning Framework

Title of Policy, Strategy, or Plan	Adoption Date	Description/Assessment of relevant strategy, policy or plan
National		
The first national communication to the UNFCCC	2012	The first national communication to the UNFCCC was prepared with funding from GEF/ UNEP and overseen by the National Commission for Environmental Affairs (NCEA) of Myanmar. Although this report forms the INC report for Myanmar, it was prepared with components that cover most of the contents of the Second National Communication. To integrate environment and development, particular emphasis was placed on key economic sectors for which GHG inventory was undertaken for the preparation of Myanmar's first Initial National Communication. These economic sectors are: 1. Energy 2. Industrial processes 3. Agriculture including livestock 4. Land use change and forestry 5. Waste

National Adaptation Programme of Action (NAPA)	2012	The overarching goal of the NAPA is to identify and communicate immediate and urgent adaptation needs (Priority Adaptation Projects) for implementation in Myanmar that will enable the country to adapt to the impacts of climate change and build resilience of vulnerable communities. The NAPA was developed following Myanmar's Initial National Communication (INC) to the UNFCCC in 2011. The objectives of the NAPA are: • To communicate observed and projected climate change impacts in Myanmar; • To prioritize adaptation projects for eight main sectors/themes, namely Agriculture, Early Warning Systems, Forest, Public Health, Water Resources, Coastal Zone, Energy and Industry, and Biodiversity; • To assist Myanmar in achieving its national development goals and strategies, including the Myanmar Agenda 21, the National Sustainable Development Strategy (2009), and the Millennium Development Goals; and • To communicate NAPA Priority Adaptation Projects for implementation in Myanmar for addressing immediate climate change adaptation needs and thereby building the climate change resilience of vulnerable communities.
The Fifth National Economic and Social Development Plan 2011/12-2015/16.	2011	The Fifth National Economic and Social Development Plan sets a vision for the country to become a peaceful, modern and developed nation. Some immediate objectives set for the financial year 2011-2012 include: i) continuation of the infrastructure development, ii) development of border areas, iii) development of rural areas, iv) poverty alleviation, v) achieving MDGs 1 and 7, and vi) maintaining good economic foundations and financial conditions. To achieve these objectives, the following planned interventions, relating to the agriculture, livestock, fisheries and forestry sectors, are prioritized for implementation in 2011-2012 to: • Encourage the establishment of agriculture-based industries and other industries for building an industrialized nation. • Expand agriculture, livestock and fishery sectors in order to meet ever-increasing local demand and to promote exports. • Endeavour to meet the targeted yields of designated crops. • Expand new cultivable land for agricultural use. • Address shortages in edible oil and lubricant oil. • Promote widespread use of biodiesel to supplement lubricant and fuel needs. • Restore and expand forest area coverage. • Conserve natural resources and protect the environment.
National Strategy on Rural Development and Poverty Alleviation	2011	The government's National Strategy on Rural Development and Poverty Alleviation focuses on the following eight priority areas: 1) agriculture production; 2) livestock and fisheries production; 3) rural productivity and cottage industry; 4) micro savings and credit enterprises; 5) rural cooperatives; 6) rural socio economy; 7) rural renewable energy; and 8) environmental conservation.
UN Strategic Framework for Myanmar 2011-2015.	2011	UN Strategic Framework for Myanmar 2011-2015. Developed through a consultative process initiated in 2008, involving the government, local and international NGOs, donors and members of the diplomatic community. Twelve ministries appointed focal points, some at Director-General level, to engage with the UNCT in the strategic planning process. The strategy identifies thirteen outcome level results grouped under four strategic priority areas. The results are expected from the joint efforts of

		two or more UN agencies, alongside the actions of the Government and other partners. The four strategic priorities are: Strategic priority1: Encourage inclusive growth (both rural and urban), including agricultural development and enhancement of employment opportunities (contributing to MDG 1 and with repercussions for MDGs 2,3,4,5,6 and 7). Strategic priority 2: Increase equitable access to quality social services (contributing to MDG 2,3,4,5 and 6, with repercussions on MDG 1). Strategic priority 3 Reduce vulnerability to natural disasters and climate change (contributing to MDG 7). Strategic priority 4: Promote good governance and strengthen democratic institutions and human rights (foundation for progress on all MDGs, including MDG 8).
National Biodiversity Strategy and Action Plan (NBSAP)	2011	NBSAP Myanmar is a commitment of the Government and its people to the sustainable use of biological resources and to the fulfillment of Myanmar's obligations, as a member country, to the Convention on Biological Diversity (CBD). Conserving biodiversity not only helps secure the livelihoods of a major proportion of the population, but also enhances the range of opportunities for economic prosperity and sustainable development of the nation. Therefore, the goal of the NBSAP is to provide a strategic planning framework for the effective and efficient conservation and management of biodiversity and natural resources with greater transparency, accountability and equity. Two specific objectives are set out: • To set the priorities for conservation investment in biodiversity management. • To develop the range of options for addressing the issue of biodiversity conservation.
National Strategic Work Plans for the Rural Development and Poverty Alleviation	2011	The government of Myanmar is striving to adopt prudent approaches for the national development plans on Rural Development and Poverty Alleviation with concerted efforts since after forming the new Government on 31 March 2011 through democratic election process by the people. However, poverty rate of Myanmar must be reduced by half in a period between 1990 and 2015 according to UN Millennium Development Goal-1. This is why Myanmar's poverty rate must be reduced by 16% by 2015. Eight priority tasks have been identified to take forward implementation of rural development and poverty alleviation: - Development of the agricultural sector - Development of the livestock breeding sector - Development of rural products and cottage industries and income generation activities - Development of micro-finance - Development of rural cooperative societies - Development of rural socio-economy - Development of rural energy - Environmental Conservation In order to implement these (8) tasks effectively and successfully, the following four committees were formed: 1) Union level Central Committee for Rural Development and Poverty Alleviation 2) Work Committee for Rural Development and Poverty Alleviation 3) Region/ State level Work Committees for Rural Development and Poverty Alleviation

		4) Nay Pyi Taw Council for Rural Development and Poverty Alleviation These additional subcommittees were formed under the Central Work Committee to implement the identified eight sectors: - Development of Agriculture production committee - Development of Livestock/fishery production committee - Development of Small-agro industry committee - Development of Private Micro-credit scheme committee - Development of Cooperative activities committee - Development of Rural Socio-economic committee - Rural Energy Development committee - Environmental Conservation committee Out of these (8) subcommittees, Union Minister for Agriculture and Irrigation will take charge as Chairman of Development of Agriculture Production Committee, Deputy Union Ministers for Agriculture and Irrigation as Vice-Chairman and Director-General, Department of Agriculture as Secretary and each Region/State Ministers for Agriculture, Livestock and Fishery are included as members respectively. The Development of Agriculture Production Committee has been laid down the following strategies to implement throughout the country for the development of agriculture production sector: Distribution of economically viable high-yielding varieties and registered seeds to the farmers and land-owners which will also link to increase income generations and job opportunities for the land less farmers. To establish Model Farms and provision of training and education on Good Agriculture Practice (GAP) to the farmers in order to increase the quality and yield of various crops align with specific agro-ecological zones. To establish Research Farms for production of improved quality seeds and high yielding varieties of specific crops through Good Agriculture Practice. In addition, continuous Research & Development activities will be carried out till the farmers gain trust on those advanced methods. For transformation of conventional into mechanized farming method, Land Consolidation and Development activities are being implemented as follow: - Construction of farm-roads in the field. - Building irrigation and drainage tracks beside the farm-roads. - Transforming existing farm lands into one acre standardized plot for land consolidation. - Distribution of required farm machineries (tractor, transplanting machine, ploughing equipment, threshing machine and farm subsidies) to farmers by instalment system.
National Sustainable Development Strategy (NSDS)	2009	The National Sustainable Development Strategy (NSDS) for Myanmar has been prepared to provide a strategic long□term framework for sustainable development. The National Commission for Environmental Affairs (NCEA) has taken a lead in developing the NSDS in consultation with concerned Line Ministries and relevant organizations. The Myanmar NSDS is formulated to meet its global commitment made at the Johannesburg Plan of Implementation in 2002. The three goals of the NSDS are identified are as follows: Goal1: Sustainable Management of Natural Resources; Goal 2: Integrated Economic Development; and Goal 3: Sustainable Social Development.
National Action Plan (NAP) to	2005	Myanmar developed the NAP to combat desertification in its capacity as a party to the UNCCD. The main objectives of the NAP are:

Combat Desertification		- To enhance the place of forestry and woody vegetation within sound land husbandry, so as to ensure that the whole system contributes effectively to the production of goods and services and to the wider aim of food security; - To enhance the benefits to the community by appropriate use of forest resources and to involve the community in their expansion, diversification, management, conservation and rehabilitation; - To create awareness among politicians and the public of the contribution of forestry to sustained use of the resource base; to minimize damage and degradation caused by desertification, salinity, droughts and torrential phenomena to food security and rural development; - To ensure that forestry is made a vital part of national plans regarding food security, conservation and prevention of desertification.
The Agriculture Sector Review	2004	The Agriculture Sector Review undertaken in 2004 recommended focus on: 1) developing a consolidated database on rural statistics, 2) developing poverty profile for all townships, 3) mainstreaming of landless households, 4) addressing land tenure right issues, 5) developing potentially viable livelihood options, 6) developing viable farming system options, 7) investing more on rural infrastructure development, and 8) improving access to education and health services for rural population.
Millennium Development Goals (MDGs).	2000	As a signatory to the Millennium Declaration since September 2000, Myanmar is committed to the achievement of the Millennium Development Goals (MDGs). Myanmar has witnessed dramatic and progressive changes over the past few years that are in line with the international development agenda and MDGs. In general progress has been made towards the attainment of the MDGs, particularly over the past two and half years. There has been more improvement in some areas while significant challenges remain in a few. Goal 1 and Goal 7 are particularly relevant to the GEF priorities of introduction of improved cropland management, sustainable land management and sustainable agriculture and sustainable forest management. MDG 1, Eradicate extreme poverty and hunger and related goals; MDG 4, Reduce child mortality and MDG 5, improve maternal health. Myanmar has made notable progress in poverty and hunger reduction. Between 2005 and 2010, the incidence of poverty fell from 32 to 26 %, and the employment/ population ratio increased from 54.3 to 57.1 percent. 23% of children in Myanmar under the age of five are moderately underweight and 5.6 % are severely underweight. Improvements in the nutritional status of children have been slow. The government's target to reduce poverty to 16 % by 2015 could be achieved, based on past trends, if the forecasted growth continues. This growth needs to include improvements in agricultural output and productivity, improvement in the livestock and fisheries sector, as well as accelerated reforms and effective assistance by development partners. The government has given priority to rural development and poverty alleviation by focusing on the development of agricultural small-scale rural productivity, livestock breeding and fisheries. Focus is also given to the improvement of microfinance institutions, the development of cooperatives and the rural socio-economy, rural energy and, environmental conservation. The National Plan of Action for Food and Nutrition (NAPFN) aims to reduce the prevalence of underweight children less than five years of age and the proportion of the population below the minimum level of dietary energy consumption. Social protection services will have to be extended to a larger percentage of the active population to realize this aim. MDG 7, Ensuring environmental sustainability.

		The government is working towards this goal, through pro-active integration of sustainable practices into the country's policies. Many positive outcomes have been shown through good practice in biodiversity conservation activities, realized by cooperation between the government sector and international and local NGOs. Overall access to improved water supply and sanitation facilities has been enhanced through various projects. The government is committed to protecting Myanmar's biodiversity, conserving natural forests, greening wide areas in the dry zone, encouraging people to get involved in environmental conservation and management, and extracting natural resources sustainably. Effective policies of land acquisition and regulation are being put in place to ensure that the process of natural resource extraction and utilization does not adversely affect people.
Myanmar Agenda 21	1997	Myanmar Agenda 21: For the implementation of Myanmar Environment Policy, Myanmar Agenda 21 was adopted with the purpose of mobilizing and focusing national efforts to achieve sustainable development. This is the expression of the political commitment of the Government to sustainable development.
Forest Policy	1995	The Forest Policy of 1995 describes Myanmar's forest sector as a means for enhancing socio-economic development, and ensuring ecological balance and environmental stability. The policy identified six roles of the forest sector which contribute to the achievement of broader national goals and objectives. These are: • Protection of soil, water, wildlife, biodiversity and environment. • Sustainability of forest resources to ensure perpetual supply of both tangible and intangible benefits accrued from the forests for the present and future generations. • Basic Needs of the people for fuel, shelter, food and recreation • Efficiency to harness in a socio-environmentally friendly manner, the full economic potential of the forest resources • Participation of the people in the conservation and utilization of the forests • Public Awareness about the vital role of the forests in the wellbeing and socio-economic development of the nation. Objectives and Measures within the Forest Policy cover forest land use, protection and management; regeneration and afforestation; forest inventory, marketing and trade; forest research; forestry planning; institutional strengthening; budget and finance; and people's participation and awareness.
Community Forestry Instruction (CFI).	1995	The CFI of 1995 provided the administrative basis for the handover of forest land for management and use by communities but has not yet been incorporated into law. The objective of the CFI was to contribute to the economic development of the country by regaining environmental stability and addressing basic needs of local communities. The purpose was to encourage active participation of the rural population in plantation of barren lands and reforestation of degraded areas. The instruction grants the local communities tenure rights over trees and forest land for an initial 30 year period, which is extendable. The Forest Department is responsible for providing technical assistance and leadership in the execution of the CFI. The CFI outlines the areas where CF can be established, application process for CF, allocation of land, duration and terms of land lease for CF, preparation of the CF management plan, assistance to be provided from the FD, responsibilities of the FUG and prohibitions on exploitation of forest products from CF. The CFI also provided template forms for CF application, CF management plan, CF certificate of establishment and CF progress report.
Land Use Policy		There are 112 different laws and regulations relating to land use in Myanmar, going back to 1876, with the latest being the VFV Law 2012. The CLSLA has developed a roadmap designed to lead towards a unified Land Use Policy. A

		first full draft of this policy is due to be presented to the President in April 2014.

3. Project Relevant Legal/Regulatory Framework

Law or Regulation Title	Date of adoption	Description/Assessment of Law/Regulation
National		
The Vacant, Fallow and Virgin Land Management Law	2012	This law constitutes chapters. Chapter 1, Name and Definition, Chapter 2, Formation of Vacant, Fallow and Virgin Lands Management Central Committee, Chapter 3, Right to do Land, Right to Utilize Land on Vacant, Fallow and Virgin Lands, Chapter 4, Condition in Accordance with Right to Do, Right to Utilize Land of Vacant, Fallow and Virgin Lands, Chapter 5, Security Fees and Land Revenue, Chapter 6, Conditions Shall be by Person who is Granted the Right to Use the Vacant, Fallow and Virgin Lands, Chapter 7, Supervision, Chapter 8, Giving Help to Persons who are Granted Right to Use of Vacant, Fallow and Virgin Lands, Chapter 9, Offences and Penalties, Chapter 10, General Provision are described. GEF project relevant/regulatory framework contained in (chapters 3 and 4)
Farmers' Property Protection and Enhancement Law	2012	The Republic of the Union of Myanmar
Foreign Investment Law	2012	This Law provides the framework for foreign investment in Myanmar, which includes investment in business projects involving land. The current Law allows for foreign investment to the extent of 100% of foreign capital with restrictions in some cases (Article 9). The Law indicates that land may be utilized in investments for agriculture and livestock rearing in contracting partnership arrangements between local and foreign investors (Article 35). If a joint venture is formed with a local business, then the ratio of foreign capital to local capital invested is to be agreed between the two parties. The Law defines land lease periods with foreign investors able to lease land from the government or from authorized private owners for up to 50 years, depending on the type and size of the investment, and the deal can be extended twice, for 10 years each time (Article 31 & 32). Furthermore it is stated that leases longer than the standard 50 years may be granted for investments in areas of the country which are designated as less developed (Article 36). This Law includes chapters. In Chapter 1, Title and Definition, in Chapter 2, Applicable Business, in Chapter 3, Aim, in Chapter 4, Basic Principles, in Chapter 5, Form of Principles, in Chapter 6, Formation of the Commission, in Chapter 7, Duties and Power of Commission, in Chapter 8, Duties and Rights of the Investor, in

		Chapter 9, Application for Permit, in Chapter 10, Insurance, in Chapter 11, Appointment of Staff and Workers, in Chapter 12, Exemption and Relief, in Chapter 13, Guarantees, in Chapter 14, Right and Use Land, in Chapter 15, Foreign Capital, in Chapter 16, Right and Transfer Foreign Currency, in Chapter 17, Matter Relating to the Foreign Currency, in Chapter 18, Administrative Penalties, in Chapter 19, Settlement of Disputes, in Chapter 20, Miscellaneous are expressed. GEF project relevant/regulatory framework comprised in (chapter 14)
Environment Conservation Law	2012	This Law is primarily concerned with the control of pollutants in the environment, and does not directly address land tenure security issues. The Law views land as a natural resource that should be used sustainably and protected from pollution and degradation. The Law does call for the development of an ESIA mechanism in the country, which could help to mitigate potential negative environmental or social impacts relating to loss of land tenure security as a result of any proposed development projects in the country (Article 7).
The Seed Law is now under process for notification1.	2011	The Law describes the clarification of Seed standard and Seed quality. National Seed Committee (NSC) is an authority for matters on import and export of seeds. Thus, committee or technical subcommittee of NSC could play important role for managing bio-safety even before National Bio-safety Framework or law is enacted. The objectives of the Law are to assist the development of agricultural sector of the State by cultivating and producing crops using pure seed, to enable to carry out the seed business commercially and systematically, to encourage for enabling participation in seed production and carrying out seed research of the Government departments, organizations and individuals, and to enable the Government departments, organizations, international organizations, internal and external organizations and individuals to cooperate for the development of seed business. The law will regulate the seed production industry and provide for the testing and registering of imported seeds to ensure that they meet Myanmar standards. It will help control unwanted pests, diseases and genetic flaws which destroy agricultural plants and will also govern the distribution of imported seeds including paddy, pea, bean, maize and corn which require endorsement of the NSC under the MOAI.
Farm Land Law	2011	The law is including 8 chapters. In Chapter 1, the name and definition of farmland, the right to use farmland, agriculturist, agricultural household, head of household, ministry, department, in Chapter 2, about the right to work farmland, in Chapter 3, about the rights concerning use of farm land, in Chapter 4, conditions in respect of the right to work farm land, in Chapter 5, formation of farm land management bodies, in Chapter 6, duties and authority of the farm land management bodies at various levels, in Chapter 7, taking action on breach of conditions, in Chapter 8, compensation and indemnity are described. GEF project relevant/regulatory framework contained in (chapters 2, 3,4,5-6)

[1] Seed Division, MAS

		The previous land policy provided the farmers only land use or tillage rights on their holdings. It cannot be transferred, mortgaged or taken in lieu of loan repayments. The new Farm Land policy improved land use rights for farmers under the trade liberalization. Some significant facts, among others, are noted as follows. Rights of Person who has the right to use the farmland: Right to have the farmland in possession, right to use the farmland, right to enjoy the benefit arises from this right; Right to sell, mortgage, lease, exchange and gift on the whole or part of the right to use the farmland in accord with the stipulated terms and conditions; Right to use common interest with the investment of village co-operative or with the private investors for the development of agriculture in the farmland; Right to use common interest the farmland in accord with the Foreign Investment Law of the Republic of the Union of Myanmar by cooperating with the foreigner or the organization in which the foreigner is included.
Constitution	2008	The Constitution is the supreme law of the land. All laws, rules, regulations and policies in the country must comply with the Constitution. The Constitution has several provisions that are highly relevant to recent concerns regarding land tenure security issues in the country. The most important of these are the adoption of a market economy, in which the ownership and protection of private land property rights are clearly recognized (Articles 35, 37, 356 and 372). In addition, it can be interpreted that the Constitution guarantees the right of citizens to appeal decisions made regarding land rights to an independent judiciary (Articles 11 and 19). It should also be noted that government is required to "enact necessary laws to protect the rights of the peasants" (Article 23). As such, subsidiary legislation should specifically state that persons affected by administrative decisions relating to land should have the right to appeal such decisions after administrative remedies have been exhausted. A weakness in the Constitution regarding land tenure security is the provision that the government is the ultimate owner of all lands in the country (Article 37). This means that only land use property rights may be granted, and that the government reserves the power to rescind these rights. The Government's right to rescind land use property rights should be limited to takings that serve a clear public purpose in the subsidiary legal framework. Finally, those working on land tenure security issues should understand that the Constitution establishes a republic, in which states, regions, divisions and zones have all been granted legislative authority (Articles 188 and 196). These Government bodies may enact laws that add additional safeguards to land tenure security, as long as they do not directly conflict with the laws, rules and regulations enacted at the national level of government, and the additional safeguards fit within the boundaries established in Schedules 2 and 3 of the Constitution.
The Fertilizer Law (2002)	2002	
Protection of Wildlife and Conservation of Natural Areas Law	1994	This Law is primarily concerned with the conservation of wildlife and their habitats, and compliance with relevant international treaties such as CITES and the Convention on Biological Diversity. It is important in that it provides a rudimentary land classification

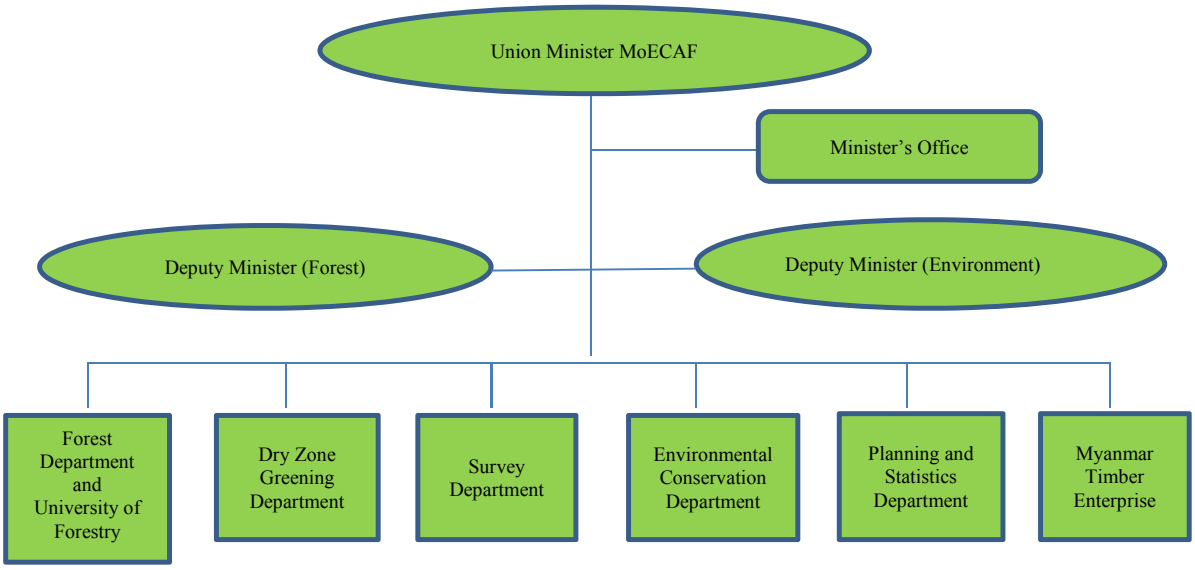
		system for natural areas that are protected (Article 7). Natural areas fall under the classification of Public Protected Forest land found in the Forest Law (1992). The Law provides a mechanism for designating land as a natural area, and the formation of National Parks. The Law also provides a mechanism for compensating individuals or businesses who have existing rights to the land under relevant land acquisition laws (Article 8), and allows the Director General of the Forest Department to "make provisions for reasonable rights and privileges in respect of the affected rights of the people in the region" where the natural area is established (Article 11). The Law also contains penalty provisions for anyone who causes damage to any ecosystems within a natural area (Article 36).
The Pesticide Law (1990)		The main objectives of the Law are for investigation that pesticides are sold wrongfully and to comply with regulations and directives prescribed by the Registration Board from time to time. The important features of the Pesticide Law are: to inspect and control the methods of use, sale, storage of the pesticide from time to time, to inspect the efficiency and the potency of the pesticide in the suppression and control of pests, investigate as to whether or not the users of the pesticide comply with the directives of the Registration Board regarding containers or wrappers, and packages after the use of the pesticides, etc. Pesticides, including bio-pesticides using biological agents, are basically intended to use in killing pests which also affects the plants or animals. However, misuse and overuse or uncontrolled use of pesticides may cause serious environmental impacts on human, animals, agriculture, fisheries and so on. A National Pesticide Registration Board (PRB) which comprise of members from representatives from various ministries serve as the advisory body for pesticide registration. PRB issue import permit after a positive recommendation from the technical committee.
The Plant Pest Quarantine Law (1993)	1993	Under the Plant Pest Quarantine Law no person may, without the phytosanitary certificate issued by Myanmar Agricultural Service neither import nor export any kind of plant, plant products, pest, beneficial living organism or soil. The objectives of the law are: 1)To prevent quarantine pests from entering into Myanmar by any mean 2) To suppress effectively the spread of quarantine pests and to carry out if necessary, disinfections treatment of plant or plant products to be explored and the issuance of phytosanitary certificate. The Myanmar Agriculture Service under MOAI establishes more than 10 Quarantine 27 inspection camps at all points of entry at borders, international airports in Myanmar and foreign mail service.
Myanmar Forest Law	1992	The Forest Law covers all forest resources in the country, including those that are protected (Reserved Forest land and Protected Public Forest land) and those that exist on Public Forest lands covered by the Vacant, Fallow and Virgin Lands Management Law (2012). While the law indicates that the Minister of the Ministry of Environmental Conservation and Forestry may change the classification of any area of Reserved Forest land to Public Protected Forest Land, with approval of the Government, there is no clear procedure as to how this would be accomplished or what standards are to be applied (Article 8). There also appears to be no mechanism in the existing law to declassify areas of Reserved Forest land so that they may be utilized for another purpose, such as agricultural land to be allocated for smallholder

		farmers. In fact, the Law clearly states that any areas of Reserved Forest existing under the Forest Act of 1902 shall remain as Reserved Forest lands (Article 56). Various rights of use over forestlands may be granted under the Forest Law, such as for Village Firewood Plantations or Local Supply Plantation, but the procedure for how this is accomplished is not clear in the current Law (Chapter V). There are also penalty provisions that may be applied against anyone that is found to be trespassing or encroaching on areas of Reserved Forest land (Article 40). Discussions to replace the current Forest Law with a new Law have been underway since 2010, but the most recent indication is that the current law will be amended, not replaced. One of the most anticipated provisions of a proposed new law was the incorporation of a strengthened legal basis for community-based forest management (CBFM). The Community Forestry Instruction (CFI) of 1995 provided a specific administrative basis for such participatory approaches, but does not have the strength of law. It is now proposed that the CFI will be incorporated into the Forest Law, but there is need for more detailed guidance on technical and institutional aspects of implementation of Community Forestry (CF). Among other proposed revisions of the Forest Law are that both Public Protected Forests (PPF) and CF may be harvested, and that teak is no longer automatically state property.
Duties and Rights of the Central Committee for the Management of Cultivable Land, Fallow Land and Waste Land	1991	This instruction is primarily concerned with the promotion of large-scale commercial agricultural enterprises, including those established by State-owned economic organizations, cooperative societies, joint-ventures and private individuals. This brief instruction details support from government for these enterprises to obtain loans and to acquire technology and quality seeds (Article 2). Limits on land grants are stated as up to 5,000 acres, for lease periods of up to 30 years (Article 3). No mention is made of customary land tenure regimes and it is unclear how land tenure rights detailed in other laws interface with this instruction. Provisions on maximum sizes for land grants in this instruction are not harmonized with those contained in the VFV Law (2012). The VFV Law (2012) is more comprehensive and it is not clear if this instruction has been formally repealed.
The Pesticide Law	1990	The law includes 15 chapters. In Chapter 1, Title and Definition, in chapter 2, Formation and Registration Board, in chapter 3, Powers and Duties of the Registration Board, in chapter 4, application for Registration and Payment of Fees, in chapter 5, Powers and Duties of the Managing Director, in chapter 6, Powers and Duties of the Managers, in chapter 7, Duties and Right of Registered Persons dealing in prepared mixture of Pesticide and Toxic Substance, in Chapter 8, Duties and Rights of Person having license to compound and sell Pesticide, in chapter 9, Duties and Rights of License Holders for Selling Pesticide and Toxic Substance, in chapter 10, Conditions for Compliance by Users, in chapter 11, Powers and Duties of the Inspectors, chapter 12, Appeals, in Chapter 13, Prohibitions, in Chapter 14, Offences and Penalties, in Chapter 15, miscellaneous are articulated. GEF project relevant/regulatory framework comprised in (chapters 8 and 9)
Land Acquisition Act	1894	This law provides the basis for payment of compensation when land is acquired for a public purpose. The procedures and

		provisions in this Law are antiquated and are not well harmonized with the current governance frameworks in the country. The Law allows for the taking of land by the Government for a business purpose, as opposed to takings limited to a public purpose only, which raises concerns under the current Constitution. As discussed in detail later in this report, provisions and procedures relating to the acquisition of land for a public purpose should be incorporated into a comprehensive Land Law, and this existing Law should be repealed.
County (Municipality)		
Customary Land Law		Access to land for the rural poor is often based on informal institutions and custom which together are known as customary law. Customary law is the written and unwritten rules which have developed from the customs and traditions of communities. These customs and traditions are known to community members; followed by community members and enforced by them. Customary law in regard to land usually incorporates the rights of community members in respect of land tenure, land use, sale and inheritance of land. Customary land tenure systems may be collective, as when a village or household group works together to prepare a large contiguous area of land for cultivation each year, or manages a collective forest. Tenure may also be based on hereditary ownership in which each household has rights to a set of fields or forest area, and decides on their own each year which fields they will cultivate. Or, the tenure system may be a combination of collective and individual. Reflective of the diversity of upland production systems, different tenure systems may apply to different types of land. A village may organize individual rights to agricultural land, a rotational grazing system, and collectively protect its watershed forests from cutting. Aspects of customary law, including traditional tenure systems can be explicitly allowed for in statutory law and were upheld under the British Frontier Areas Administration. Laws were enacted which detailed the specific regulations applying to each area. The 1960 reprint of the Kachin Hill Tract Manual (1895) stated “that there were two kinds of laws applicable in the Hill Tracts in the Myitkyina and Bhamo Districts. One set of laws applies personally to the races mentioned….and another set of laws extended by…the Government of Burma Act 1935 applies extra-territorially”. This example shows that customary law was applicable to the specified ethnic groups in the designated geographic areas, while statutory law applied to non-members of these groups in the same areas. Customary land tenure in Chin state is complex and long-established and highly resistant to change. The majority of forested areas within which Chin people conduct shifting agriculture practices lie outside of FD management. When an individual or household initially clears an area of forest for cultivation, customary law dictates that ownership of that area rests with that household. However, these landowners (which constitute about 30% of the population in Kanpetlet and Mindat) are shifting cultivators along with the rest of the community and do not continuously cultivate this cleared land. Any other household that subsequently wishes to cultivate the cleared area, for one season only, must submit the request to this customary owner, along with

		a (usually token) payment. Under customary law, ownership of land for shifting cultivation is not sold or transferred between households, and it is very rare for leases of more than one year to be requested or granted, so that establishment of perennial crops or settled agriculture is strongly discouraged.

Appendix 8: Detailed Summary of Ministry of Environmental Conservation and Forestry



The Ministry of Environmental Conservation and Forestry (MOECAF) is responsible for managing all forestlands in the country including the Permanent Forest Estate (PFE) and Public Forests. MOECAF develops the forest policy and legal frameworks and coordinates Climate Change related policy analysis and development. The ministry contributes to UNFCCC negotiations through the Ministry of Foreign Affairs (MOFA) and is in charge of developing the National Communications to the Convention. MOECAF is also in charge of environmental protection including the development and implementation of rules relating to Environmental and Social Impact Assessments (ESIA).

MOECAF Staff

Institution	Officers	Staff	Total
Minister's Office	16	19	35
Planning and Statistics Department	42	105	147
Forest Department	567	14,862	15,429
Dry Zone Department	137	3,094	3,231
Myanmar Timber Enterprise	1,131	45,280	46,411
Total	1,893	63,360	65,253

The Forest Department (FD) is responsible for administering Reserved Forest lands. The FD is present in all the country through 15 sub-national Offices covering all States and Regions and including 64 District Offices covering the management of Reserved Forests around the country. District Offices are sub-divided into township offices. The FD is divided into:

- Planning and Statistics Division
- Watershed Management Division
- Extension Division
- Training and Research Division
- Budget Division
- Wildlife Conservation Division
- Natural Forest and Plantation Division
- Administrative Division
- Zoological Gardens
- Forest Research Institute
- Inspection Division
- University of Forestry

The Dry Zone Greening Department (DZGD) is responsible for reforestation of degraded forest lands, protection and conservation of remaining natural forests, and restoration of the environment in the Dry Zone of Central Myanmar. The objectives of the DZGD are i) to make the arid region lush, green and beautiful; ii) to maintain its eco-system; iii) to fulfil basic forest produce requirements of the rural people; iv) to contribute socio-economic development of the rural people; v) to make the local residents aware of the different values of forestry; vi) to enhance public knowledge on conservation and promotion of natural environment, and escalate its participation; vii) to maintain climatic balance in order to support cultivation and viii) to prevent desertification. The DZGD is responsible of four main activities: the establishment of forest plantations, the protection and rehabilitation of remaining natural forest, the promotion on utilization of fuel wood and substitutes and the water resources development. Next to that, the DZGD is also implementing village level environmental education programs, special greening activities, people centered tree planting activities and greening projects in cooperation with international organizations. There are 3 sub-national Offices covering the Mandalay, Sagaing and Magway Regions. The DZGD is divided into: Projects Division; Engineering Division and, Administrative Division.

The Survey Department (SD) is responsible for producing UTM maps and for conducting land surveys in major cities. The SD is divided into:

- Administration Division
- Training Division
- Boundary Survey Division
- Aerial Survey Division
- Photogrammetry Division
- Map Reproduction Division

The Environmental Conservation Department (ECD) is a newly created Department responsible for Environmental and Social Impact Assessments (ESIA) for investments and the development of the National Communications to UNFCCC; ECD is responsible for implementing National Environmental Policy, strategy, framework, planning and action plan for the integration of environmental consideration into in the national sustainable development process. And then to manage natural resources conservation and sustainable utilization, the pollution control on water, air and land for the sustainable environment. And also to cooperate with other government organizations, civil society, private sectors and international organizations concerning with environmental management. There are 5 sub-national Offices, in Yangon, Mandalay, Ayeyawady, Sagaing and Tanintharyi Regions with plans to expand in all States and Regions. The ECD is divided into:

- Administrative Division
- Policy, International Relations, Training and Research Division
- Pollution Control Division
- Natural Resources Conservation and ESIA Division

The Planning and Statistics Department (PSD)coordinates and facilitates the tasks of other MOECAF Departments and deals mainly with policy matters; The PSD is divided into:

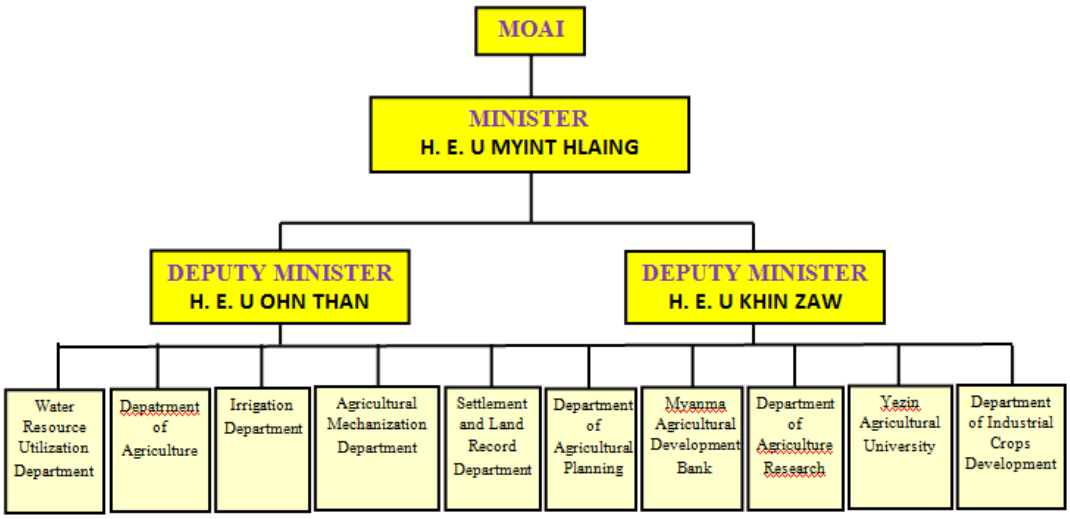
- Policy and Planning Division
- Commerce and International Cooperation Division
- Environment Division

The Myanmar Timber Enterprise (MTE) is responsible for timber harvesting, milling and downstream processing and marketing of forest products. The MTE's Extraction Department has sub-national Offices in all States and Regions but presence at district and township level depends on the potential and intensity of timber harvesting operations.

Forestry Sector Education and Research Institutions

Institution	Comments
Under the FD	
University of Forestry	In Yezin and offers Bachelor of Science, Post-graduate diplomas, Master's and PhD degrees in Forestry. Annual intake around 200 students to Bachelor degree. Total staffing of 180. The staff of 29 includes approximately 2 professors, 1 associate professor, 5 lecturers, 11 assistant lecturers, and 7 "demonstrators". There are 3 types of advanced degrees: 1) Post Graduate Diploma in Forestry, 2) M.Sc (Forestry) and 3) M.Sc (Forest Products). From 1998 to 2012 there were17 numbers graduated in Post Graduate Diploma, 35 number obtained M.Sc and 9 numbers were then studying. Through the UOF, students have the opportunity to strengthen their knowledge through international studies. From 1992 to 2012 14 students graduated from an abroad Master degree. 23 students are currently studying in master degree. 16 students have received PhD's from foreign universities.
Forest Research Institute	Created in 1978 (Yezin) and consists of three divisions: the Forestry Development Division, the Administration and Budget Division and the Forest Utilization Division. Total staffing of 173 including 53 researchers.
Myanmar Forest School	In Pyin Oo Lwin and trains graduates who are generally recruited as junior Forestry Staff and who play a significant role in the implementation of forest management activities in the country. The MFS offers a one-year academic program. For the year 2013, 96 persons attended the school, 55 from the FD, 16 from DZGD and 25 from MTE. Subjects offered include: Forest Management, Forest Plantation, Forest Utilization, Forest Protection, Departmental Procedure and Administrative, Forest Engineering, Survey and Mapping, Forest Policy and Law, Timber Harvesting, Botany, and Social Forestry and Environmental Conservation. Since 1898 almost 6,000 thousand people have completed training at the MFS.
Central Forestry Development Training Centre	Established in Hmawbi (Yangon) in 1990 with sub-centre (established more recently) focused on Community Forestry and Community Participation in Mandalay. Subjects include: Basic Forestry; Forest Inventory Tree Improvement; Bamboo Plantation; Community Forestry Development; Budgeting Procedure and Accounting; Agro-forestry; Forest Protection; Watershed Management; Basic Forest Engineering; Village Forest Plantation; and Forest Plantation Technique.
Under the MTE	
Training School No.1	Established in Nanchun in 1980 and with annual intake of 20-25 trainees. Subjects: timber harvesting, elephant care and management, field work and office procedures.
Training School No.2	In Nay Pyi Taw with annual intake of 25-30 trainees. Subjects: basic driving and handing and operator course (heavy forestry machinery)
Training School No.3	Established in Yangon. Annual intake of 25 trainees. Subjects: timber milling, marketing, export and management

Appendix 9: Detailed Summary of The Ministry of Agriculture and Irrigation



Source: http://www.moai.gov.mm/index.php/about-us/organization-chart Accessed 14/04/14

Organizations and functions of the Ministry's departments

Department	Main functions
Department of Agriculture	• Production of good quality seed varieties for main crops, vegetables and fruits and conduct trainings for farmers on production of good quality seed. • Organize trainings on advanced agricultural technologies and cultural practices for main crops in order to facilitate application and innovation of these techniques. • Conduct research in order to produce good quality and high yielding seed.
Department of Agricultural Planning	• Formation of Agricultural plans • Assistance in adoption of agricultural policies. • Strengthen inter-agency coordination • Relationships with International and Regional organizations • Development of agricultural trade and investment • Reporting and compilation of agricultural statistics • Conducting related surveys • Further development of agricultural sector • Collection and dissemination of wholesale and commodity prices.
Irrigation Department	• Management of surface water irrigation systems via dams, weirs and sluice gates. • Design, planning and implementation of new irrigation projects • Operation and maintenance of existing irrigation and drainage systems, flood protection embankments and polders. • Seasonal and temporary measures for summer rice production • Technical assistance to village embankment and village irrigation works for rural development. • Installation of micro-hydro power generation plants along the irrigation canals • Providing the on-farm water management training for farmer water user associations.
Water Resources Utilization Department	Established in 1995 to streamline river pumping and groundwater development activities.

	Main Functions of WRUD are to supply irrigation water by pumping water from rivers and streams and utilization of underground water from feasible sources for boosting crop production. Specifically: • to promote the socio-economic conditions of rural population by the supply of safe drinking water from both tube wells and piped water supply reticulation systems, • to supply crop water as well as drinking water from spring sources by gravity flow systems in the mountainous regions of border and remote areas, and • to disseminate the knowledge and practice of efficient usage of drip irrigation • Groundwater division
Department of Agricultural Research	Mandate is to systematically conduct research activities that would suit to the needs of all stakeholders, which include producers, distributors and consumers in developing and dissemination of regionally adapted crop varieties and crop production technologies. • To develop high yielding crop varieties including open pollinated and hybrids with better quality. • To generate profitable cropping systems and cultural practices for different crops. • To develop appropriate methods for natural resource management system. • To promote research and development in biotechnology. • To provide the improved varieties & technologies to the farmers through the Extension Departments.
Agricultural Mechanization Department	Transformation from conventional to mechanized agriculture is being introduced to increase crop production and reduce losses from land preparation to harvesting. Mechanized farms have been established on 7,385 acres in 31 townships. Land development in support of mechanization includes: • Construction of farm roads • Construction of canals and drainage ditches for irrigation • Transformation of small plots to one acre plots • Introduction of instalment system for equipment purchase to increase affordability for farmers.
Settlement and Land Records Department	• Updating land maps and registers • Land surveys and map production • Collection compilation and issuing timely and reliable crop statistics • Collection and compilation of land use statistics • Land administration and decision on agricultural land disputes. • Conducting agricultural socio-economic surveys.
Department of Industrial Crop Development	• To produce high yielding and qualified seeds for industrial crops such as sugar cane, rubber, oil palm, cotton, coffee, jute and kenaf and other industrial crops for increased production. • To educate industrial crop farmers with advanced agricultural techniques. • To develop scientific agricultural practices through R &D for the production of seeds for industrial crops with specific characteristics of resistance to pest disease and weather extremes. Area cultivated with Rubber and Oil palm is increasing rapidly, particularly over the last few years

<table>
<tr><td>Yezin Agricultural University</td><td>To be a prime mover in agricultural and rural development in Myanmar through human resource development and national supply of scientific knowledge and technological innovation.
Only higher education establishment of University level in Agriculture in Myanmar. Primary functions are teaching and training, research and provision of extension services. Objective is to produce highly qualified professionals required for the development of the agriculture sector in the country. Equipped in leadership, management, planning, analysis and interpretation skills for provision of technical trainings, including non-degree training programmes, on modern methods of agriculture for the farming communities.

<table><tr><td>Campus</td><td>Specialization Area</td></tr><tr><td>Yezin Campus (main)</td><td>• Crop breeding
• Soil and water management
• Agribusiness management
• Agricultural biotechnology
• Agronomy
• Plant pathology
• Agricultural Entomology</td></tr><tr><td>Hmawbi, Yangon region</td><td>Rice</td></tr><tr><td>Aungban, Shan State</td><td>Hillside farming</td></tr><tr><td>Magway, Magway Region</td><td>Dry land farming system</td></tr><tr><td>Lungyaw, Nyaungpinthar, Pha-auk</td><td>Industrial Crops</td></tr><tr><td>Hlegu, Yangon Region</td><td>Plant Protection</td></tr></table></td></tr>
<tr><td>Myanmar Agricultural Development Bank</td><td>The Bank shall have the right to conduct the following business:
• Advancing annual, short-term and long-term loans to State-owned agricultural organizations, livestock organizations, cooperative societies, private persons, village banks, farmers, entrepreneurs and labourers on such terms and conditions as may be necessary;
• Receiving deposits on the basis of rural development, making loans and advances or allowing overdrafts with or without security,
• Organizing, recognizing and supervising village banks and prescribing their functions and duties,
• Selling and buying drafts, telegraphic transfers, payment orders and other kinds of remittances,
• Borrowing money in or outside the country for carrying out the functions of the Bank.</td></tr>
</table>

The Ministry of Agriculture and Irrigation (MoAI) is responsible for the management of agricultural land and develops the corresponding policy and legal frameworks. The strategic objectives of the Agricultural sector are to: i) Fulfil local food consumption needs; ii) production and provision of high-yielding quality seeds iii) Increase export of surplus production to increase foreign exchange earnings; iv) Assist rural development through agricultural development, v) provision of training and education, with research and development activities

MoAI's five strategies for agricultural development are: development of new agricultural land; provision of sufficient irrigation water; provision and support for agricultural mechanization; application of modern agro-technologies, and development and utilization of modern varieties.

The MoAI's current management targets include: increase net cultivated area up to 13.6 million hectare and cropping intensity 168 percent; attain 4.28 mt/ha of average yield of paddy and 33 mil mt of paddy production; increase total irrigated area to 2.3 million hectare; increase the accuracy of agricultural statistics; encourage the production of qualified and standardized agricultural value-added products for more competitive in international market; and create profitable and sustainable market for farmers.

There is 107,829 total staff comprised of 4,844 officers and 102,895 other ranks as the organizational set up of the Ministry of Agriculture and Irrigation.

Institutions	Male	Female	Total
Minister's office	10	12	22
Department of Agricultural planning	119	243	412
Department of Agriculture	3,094	2,377	5,471
Department of Irrigation	2,630	2,285	4,915
Department of Settlement and Land Record	4,946	567	5,513
Department of Farm Machinery	901	894	1,795
Myanmar Agricultural Development Bank	810	1,264	2,074
Department of Industrial Crop Development	1,001	2,281	3,282
Department of Water Resources Utilization	853	363	1,216
Department of Agricultural Research	150	376	526
Yezin Agricultural University	59	169	228
Total	14,573	10,881	25,454

Education level of staff of Ministry of Agriculture and Irrigation

Degree	No. of staff
Bachelor	21,981
Master	307
Ph.D.	81
Post graduate Diploma	130
M-Phil	15
Diploma in Agriculture	2,955
Total	25,454

The MoAI is responsible for implementation of the Farmland and Vacant, Fallow and Virgin (VFV) Land Laws and can therefore allocate land (including Public Forest or non PFE) for small and large scale agricultural development. MoAI's Settlement and Land Records Department (SLRD) is responsible for updating and maintaining land records, especially for lands used by farmers for agricultural and settlement purposes. With passage of the new Farmland and VFV Land Laws, this Department has become responsible for recording and registering interests in farmland and VFV land, and issuing Land Use Certificates to farmers who have received approval to use farmland from the Farmland Administration Body at the appropriate level.

The Farmland Administration Body (FAB) is a structure within the MoAI designated under the Farmland Law (2012). The FAB replaces the former Land Committee which had a similar mandate. The Minister of MoAI is the chairperson of the FAB. The Deputy Minister of MoAI is deputy chairperson and the Director General of Settlement and Land Record Department (SLRD) is the secretary. This structure is replicated at the State / Region level where the Chief of the State / Region is the chairperson of the Committee; and the head of SLRD at the State / Region level is the secretary. At both the district and township level the head of General Administrative Department is the chairperson and the head of SLRD will be the secretary. All other departments associated with land are part of FABs at different levels. The precise roles and responsibilities of FABs at various administrative levels of Government (Ward, Village Tract, Township, District, Region, and State) are not clearly defined. However duties of the FAB at the Central level are listed in Article 17 of the Farmland Law. It is the responsibility of the FAB at the Central Level to delegate specific roles and responsibilities to lower-level FABs. FABs are responsible for:

1) Reviewing applications for the use of farmland;
2) Formally recognizing/approving rights to use farmland;
3) Submitting approved rights to use farmland to the SLRD for registration;

4) Conducting valuations of farmland for tax and acquisition compensation purposes;
5) Issuing warnings, imposing penalties or rescinding use rights if conditions for use of farmland are not met; and,
6) Resolve disputes that arise over the allocation and use of farmland use rights.

The MoAI works with many different international organizations, including:

- International Rice Research Institute (IRRI)
- International Maize and Wheat Improvement Center (CIMMYT)
- International Crops Research Institute for Semi-arid Tropics (ICRISAT)
- International Atomic Energy Agency (IAEA)
- International Plant Genetic Resource Institute (IPGRI) (Biodiversity International)
- Japan International Cooperation Agency (JICA)
- Korea Oversea International Cooperation Agency (KOICA)
- International Corn Foundation (ICF-Korea)
- Australian Council for International Agricultural Research (ACIAR)
- Food and Agriculture Organization (FAO)
- Kasetsart University, Thailand.
- National Agrobiodiversity Center, RDA, Korea
- Kobe University, Tokyo Agricultural University and Tsukuba University.

Appendix 10: Baseline Investments

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
Summary of Relevant Government Projects				
Project for development of water saving agriculture technology in Central Dry Zone	DOA, DAR JICA	2013-2018		Identification of suitable crops and growing method in CDZ, research on soil conservation and field management, development of irrigation method in CDZ
Tanintharyi Nature Reserve Project-Phase III	MGTC, TCP, ATL	4/2013 to 3/2017	USD 1.8 million	Objectives: to effectively conserve and maintain the biodiversity of the nature reserve, while contributing to the sustainable livelihood of local communities by getting involved in conservation work and to contribute to the establishment of Myanmar's Protected Areas network Activities: Biodiversity Conservation, Awareness program, community development program and capacity building
Market Networks for Pro-poor Sustainable Environmental Devel-opment in the Mandalay and Ayeyawady Regions, Rakhine and Chin States" in Myanmar	Mercy Corps	5/2013 to 4/2015	USD 4 million (according to MoU) (So far USD 2.49 million for two program activities mobilized)	Objective 1: Market-driven, sustainable household and community energy solutions (fuel efficient stoves and solar products) and effective business models are developed Objective 2: Production and conservation of forest assets provides a renewable source of cooking fuel for vulnerable households and income opportunities. Activities:

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
				Market-based efficient cookstoves distribution in Pyaebwe Township, Manadalay Region under Myanmar Cookstove Campaign and Inclusive Natural Resource Management program in Chin & Shan States
Strengthening Sustainable and Appropriate Community-based Forestry Development in Myanmar and the Capacity and Capability of Relevant Stokeholds	MOECAF RECOFTC	2013-2018	TCP	Objectives: To promote sustainable and appropriate community-based forest management and development and to strengthen the capacity and capability within Myanmar Activities: • Support the establishment of a National Community Forestry Working Group and he Development of a National Community Forestry Program Strategy • Support Development of Capacity Building for the Forest Department and Partners • Support Demonstration of Community Forestry Practices in Partnership with Existing Projects • Facilitation of Coordination and Synergies among Government Organizations and NGOs • Enhancing Research Capacity on Community Forestry • Support Demonstration and Scaling up of Community Forestry Practices in New Areas
Capacity Building for Developing REDD+ activities in the context of Sustainable Forest Management	MOECAF ITTO		Total: USD 645 692 ITTO: USD 571 890 GoM: USD 73 802	Objectives: To contribute to sustainable forest management of Bago Yoma Region to improve the provision of environmental services and reduce GHG emissions from deforestation and degradation and enhancement of carbon stocks. Activities: REDD-plus national strategy prepared Institutional setting for capacity building on REDD-plus strengthened Capacity to conduct MRV of carbon stock built

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
Summary of Relevant Donor Projects				
Sustainable Small-scale Fisheries and Aquaculture Livelihoods in Coastal Mangrove Ecosystems	UNFAO-Italy	2010-2014	USD 1.75 million	• Capacity of 20 participating delta communities and supporting institutions to co-manage of freshwater fisheries including; - formulation and promotion of better co-management practices & sustainable utilization of resources; and Post-harvest processing of fisheries products and market access Vulnerability of communities reduced: mangrove rehabilitation, alternative livelihood opportunities and safety of fishing operations
Formulation of a National Action Plan for Poverty Alleviation and Rural Development through Agriculture (NAPA) to implement the National Strategy for Poverty Alleviation and Rural Development (NSPARD) for Myanmar	FAO-LIFT	2014-2016	USD 1.79 million	(1) Action plans for policy reforms and institutional reforms (2) Action plans for human resource development *As this action plans are quite comprehensive, many activities are related to the project, which is involved in institutional capacity building.*
Project for development of water saving agriculture technology in Central Dry Zone	JICA	2013-2016		Identification of suitable crops and growing method in CDZ, research on soil conservation and field management, development of irrigation method in CDZ

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
The Project for Strengthening Human Development Institutions in Agriculture	JICA	2013-2016	USD 11.2 million	Enhancement of research and extension ability of agriculture related research institutes, including YAU and DAR, provision of equipment
Community Development for Remote Townships Project CDRT)	UNDP	2012- on going	USD 56.1 million	Capacity development, agriculture development, irrigation development, provision of seeds, construction of warehouse, establishment of rice/ grain bank, soil conservation
Improvement of farming method and post-harvest technologies, access to inputs market	LIFT	2012- on going		
Summary of Relevant NGO and Private Sector Projects				
Disaster Preparedness and Climate Change Adaptation in Ayeyarwady Delta	Forest Resource Environment Development and Conservation Association DKH - Diakonie Katastrophenhlife (Germany)(Project No. 20130701/20131301	2014 - 2017	EU 900,000 = USD 1 218 666.19	Construction of School-Cum-Cyclone Shelter (SCCS), Construction of embankment for preventing soil erosion near villages, Construction of rain water harvesting ground tanks, Introduction of water desalination and purification system, Community Training on Disaster Risk Reduction
Sustainable Community Alternative Livelihood Enhancement to Undermine Poverty (SCALE UP)	ADRA LIFT FMO	2011 - 2014	USD 1 693 276	Improved livelihood yields and production in aquaculture/fishing through access to technology and increased employment opportunity. Community Forestry establishment, mangrove forest restoration, capacity building and aqua-forestry provide for the implementation of GEF project

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
Livelihoods and Environmental Assets Restoration in Rakhine (CLEARR) EcoDev, ECCDI, BANCA, BDA, SDF MERN is a Lead agency)	EcoDev LIFT (UNOPS)	Jul 2011 to Jun 2014	USD 2 999 816	Objectives: Ensure food and livelihood of coastal communities in Gwa T/S and Kyeintali Sub T/S through agricultural and livelihood support Establish cooperative mangrove rehabilitation and management Improve capacity for livelihoods development and environmental governance Activities: Agriculture development (Agricultural demonstrations through farmer-led extension Multipurpose nursery establishment Community Forestry establishment and development of management plan Communal Aquaculture Development and grants to interest groups Income generation and local product making grants to interest groups Participatory Biodiversity conservation Forest rehabilitation Natural forest improvement operation Community water supply development Cash for work and small infrastructure work IP joint planning and project management Participatory livelihood assessment and village development plan Participatory Action Research and learning on sustainable land use Awareness raising Capacity Building (trainings)
Summary of Relevant NGO and Private Sector Projects				
Sustainable Community Alternative Livelihood Enhancement to Undermine Poverty (SCALE UP)	ADRA LIFT FMO	2011 - 2014	USD 1 693 276	Objectives: Improved livelihood yields and production in aquaculture/fishing through access to technology and increased employment opportunity. Increased profit margins by accessing wider markets, strengthening and institutionalizing community groups and utilizing storage/processing/marketing facilities Community

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
				Forestry establishment, mangrove forest restoration, capacity building and aqua-forestry provide for the implementation of GEF project Natural livelihood resources like mangroves and riversides rehabilitated to protect people, livelihood assets, livelihood sources and the rest of the community. Activities: Mangrove friendly aquaculture ponds and community forestry establishment Form and train the collective groups for market development Natural forest regeneration improvement, protection riverbank erosion and wild break plantation Capacity building of community based forest users and improves awareness of community to climate change and other environmental issues.
Livelihoods and Environmental Assets Restoration in Rakhine (CLEARR) EcoDev, ECCDI, BANCA, BDA, SDF MERN is a Lead agency)	EcoDev LIFT (UNOPS)	Jul 2011 to Jun 2014	USD 2 999 816	Objectives: - Ensure food and livelihood of coastal communities through agricultural and livelihood support Establish cooperative mangrove rehabilitation and management Improve capacity for livelihoods development and environmental governance Activities: - Agriculture development, Agricultural demonstrations through farmer-led extension - Multipurpose nursery establishment - Community Forestry establishment and development of management plan - Communal Aquaculture Development and grants to interest groups - Income generation and local product making grants to interest groups - Participatory Biodiversity conservation - Forest rehabilitation - Natural forest improvement operation - Community water supply development - Participatory livelihood assessment and village development plan - Participatory Action Research and learning on sustainable land use

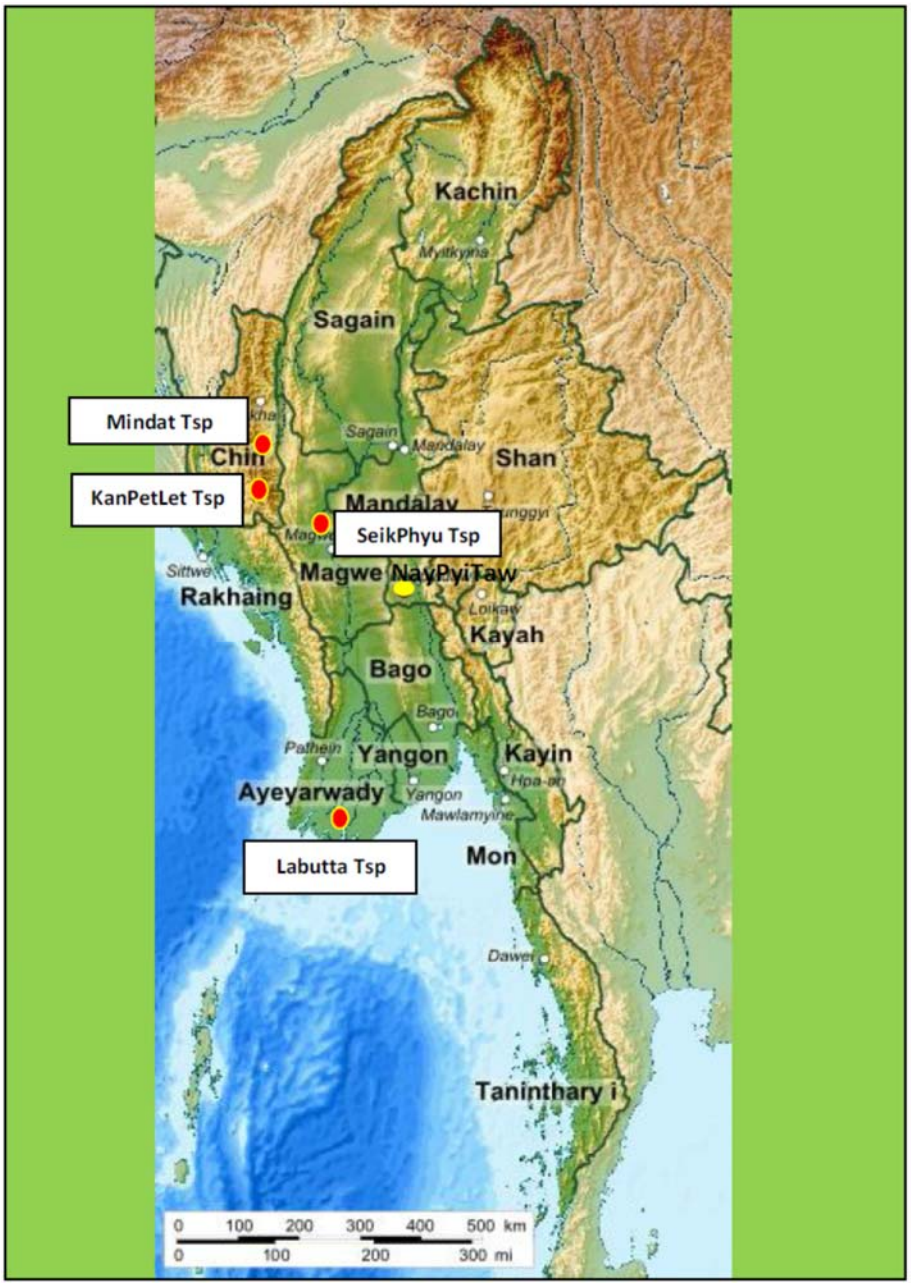
Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
				- Awareness raising
Rural Community Based Agricultural Capacity Building and Development Programme	World Vision Myanmar (WVM)	Ongoing	USD 2.6million	Provision of seeds and fertilizers, construction of dike and dranage, wells and ponds, soil conservation, water harvesting, training and distribution of info., market access improvement, value-adding, Micro-credit
	Consortium of Dutch NGOs (CDN)	Ongoing	USD 3.3million	Program of integrated post disastrous resettlement food security and community develop project (Construction of seed storage, green house, rehabilitation of embankment, tube well and drainage pipe, provision of qualified seeds, on-farm research, farmers' field school)
	Korea Rural Community Cooperation (KRC)	Ongoing	USD 1.3million	Project for Improving Good Agricultural Practice on Rice, Vegetable and Fruit Crops, and Income by Integrated Agricultural Farming in Myanmar (Production of Vegetables, Establishment of Green House and Drip Irrigation, Provision of Washing Machine, organizing GAP Workshop)
	ActionAid Myanmar	Ongoing	USD 1.7million	Improve the Livelihood and Food Security of the Rural Communities in Central Dry Zone and Delta Areas (Water harvesting, soil conservation, crop diversification, research on climate change, revolving loan fund, capacity development)
"Improvement of Food Security and Sustainable Agriculture Development: Support to Crop Production Programme in Ayeyarwady"	International Volunteers Service Association (AVSI) Foundation Italy	Ongoing	USD 1.82million	Ensure food and nutrition security, increase crop productivity, test and produce quality rice, potato and vegetable seeds, improve crop production technology, improve irrigation networks, increase community capacity to sustain agricultural system. Provide food-crop packages in 48 villages numbering 850 households for a total of 3,800 people. Provide farm machinery, gardening tools and fuel to 3000 marginalized farmers, along with horticultural packages to vulnerable rural households. Provide training in natural compost methods and quality seed replication techniques.
Summary of GEF projects in Myanmar				

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
Preparation of National Adaptation Programme of Action (NAPA)	UNEP	Approved on 2008	USD 200 000 from GEF, USD 30 000 from co-financing	
Adapting Community Forestry Landscapes and Associated Community Livelihoods to a Changing Climate, in Particular an Increase in the Frequency and Intensity of Extreme Weather Events	UNEP Executing agency : Ministry of Environmental Conservation and Forestry (MOECAF)/Environment Conservation Department (ECD), and Forest Department (FD), Ministry of Transport(MoT)/ Department of Meteorology and Hydrology (DMH)	Approved in 2013	USD 5 087 500 from GEF, USD 19 211 000 From co-financing	To increase the resilience of Community Forestry and associated local community livelihoods to climate change-induced risks in the Central Dry Zone, Rakhine Coastal State and Ayeyarwaddy Region.
Improvement of Industrial Energy Efficiency	UNIDO Ministry of Industry, Ministry of Environment Conservation and Forestry, Ministry of Energy etc.	Approved in 2013	USD 2 830 000 From GEF, USD 13 800 000 From Co-financing	To promote sustained GHG emissions reduction in the Myanmar industry by improvement of policy and regulatory frameworks and institutional capacity building for industrial EE and implementation of energy management system, based on ISO 50001, EnMS and optimization of energy systems in industry.

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
Enabling Activities to Facilitate early Action on the Implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Myanmar	UNIDO Ministry of Environmental Conservation and Forestry	Approved in 2013	USD 500 000 from GEF, USD 500 000 from co-financing	The overall objective of the proposed Enabling Activities (EA) is to strengthen national capacity and capability to prepare a National Implementation Plan (NIP) for the management of POPs with a basic and essential level of information to enable policy and strategic decisions to meet the requirements of the Stockholm Convention.
Strengthening Sustainability of Protected Area Management	UNDP Ministry of Environmental Conservation and Forestry (MOECAF), Wildlife Conservation Society	Approved in 2013	USD 6 127 850 from GEF, USD 17 896 300 from co-financing	Strengthen the terrestrial system of national protected areas for biodiversity conservation through enhanced representation, management effectiveness, monitoring, enforcement and financing
Development of the National Biodiversity Strategy and Action Plan (NBSAP)	UNEP Nature and Wildlife Conservation Division, Forest Department, Ministry of Forestry	Approved in 2008	USD 200 000 from GEF, USD 50 000 from co-financing	The goal of the project is to enable Myanmar to better meet its immediate obligations under the Convention on Biological Diversity, especially in relation to Article 6: General measures for conservation and sustainable use.
Summary of GEF regional projects including Myanmar				
Building Capacity for Regionally Harmonized National Processes for Implementing CBD Provisions on Access to Genetic Resources and Sharing of Benefits	UNEP Executing agencies : ASEAN Secretariat, ASEAN Centre for Biodiversity (ACB), United Nations University Institute	Approved in 2011	USD 750 000 from GEF, USD 750 000 from co-financing	The objectives of the project are to: (1) strengthen the capacity of Southeast Asian countries to implement the CBD provisions on ABS through the development of full and effective national ABS frameworks; (2) increase understanding of ABS issues among stakeholders and the general public and strengthen national capacity for country negotiators to have full understanding of issues and preferred options in the negotiation on the international ABS regime in a way that protects national interests and promotes equitable benefit sharing; and (3) improve public understanding of the contribution ABS can make to biodiversity conservation and sustainable livelihoods.

Project Title	Principal Donor/Agency	Dates	Budget USD (approx)	Project Objective and Primary Activities
	of Advanced Studies (UNU-IAS)			
Support to GEF Eligible Parties (LDCs & SIDs) for the Revision of the NBSAPs and Development of Fifth National Report to the CBD - Phase II	UNEP National Government Ministries	Approved in 2012	USD 6 118 200 from GEF, USD 5 513 640 from co-financing	Project Objective: With the overarching goal of integrating CBD Obligations into National Planning Processes through Enabling Activities, the main objective of this project is to enable GEF eligible LDCs and SIDs to revise the National Biodiversity Strategies and Action Plans (NBSAPs) and to develop the Fifth National Report to the CBD
GMS Forest and Biodiversity Program (GMS-FBP) - Creating Transboundary Links Through a Regional Support	ADB	Approved in 2014	USD 917 431 From GEF, USD 30 738 000 from co-financing	To strengthen transboundary cooperation for the sustainable management of a network of priority conservation landscapes in the Greater Mekong Subregion (GMS)

Appendix 11: Description of Project Sites



Map 1 : Location of project sites in Myanmar

Upland Pilot Site: Mindat and Kanteplet Townships, Chin State

The upland zone has a higher density of forest cover than the other zones and hence the bulk of project activities related to reduced deforestation and degradation of existing forest land will be concentrated here, covering at least three of the four key scenarios of the project's forestry component. Agricultural practices in this part of Myanmar are mainly centered on shifting cultivation on a 1-2 year cropping cycle. This is highly relevant to the project's nature as an integrated land management initiative, with forest and cropland components addressed through complementary strategies.

The upland zone site is the site through which issues of customary land use and tenure practices must be addressed, and lessons learned for scaling up of approaches to the rest of the country. Chin is one of Myanmar's seven states assigned to specific indigenous peoples, and has been recognized as the poorest state of the country by UNDP.

Although these peoples employ customary practices that are to a large extent unique, the issues raised by the convergence of these practices with legislation developed in Naypyitaw are common to all. As the region becomes more closely integrated with the rest of the country, through infrastructure and economic links, there will be an increasing trend for local communities to move from traditional shifting cultivation to more settled agricultural practices. The impacts of this trend on both forest and cropland management systems will be addressed by this project.

Mindat and Kanpetlet are adjacent townships covering some 5,664 square kilometers in the south of Chin State. Minbu and Sittwe districts lie to the south, Magway district to the east and Sittwe district to the west. The average high is 1,200-1,400 meters above sea level. A large proportion of Natma Taung National Park (713.5 square kilometers) lies within the two township areas, a reserve forest since 1936, National Park since 1997 and designated an ASEAN Heritage Park in 2012.

The physical environment has a strong influence in the socio-economic situation in the hilly Chin. There is no large-scale market because of the lack of transport infrastructure, and farming practices are marked by terrace fields. Nevertheless People's high mobility is another important feature of the township: village location sometimes changes, some villages have only 4 or 5 households, and there are a number of villages on the map where no one seems to live permanently. Access to most of the villages is very difficult. Some villages can be reached by four wheel jeep or motorbike in the dry season.

Township	Urban	Rural	Male	Female	Total Population
Mindat	10,000	33,500	21,000	22,500	43,500
Kanpetlet	3,500	18,000	10,500	11,000	21,500

The majority of households in both Mindat and Kanpetlet have their own house, though some 6 % of urban households in Mindat and 10 % in Kanpetlet do not. A higher proportion of households are urban in Mindat (about a quarter), than in Kanpetlet (16 %). There are over twice as many households in Mindat township, than in Kanpetlet (see table below).

Number of households and their location in Mindat and Kanpetlet townships

Township/Ward	Ward/ village tract	As % of total	Number of houses	As % of total	Number of households	As % of total
Mindat urban wards	4	8%	1,745	23%	1,861	24%
Mindat village tracts	46	92%	5,828	77%	5,829	76%
Mindat Total	50	100%	7,573	100%	7,690	100%
Kanpetlet urban wards	2	7%	513	15%	568	16%
Kanpetlet village tracts	26	93%	2,873	85%	2,886	84%
Kanpetlet Total	28	100%	3,386	100%	3,454	100%

A greater proportion of the population of Kanpetlet Township is rurally based (85 %) than of Mindat population (78 %) reflecting the District center status of Mindat, where almost a quarter of the population are in urban wards (22 %). There is a slightly greater proportion of women in Mindat urban wards (53 %) than in village tracts (51 %). The slightly higher proportion of women to men in both townships (52 % and 51 %) is consistent with average sex ratio for Myanmar[2].

WFP reported that approximately 90% of households in Mindat found their income from agriculture. However, in Mindat, there was the highest reliance on livestock for their income sources. The hill tribes in southern Chin State earn a living by trapping, hunting, and logging. They also practice shifting

[2] www.indexmundi.com/burma/sex_ratio.html (accessed 27.12.13)

cultivation. Since dense plant growth limits the use of land for agricultural purposes, they clear the land by burning the vegetation.

Kanpetlet Socio-economic features are similar to Mindat, predominantly hosting a rural population, with farming as the primary livelihood, and remoteness of most villages which can only be gained by foot.

Total area of Kanpetlet township is 250,297 hectares, of which 1.5 % is presently cultivated and total area of Mindat township is 316,078 hectares, of which 3 % is cultivated (see tables below).

Forests are the dominant vegetation, with just over half both township areas classified as uncultivable virgin land. In addition some 24 % of Mindat and 41 % of Kanpetlet are protected forest areas.

Land utilization in Mindat and Kanpetlet Townships

Description	Mintat Township		Kanpetlet Township	
	Total area (ha)	%	Total area (ha)	%
Net sown area	9,500	3%	4,000	2%
Cultivatable land still fallow	9,500	3%		
Fallow land area	14	0%		
Protected public forest area	75,000	24%	103,500	41%
virgin land area	49,000	16%	9,000	4%
cultivable virgin land area	19,000	6%		
uncultivable virgin land area	164,300	52%	133,400	53%
Encroached forest land area	375	0%		
Wild land area			415	0%
Total township area	316,078	100%	250,297	100%

Forest still covers a large proportion of the land area (40% in Kanpetlet and 23% in Mindat).Slash and burn agriculture practiced on the majority of cultivated land (85% in Kanpetlet and 92% in Mindat). Cultivated areas include very steep slopes with no terracing or slope stabilization measures, which show visibly high levels of physical erosion. Soil structure and nutrient loss are also likely to be high. These two townships fit croplands scenario three, as representing unsustainable cropland management in an erosion prone area. There are few existing conservation measures in place, minimal soil cover, few perennial crops and trees have yet to be integrated into the farm landscape.

Cultivators report decrease in yields, also with decreased length of fallow between cultivations for some. Decreasing production from existing swidden cultivation, combined with population pressure is likely to lead to expansion in areas subjected to slash and burn and/or further decreases in fallow period, leading to greater land degradation. Improved cultivation systems are required to reduce both current land degradation and potential future increases in degradation.

Customary land ownership in the area places ownership of the majority of this land in the hands of a few community leaders. Access to the land is through a ceremonial barter system whereby the cultivator obtains permission for use through verbal agreement and exchange of gifts. Cultivators report little difficulty in access to land, however it is limited to one year, making any investment in the land beyond advantage for the current crop year, unrewarded. Purchase of land is possible and some farmers have established permanent farms, which enable the introduction of terracing and inclusion of perennial crops and tree crops.

There are 6 reserved forests areas, 1 protected public forest area and a part of National park (Natma Taung) in Mindat Township. There are 220 ha of Taungya (shifting agriculture) and 74 ha agriculture

land areas and 55 ha garden in the reserved forests areas, protected forest areas and National Park. 54217 ha of Natma Taung National Park occupies in Mindat Township.

Natma Taung National Park, designated a ASEAN Heritage Park, contains significant floral (2,500 plant, 200 native orchid and 152 moss species) and faunal (300 bird, 105 reptile and amphibian, 77 butterfly and 35 beetle species) diversity. Some of which has global significance, such as the white browed nuthatch (*Sitta Victoriae*).

Township forest areas managed by Forest Department (FD): Mindat Township

Reserved and Protected Public Forest	Area (ha)
Mi E Reseved Forest	3679
Kyi Reserved Forest	101
Kyi Extesion Reserved Forest	3607
KyaukSit Extension 2 Reserved Forest	5900
Danti Extension Reserved Forest	34
Budaung Reserved Forest	2873
Total Reserved Forest Area	16195
Wakha Protected Public Forest	8821
Total Forest areas managed by FD (Permanent Forest Estate)	25015

Summary of Land use in Permanent Forest Estate: Mindat Township

Total Reserved Forest Areas	Protected Public Forest Areas	Netmataung National Park in Mindat	Ya (Taungya)	Agriculture Area	Garden
16195 ha (40017 Ac)	8820 ha (21796 Ac)	54,217 ha (133,970 Ac)	220 ha (541.32 Ac)	74 ha (180.76 Ac)	55ha (137.063 Ac)

Summary of Land use in Permanent Forest Estate: Kanpetlet Township

Total Reserved Forest Areas	Protected Public Forest Areas	Netmataung National Park	Ya (Taungya)	Agriculture Area	Garden
39436 ha (97447 Ac)	42436 ha (104859 Ac)	11950 ha (29530 Ac)	6995 ha (17285Ac)	68 ha (167.32Ac)	453ha (1119.9Ac)

The township forest department is in charge of forest rehabilitation program. The main activities are:

- establishment of community forestry
- assisted natural regeneration
- forest fire protection
- roadside plantation
- thinning
- marking standing trees
- pre-harvest inventory
- monitoring and checking of harvesting operations
- weeding
- forest road construction
- enrichment planting.

Mindat and Kanpetlet Townships are both designated as forest production areas by Mindat District administration. Teak and other hardwoods are harvested based on the availability of standing stems above minimum size according to the forest management plan produced by the district forest office. Since 2012, Mindat Township Forest Department have been implementing a conservation programme for maintenance of water resources in 65 ha of YeSanOo Natural Forest, in collaboration with local communities.

There are currently 27 staff members working for the Mindat township forest department, 24 of which are technical staff. The township Forest Officer holds a BSc degree in Forestry. He is in charge of one Ranger, seven Foresters, thirteen Deputy Foresters and two Forest Guards. Seven of these staff members hold Bachelor degrees in Geography and History. All members of staff have received numerous in-service trainings. The Ranger and Foresters have attended basic forestry courses from the Forestry School in Pyin Oo Lwin. Deputy Foresters and Forest Guards have attended forest related trainings (see tables below).

There are currently 19 staff members working for the Kanpetlet forest department, 15 of which are technical staff. The township Forest Officer holds a BSc degree in Forestry. He is in charge of one Ranger, two Foresters and eleven Deputy Foresters. Four of these staff member hold Bachelor degrees in Geography. All members of staff have received numerous in-service trainings. Ranger and Foresters have attended basic forestry courses from the Forestry School in Pyin Oo Lwin. Deputy Foresters and Forest Guards have attended forest related trainings according to the table below.

Natma Taung National Park is managed by the Nature and Wildlife Conservation Division. The total area of Natma Taung National Park is 71,348 ha, split between three townships as shown in the table below. The objectives of Natma Taung National Park are to conserve mountain ecosystems and important watersheds, to support local livelihoods and to promote ecotourism. Current conservation activities in Natma Taung National Park include patrolling and law enforcement, awareness raising and education, promotion of ecotourism and training events.

Area of Natma Taung National Park

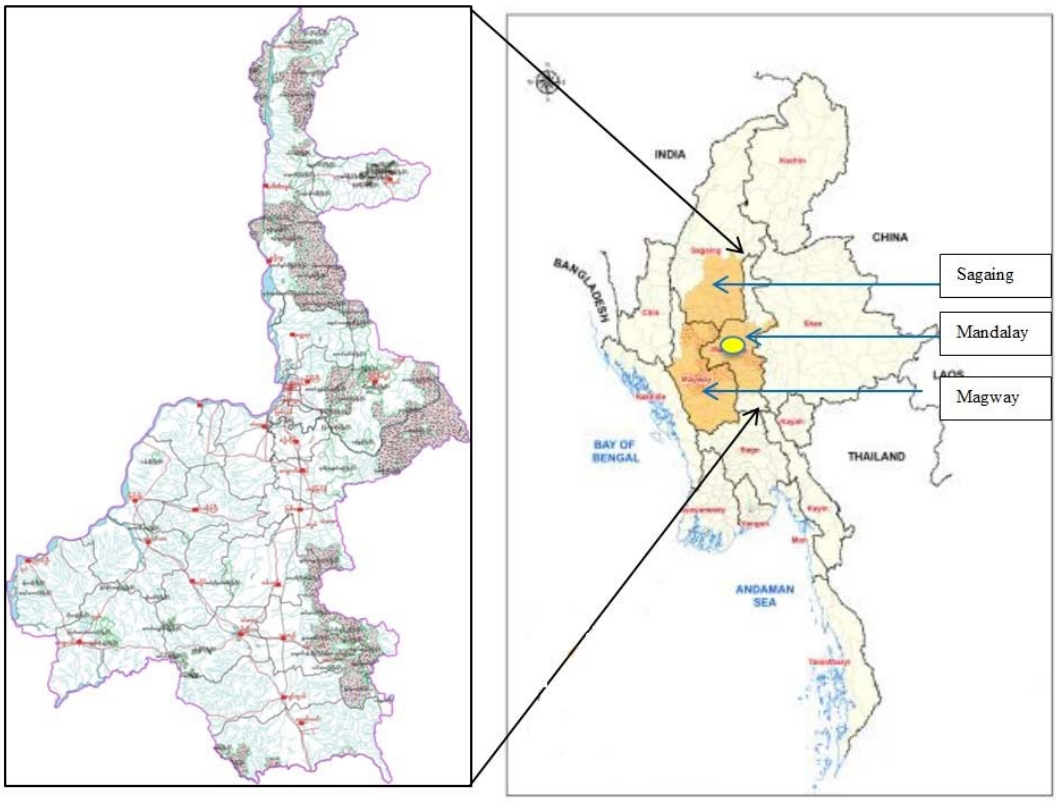
Township	**Area (ha)**
Kanpetlet Township	11,951
Mindat Township	54,217
Matupi Township	5,180
Total Natma Taung National Park area	71,348

The Department of Agriculture has district offices in Mindat, with Township offices in Kanpetlet and Mindat. In 2013, there were 18 staffs in Kanpetlet township of which 14 are extension workers and 19 in Mindat, of which 15 are extension workers. Most of the DA employees have degree in agriculture. All permanent staff received pre service training and additional training in soil problem solving, tea, fruit and oil production, and weed control for a few staff.

Extension initiatives have included mechanical terracing of land (problems with loss of fertility), introduction of tea (good quality, but marketing channels lacking), coffee cultivation (problem of poor quality, but NGOs now introducing better quality) and introduction of improved varieties (problem of their lack of suitability to locality).

Dry Zone Pilot Site: Kyaukpadaung and Nyaung-U Townships, Mandalay Region

At the heart of the country, incorporating several major population centers along the Ayeyarwaddy river, and the heart of production for all major crops excluding rice, the dry zone is a key region to implement the project. Moreover due to the low rainfall and marginal productivity of much of the area, the dry zone is particularly sensitive to land degradation as population density increases and demand for food grows. According to WFP, food security situation in the dry zone is still critical though there has been improvement in the past few years.



The area has very little remaining forest, and most of what left over is under strict protection. Without improvements in cropland management in the dry zone, pressure to clear forests in the upland area of this township, and hilly areas in other parts of the country adjacent to the dry zone, will increase. MOECAF objectives to restore forest in dry zone areas, through activities by the Dry Zone Greening Department, are in conflict with pressures to increase agricultural productivity from the region.

With respect to the project's forestry component, activities in the dry zone will be concentrated on scenario four, relating to reforestation and afforestation of land under FD management which is not currently under forest cover. Activities under the cropland component will focus on scenario two, relating to improved management of annual crops.

The activities in this region will directly contribute to the project's objective to reduce land degradation through the development and piloting of improved cropland management practices relating to the key commercial products grown in the dry zone, and to incorporation of these practices into a township-wide extension system. This will result in an increased proportion of cropland under long-term sustainable management and a reduction in the loss of soil

productivity. Retention of current agroforestry practices, with multi-purpose tree species and toddy palms an integral part of the landscape, will reduce net greenhouse gas emissions and thus contribute to the project's climate change mitigation objective. Afforestation activities, carried out through the establishment of community-managed plantations on land under FD administration, will also contribute to reduced net emissions. The project will also work with the FD to establish and pilot a model for sustainable community forest management in the hill areas of this township, reducing the area which will be converted from forest to permanent cropland as a result of ongoing reforms in land tenure legislation.

The pilot site 2 will be located in the Dry Central Zone of Myanmar; this ecological zone gathers townships from three different sub regions, and pilot site 2 will be in Mandalay division. There are 3 Dry Zone regions in central Myanmar, covering parts of the Magway, Mandalay and lower Sagaing Divisions. The dry zone lies between latitudes 19º 20"and 22º 50" north and longitudes 93º 40" and 96º 30" east. It is situated in the rain shadow area of the Yakhaing Yoma and obtains most of its rainfall from the southwest monsoon. Mandalay Division dry zone area will be considered for the dry zone model in implementation of project site. The general elevation is around 150 meters above the sea.

Mandalay division is located in the center of the country and total areas coverage is 7632612 Ac. It consists of seven districts, which are subdivided into 28 townships and 1416 village tracts and 4780 villages.

It is bordering Sagaing Region and Magway Region to the west, Shan State to the east, and Bago Region and Kayin State to the south. In the south of the division lies the national capital of Naypyidaw.

In Mandalay Division, there are 28 townships in total. However 15 Townships are stated as dry zone townships in arid area.

Pilot sites	**Region**	**Urban**	**Rural**	**Male**	**Female**	**Total Population**
Dry Zone Townships	Mandalay Division	484,190	2,825,013	1,636,365	1,672,838	3,309,203

The major economic activities in the Dry Zone are subsistence farming and small agricultural crops such as paddy, sesame and groundnut. Agricultural productivity is low and the farmers are heavily dependent on products from the natural forest especially fuel wood, pole, post and fodder to support their living and livestock. Many landless people are working as seasonal farm labourers, migrating to urban regions during non-planting time to find temporary employment.

Status of Land Utilization in Dry Zone of Mandalay Region in 2012-2013

Sr. No.	**Township**	**Total Land Area (ha)**	**Cultivable land Area (ha)**	**%**	**Net sown land area (ha)**	**%**	**Fallow land area (ha)**	**%**
A	**Myingyan District**	**641,562.12**	**423,735.73**	**66.05**	**387,919.87**	60.46	**35,797.65**	**5.58**
1	Myingyan Township	96,942.13	66,705.79	68.81	65,571.43	67.64	1,130.72	1.17

2	Nwarhtogyi Township	124,632.94	95,751.92	76.83	87,701.34	70.37	8,050.59	6.46
3	Kyaukpadaung Township	196,414.81	105,854.71	53.89	95,828.00	48.79	10,026.71	5.10
4	Ngazun Township	92,203.16	59,931.20	65.00	58,322.54	63.25	1,608.66	1.74
5	Taungtha Township	131,369.08	95,492.11	72.69	80,492.92	61.27	14,999.19	11.42
B	**Meiktila District**	**578,939.70**	**294,278.43**	**50.83**	**269,097.94**	**46.48**	**25,180.49**	**4.35**
6	Meiktila Township	123,121.81	64,798.06	52.63	60,134.76	48.84	4,663.29	3.79
7	Thazi Township	203,993.52	69,265.48	33.95	67,893.57	33.28	1,371.91	0.67
8	Wundwin Township	140,788.75	87,042.90	61.83	71,169.16	50.55	15,873.74	11.27
9	Mahlaing Township	111,035.61	73,172.00	65.90	69,900.45	62.95	3,271.55	2.95
C	**Yamethi District**	**382,125.05**	**169,260.62**	**44.29**	**161,836.50**	**42.35**	**7,424.12**	**1.94**
10	Yamethin Township	216,764.87	76,295.43	35.20	73,857.55	34.07	2,437.88	1.12
11	Pyawbwe	165,360.18	92,965.20	56.22	87,978.96	53.20	4,986.24	3.02
D	**Nyaung-U District**	**148,346.01**	**90,533.39**	**61.03**	**85,606.23**	**57.71**	**4,927.15**	**3.32**
12	Nyaung-U Township	113,566.17	68,894.78	60.66	65,682.31	57.84	3,212.46	2.83
E	**Kyaukse District**	**415,722.78**	**189,594.90**	**45.61**	**184,385.67**	**44.35**	**5,209.23**	**1.25**
13	Kyaukse Township	187,850.26	44,989.48	23.95	44,356.94	23.61	632.54	0.34
14	Myitthar Township	88,743.83	54,365.44	61.26	50,252.53	56.63	4,112.91	4.63
15	Tadaoo Township	94,273.98	61,922.30	65.68	61,725.21	65.47	197.09	0.21

Source: Regional Land Use Department, DOA, 2014

The area is gently undulating and is located in the dry zone, defined as receiving less than 120 centimeters of rain per year. A variety of cropping patterns are practiced, including double cropping system and mixed cropping on irrigated areas. The system practiced depends on the availability of irrigation, productivity of the land and resources available to farmers for investment in cultivation. Land degradation issues include reduced productivity of the land linked with reduced water holding capacity, reduced organic matter content and need for increased use of fertilizers. Continuous cultivation of annuals on erosion prone land has also led to some areas becoming degraded. There are limited organic matter enrichment practices, improved land cultivation for soil erosion control and improved water retention practiced as yet. Rainfall in the area is low, with an average of some 30cm per year, with a high variation between years.

The majority of local businesses are linked with the agricultural sector, catering to agricultural input requirements, irrigation provision and marketing. In terms of quantity, upland crops such as pulses and beans, oil crops such as sesame, groundnut and sunflower are the major products.

Land use in Mandalay division Dry Zone

Land use type	Area (Ac)	% of Land Use
Closed Forest	1022356.1	17%
Open forest	328891.8	6%
Taungya	364855.1	6%
Agricultural land	3746642.1	64%
Water body	140993.1	2%
Other land	277279	5%
Total	5881017.2	100%

There are 72 Reserved Forests with 1370516.41 Ac, 31 Protected Public with Forests 174898.70 Ac and 6 Protected areas with 83688.64 Ac. Forest lands cover by 21% (1629103.75 Ac) of the whole region.

The Dry Zone of Myanmar is the most water stressed regions of the country and also one of the most food insecure. The extreme variability of rainfall, high intensities, limited rainfall events in the growing season and poor spatial and temporal variability is believed to be a major constraint to rural livelihoods and hence an underlying contributor to the poverty of many households. Water related concerns are known to have a strong bearing on food insecurity and low incomes in the Dry Zone. The Dry Zone faces two main challenges in the context of water: reliable supply of safe water for drinking and domestic purposes; and access to water to sustainably increase agricultural production, food security and incomes. Land degradation changes the way water moves through a catchment, increasing the runoff rate and decreasing sub-surface flow and retention in the soil profile.

Forest rehabilitation program is managed by forest department. The main activities are implementing for reducing shifting cultivation by doing agro-forestry, the establishment of community forestry, awareness raising and seedlings distribution, natural regeneration improvement operation, forest fire protection, roadside plantation, weeding, commercial teak plantation, natural forest conservation and watershed plantation.

Dry Zone Greening Department take responsibility for establishment of forest plantation, protection of remaining natural forest, introducing and promotion of the utilization of wood fuel substitutes, and management and development of water resources. In addition, they carry out establishment of model forest village and environmental awareness campaign.

About 8000 ha of forest plantations are established annually on deforested and degraded areas to restore the forest cover and rehabilitate the environment. The total area already planted up to 2009-2010 is about 127,421 ha.

Four major types of plantations established are as follows;

1) Village supply plantations
2) Watershed plantations
3) Plantation for greening of mountain
4) Other greening plantation

To rehabilitate the existing 0.73 million hectares (1.8 million acres) of natural degraded forests in the Dry Zone, DZGD effectively protects about 80,000 ha annually out of the existing remaining natural forests in the Dry Zone of Central Myanmar. Within the natural forest selected for protection, about 10% of the area is selected again for the special natural generation operation. About 677,835 ha of remaining natural forests have been effectively protected during the period from 1997-98 to 2009-10.

To support forest conservation, the following activities of fuel wood substitution are being carried out:

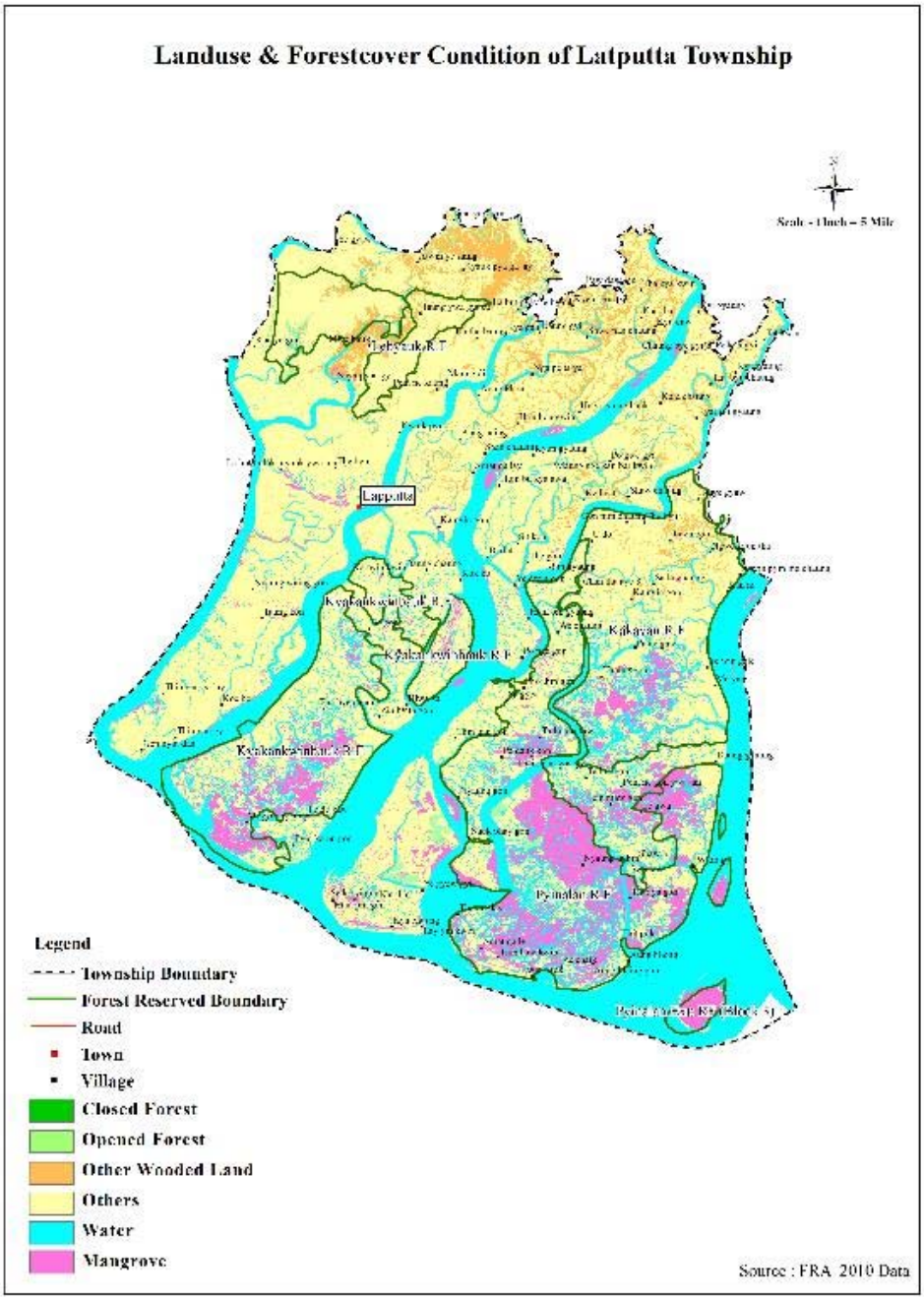
1) Distribution of improved Cooking Stoves: During the period from 1997-98 to 2009-10, total 450, 916 improved cooking stoves had been distributed in order to reduce the pressures on local forests and amount of wood consumption
2) Promotion of Fuel Briquette Production and Utilization: To substitute the fuel wood utilization, the DZGD distributed fuel briquette (86509, 127 no) up till to 2010.
3) Utilization of Agricultural Residues: Utilization of agricultural crops such as stalks of sesame, pigeon pea, cotton, peanut husks are encouraged as fuel wood substitutes. More than 246,000 tons of agricultural residues were used as alternative fuel.

The following activities are being carried out to ensure water supply:

1) Construction of Small ponds: During 1997 and 2010, total 1618 of small ponds and 1751 of check-dams were dug and constructed in village of 13 districts to supply water for trees, people and animals
2) Utilization of Underground Water: More than 100 of deep tube-wells were established to address the problem of the shortage of drinking water supply and also for nurseries and plantations
3) Construction of river water-pumping system: Pumping of water from river using water pumps at places of special requirement is also being implemented to supply water for greening activities

Site 3: Coastal Zone Pilot Site: Laputta Township, Ayeyarwady Region

This township constitutes the 'coastal zone' site for the project. Scenario one of the agricultural component – improved management of paddy land – will be implemented here. It will also contribute to scenarios two and four of the forestry component, through community based management and restoration of mangrove forest areas.



The Ayeyarwaddy Delta, of which this township is part, is the rice bowl of Myanmar and therefore vital to the national economy and food security. It was severely affected by cyclone Nargis in 2008, resulting in widespread destruction of paddy land and mangrove forests from which it is yet to fully recover. The inability of local communities and government agencies to respond effectively to the challenge of restoring this land, in addition to the need to maintain local livelihoods and food security, has resulted in an increase in paddy cultivation with high methane emissions and accelerated clearance of remaining mangrove areas for conversion to paddy and shrimp farming.

Activities under the cropland component in this site will contribute towards the project's climate change mitigation component through the development, piloting and extension of 'climate-smart' paddy cultivation practices, reducing emissions of methane per unit area. Activities under the forest component will contribute to both objectives of reduced land degradation and climate change mitigation through the development of an integrated land management model, incorporating community forestry into approaches to maintain fuelwood supplies, riparian strip along watercourses and long-term sustainability of shrimp farms.

Laputta Township is located on the Ywe river at the heart of the delta area, just 30 kilometers from the mouth of the Ayeyarwady and the Andaman sea. It is the furthest point of road access for the district, further access being by boat. It has a large harbour and goods are brought to the town and surrounding area by sea, rather than by road.

Laputta is effectively at sea level and the township covers some 3,006 square kilometers in the central delta area. It is bounded to the East by Bogalay township, to the west by Ngapudaw township and to the south, by the open sea of the Bay of Bengal and Andaman sea. To the north are the townships of Myaungmya, Wakhema and Mawlamyaingkyun.

Almost all source of income are related to natural resources : local people mainly rely on mangrove resources, fisher products, paddy fields and salt pond for their livelihood

Laputta has the largest monsoon rice cultivated area in the country, with almost 150 000 (the actual figure being 148,339) hectares, and its economy is dependent on agriculture, particularly rice cultivation. The potential for double rice cropping is limited due to farmers' lack of access to necessary inputs and salt water ingress in winter months, which effects the summer rice crop (it matures in summer, but grows during the winter months). Cultivation of summer rice has reduced form some 50,000 acres 5 years ago (when the government was providing subsidies for diesel and fertilisers) to half that area, some 9,712 hectares presently. This reduction in summer rice cultivation has impacted investment in monsoon rice for some.

Both broadcasting and transplanting of rice is practiced, dependent on the finances and labour available to farmers. Awareness of advantages to transplanting is there, however farmers commonly only manage to practice transplantation over a proportion of their land. Land holdings are quite large, with 20 acres being common for a family and some much larger parcels. A significant proportion of the population, (estimate of 30 %), have no land and are dependent on fishing and agricultural labour for livelihoods. While daily rates are relatively high at harvest time ($4 a day), agriculture provides only seasonal work and the landless are significantly worse off than those with land. The impact of the cyclone Nargis (2008) is still felt in this delta area where an estimated 140,000 people (many being children) lost their lives. The area has a lower population than previously and labour availability is consequently lower. The majority of farm animals were also lost in the cyclone and population levels, particularly of larger ruminants, still smaller than previously.

Population of Labutta township	**Urban**	**Rural**	**Male**	**Female**	**Total Population**

Labutta	32,787	469,920	251,544	251,163	502,707

	Ward/ village tract	Number of villages	Number of households
Laputta urban wards	10		6,697
Laputta village tracts	50		50,894
Laputta Total	60	360	57,591
Pyinsalu (sub tsp) urban wards	3		607
Pyinsalu (sub tsp) village tracts	11		21,508
Pyinsalu (sub tsp) Total	14	123	22,115

There are 4 reserved forests managed by the Forest Department in Labutta Township, with a total area of 112,307 ha (see table), including water bodies covering a total area of 8,950 ha. An estimated area of 60,822 ha has been identified as encroachment of agricultural land. This area will be excluded from reserved forest areas and re-designated as agricultural land. Home gardens and salt pond areas cover 2,944 ha. Therefore, the reserved forest area that is under tree cover is 37,666 ha.

Township forest areas managed by Forest Department (FD) (Labutta Township)

No	Reserved Forest	Area Ha
1	Kyakankwinbauk Reserved forest	28703
2	Pyinalan Reserved Forest	43517
3	Kakayan Reserved Forest	29398
4	Lebyauk Reserved Forest	10689
	Total Reserved Forest Area	112307

Forest rehabilitation program is managed by forest department. The main activities are implementing for mangrove forest plantation, forest conservation, natural forest improvement operation, seedlings distribution, community forestry establishment. Currently, there are total 27 staffs are working for forest department in Labutta Township, with 23 staffs as technical officer. Township Forest officer and one Deputy Township Forest Officer (Range Officer) obtained Bachelor of Science in Forestry. There are 2 rangers, 9 foresters and 9 Deputy Foresters, one is Forest Guard and two are boat drivers. Five staffs are graduates of arts and sciences (Myanmar, History and Geography). All members of staff have received numerous in-service trainings. Ranger and Foresters have attended basic forestry courses from Forestry School, Pyin Oo Lwin.

NGOs supported Activity in Labutta Township

Name of the organizations	**Activities**
Action Aid	Distribute CBDRR Tool Kits. Carpenter training at YGN to construct DRR Shelter. School base

	DRR and CBDRR Activity. Forming DRR Committee. Women right. Youth empower
ADRA (Adventist Development and Relief Agency)	Mangrove friendly aqua culture CF, natural forest improvement, river back control planation and Construct warehouse for sea food product
AVSI	Agriculture (seed support, dam embankment repair)
Aryoneoo	Agriculture works. Partnership with Mercy Corp. Training for paddy cultivation. Training for compose fertilizer making
Consortium of Dutch NGOs (CDN)	Agriculture base activities (provide seed, training for technical know-how for cultivation of vegetable
IRRI	Agriculture works. Partnership with Mercy Corps. Training for paddy cultivation.
Mercy Corps	Agriculture Activities. Training support for vegetable plantation, Leadership, food processing and book keeping
Microfinance (Pact Myanmar)	Support loan for farmer, Support for pregnant woman
Proximity Designs	Distribute farm tools and hand pumps. It sell farm tools with low price. It sells solar panel.
Save the Children	Education activities in LPT Township. ECCD activities. Training for teachers for ECCD. ECCD committee formed
World Concern Myanmar	Sustainable agriculture and livelihoods

Appendix 12: The potential CSA and SFM scenarios

Sustainable Rice Intensification: Approximately 8 million hectares of land is cultivated under paddy in Myanmar each year. Hence water resources management needs to be enhanced The waterlogged and warm soils of rice paddies make this production system a large emitter of methane. Inefficient water management (continuously flooded) of most of Myanmar's rice paddys results in almost 50% more methane emissions than improved water management. Intermittently flooded rice paddy using water-saving 'multiple aeration' methods such as potentially reduces methane emissions by 48%. Ample adoption of Alternate Wetting Drying (AWD) facilitates an optimum use of irrigation water, so that the cropping intensity can be increased from ca. 119% to ca. 160% (related to the maximum of 200% in these double-cropping systems).

Integrated Plant Nutrient Management (IPNM): Research on rice cultivation has identified that emissions mainly occur in the few months of the year when the ground is fully waterlogged. A more integrated approach to rice paddy irrigation and improved fertilizer use efficiency is to be introduced in order to reduce methane emissions from paddies. This can include piloting urea deep placement (UDP) technology where urea in the form of super granules or small briquettes is placed under the soil near the roots and out of the floodwater where it is susceptible to loss - a practice that has shown 50-60% savings in urea use and yield increases of ~1 ton/ha. Nutrient management will also include incorporating rice straw that is now burned back into the soil.

Improved Annuals cropping: Approximately 6 million hectares of land is cultivated under annual cropping in Myanmar each year. The practices utilized by farmers (e.g. cropping patterns, planting dates and farm management techniques) determine the extent to which the land will increase soil carbon and resist erosion or the opposite. Under scenario 2, GEF resources will enable Early Adopter Teams (EATs) in dry land and upland areas to elaborate and implement specific Improved Agronomic Practices (IAP) for annual crops.

The type of practices that the EATs will be enabled to consider include:

Soil fertility management
Cover crops used to increase soil fertility are referred to as "green manure" and are used to manage a range of soil macronutrients and micronutrients such as nitrogen, which is beneficial for productivity as nitrogen is often the most limiting nutrient in crop.

Production
Cover crops can be grown for a specific period and then ploughed under before reaching full maturity in order to improve soil fertility and quality or can be left in the ground as permanent cover reducing erosion, increasing water infiltration, and precluding weed growth.

Multiple cropping
The practice of growing two or more crops in the same space during a single growing season can be part of a farmer's IPNM strategy including the use of legumes in intercropping, planting an additional crop in the spaces available between the main crop. Crop rotation replenishes nitrogen through the use of green manure in sequence with cereals and other crops and can also improve soil structure and fertility by alternating deep-rooted and shallow-rooted plants. Because crop rotation also mitigates the build-up of pathogens and pests it can be an important contributor to integrated pest management (IPM).

Improved crop varieties
Another important tool in the ICLM/CSA toolbox, including new salinity, drought and submergence tolerant varieties of rice and other crops. Early adopter teams will have access to such tools as they develop their own ICLM/CSA plans for implementation.

Water management
Where relevant, EATs will be able to improve water management and cropping conditions through better terrace design, contouring, water harvesting structures, tied ridge system, riverbank protection, drainage, and small-scale irrigation. The project will enable landless rural farmers to develop small irrigation systems to improve productivity in lands degraded by slash and burn.

Site-specific Nutrient Management (SSNM)
In dryland and upland pulse farming, SSNM practices will also be introduced and promoted. This will include enhanced organic fertilization through mulching, manure management and composting in combination with inorganic fertilizers. DoA extension agents will be trained to calculate the adequate amount of fertilizer through proper soil fertility analysis. Existing institutional and human capacity for soil testing will be improved and strengthened for practical sustainable use.

Tillage and residue management practices
A key change in cropland management practices to be instituted under this scenario will be to enable farmers to stop burning crop residue and to manage the residue instead. Systems that retain crop residues increase soil C because these residues are the precursors of soil organic matter. For example, conservation tillage that leaves at least 30% of the ground covered by crop residue during seedbed preparation increases soil organic C content when land is converted from conventional plough-based use. Minimizing soil disturbance and increasing the surface retention of crop residues will decrease soil C losses through enhanced decomposition and reduced erosion. Reduced or minimum/zero tillage with permanent soil cover (mulching) and crop rotation enhance crop productivity while sustaining and improving natural resource potentials, particularly soil fertility, water availability and soil biodiversity while sequestering soil C.

Land-use change to perennials
Under this scenario, project resources will provide the technical capacity to enable EATs in dry land areas to incorporate agroforestry into landscapes now planted in annual crops. Considering its wide applicability, agroforestry has a high potential to mitigate CC through carbon sequestration in soil and biomass (IPCC 2000). Average C storage by agroforestry system is estimated at 21-50 Megagrams C/ha/year in sub-humid and humid regions respectively (Schroeder 1994).

Three Scenarios for improved cropland management	Column 1: Gross fluxes "Without Project" (tCO_2eq/ha)		Column 2: Gross fluxes "With Project" (tCO_2eq/ha)		Column 3: Long-term benefit (tCO_2eq/ha)		tCO_2eq /ha/ year	Short term 4 yr benefit (tCO_2eq/ha)
Irrigated Rice	**112**	**source**[9]	**89**	**source**	**-23**	**sink**	-1.2	-4.9
Annual Crops	**12**	**source**	**-46**	**sink**[10]	**-58**	**sink**	-3.1	-12.2
Agroforestry/Perennial Crops	**0**	**neither**	**-617**	**sink**	**-617**	**sink**	-32.5	-129.9

Also importantly to farmers, agroforestry contributes to food security by providing multiple products and benefits to farmers such as food, fodder and shade for livestock, timber and renewable wood energy. It also supports enhanced agricultural production by improving soil conservation, soil water holding capacity, soil organic matter, soil fertility, and other ecosystem

[9] Source = emissions
[10] Sink = avoided emissions or sequestration

services. Other incentives will also be important to encourage farmers to make such land-use changes. Perennial cropping (e.g. tea, spice, fruit trees) can provide significant income to farmers, while increasing trees and permanent soil cover in a landscape and production system. This work will draw upon the existing infrastructure of FD-supported tree nurseries in Myanmar as well as DoA supported township level agriculture extension offices and research farms to ensure seedlings and seeds of various species are available.

Under Component 3, project resources will form Forest user group Early Adopter Teams (FEAT) to demonstrate improved sustainable forest management across four different scenarios to be developed in detail during the PPG and which are outlined below. Specific training programmes for foresters and community foresters already developed by FAO and other partners will be utilized where appropriate to increase cost and time-effectiveness. GEF incremental investments will focus on enabling stakeholder to demonstrate credible, measureable improvements in forest condition and reductions in pressure on forest resources, particularly agriculture expansion.

Scenario 1: Improved management of State Forest by FD.

The non-project scenario is unsustainable production forest management in 50,000 ha of FD-managed forest with an average density 80 m^3/ha and an average net degradation of 5m^3/ha/yr. State forestland (closed forest) is under-going slow and steady degradation and loss of forest cover due to inadequate planning and poor harvesting practices in closed forests. The project scenario is managed under the MSS with 0 m^3/ha net gain/loss by year 4 of the project. Degradation will be halted and a balance between extraction and recuperation will be maintained beyond the project period. GEF incremental investments will strengthen the capacity of the FD to develop and apply multi-functional forest management plans across 50,000 ha of closed forest, avoiding emissions of 375,750 tC over years 3-5 of the project. Though the FD officially adheres to the MSS in all production forest areas, many districts do not implement all provisions of the system effectively.

This results in the continuous and progressive degradation of many state-managed forest areas. Among the key direct causes of this degradation are management plans based on incomplete or poorly-conducted inventories and incomplete knowledge of the MSS. When timber is harvested, basic principles of felling technique and extraction are sometimes not applied, leading to damage to the surrounding ecosystem. Local communities and other stakeholders continue to extract timber and forest products on an ad hoc basis, because their needs are not acknowledged, and therefore not incorporated, in the forest management planning process. Forestry officials responsible for development of plans often have incomplete knowledge of the multi-purpose nature of forest management, concentrating narrowly on production objectives. Furthermore, resources for training institutions and for the materials and infrastructure required for forest management and protection are growing ever more limited.

The project will strengthen SFM in forestlands in the pilot areas by introducing new, multi-functional ecosystem-based forest management and by strengthening the participatory nature of forest planning and management. Project resources will introduce improved multi-functional management in the pilot areas, by enabling stakeholders to conduct ecosystem-oriented targeted forest survey/inventories to inform SFM planning and implementation. The project will also develop and implement capacity building packages for MSS, SFM, forest inventory and planning, incorporate local needs assessments into management plans and enhance the ability of local communities to influence forest management planning and hold forestry officials to account for the implementation of the plans.

Scenario 2: Community forests: reduced degradation.

The non-project scenario is continued degradation of 4,000 ha of FD-managed and/or community-managed forests which are already severely degraded, mainly at the boundary between closed forest area and agricultural land. This degradation occurs due to shifting cultivation and/or unsustainable extraction of fuelwood and minor forest products. The average density of these forests is 30 m^3/ha, and loss of carbon stocks through degradation averages 2m^3/ha/yr.

The project scenario is sustainable forest management by communities, with a net gain of 1m^3/ha/yr by year 4 of the project and, in the long-term, recovery of the forests to a density of 100 m3/ha. GEF investment will enable stakeholders to focus on demonstrating sustainable community-based forest management across 4,000 ha of forests at the boundary between closed forest area and agricultural land, which is currently suffering sustained and continuous degradation. These forests are under extreme pressure from local communities' demands for forest products and from shifting agriculture practices, which become more serious as population density has increased and the productivity of adjacent agricultural land fails to improve. Scenario 2 will reduce forest degradation and begin to reverse it, by effecting the handover of these areas to local communities and by assisting these communities in the development and implementation of SFM plans.

The capacities of local communities will be strengthened through training in forest inventory, preparation and implementation of forest management plans and business plans; silvicultural techniques for rehabilitation of degraded forests, fire management and development of income generating activities using Non-Timber Forest Products (NTFPs). These activities will be supplemented by interventions designed to reduce the pressure on forests, for example through the introduction of community-managed grazing restrictions and stall feeding systems for livestock, on-farm agroforestry and fuel-efficient stoves. In order to facilitate this activity, the project will work with the FD in the ongoing review of forest policy and the Community Forestry Instruction (CFI), in order to expand its application from plantations on barren land to areas which still include viable forest cover.

Scenario 3: Community forests: reduced deforestation.

The non-project scenario is conversion of 4,000 ha of MoAI-managed land which is currently under forest cover (unclassed forest) to agricultural land. The average density of these forests is 30 m^3/ha. The project scenario is sustainable forest management by communities, with a net gain of 1m3/ha/yr by year 4 of the project and, in the long-term, recovery of the forests to a density of 100 m^3/ha.

Scenarios 2 and 3 have essentially the same long-term outcome, as defined by the project scenario. However, in accordance with the definitions of activities under REDD+, as defined in the Cancun Agreements under UNFCCC, Scenario 3 constitutes reduced deforestation (not degradation, as in scenario 2) because the non-project scenario entails conversion from forest to non-forest land. This conversion is a consequence of the land's status as MoAI-managed. MoAI's strategy is to maximize the productive capacity of the land under its jurisdiction, including that which is currently under forest cover. Such land may account for 30-40% of forest area in Myanmar and is termed "unclassed forest" by the FD because it is not within their mandate to classify or manage these forests. The strategies employed within Scenario 3 are similar to those in Scenario 2; handover of forest management to local communities, capacity building and community-based SFM, complemented by interventions to reduce demand for forest products. However, the project must work with both the MoAI and FD jointly to effect the handover of land to local communities under Scenario 3.

Scenario 4: Community forest plantations.

The non-project scenario is management of 2,000 ha of non-forest land, in the dry zone, under FD control, as agricultural land with 1 crop every 2 years. The project scenario is teak plantation (long rotation of ≥ 25 years) under a taungya system, with net growth rate of $4m^3$/ha by year 3 and 6m3/ha by year 5. Long-term density of $160m^3$/ha.

GEF investment will promote expansion of community forestry plantations on barren lands currently under the jurisdiction of the FD, through the taungya system. These lands are currently marginally productive agricultural land with, on average, one crop every two years. No local communities or individuals have secure tenure over these lands, although some have been utilized as agricultural land for several decades. The current users of the land, therefore, are vulnerable to their use being deemed illegal. The taungya system, developed in Myanmar during the 19th century, gives local households and communities rights to use the land for crop production in return for planting and providing aftercare to teak seedlings on the same land. After 4-5 years, when canopy closure inhibits further use for agricultural products, the household or community is granted another plot of land. The communities are also entitled to a share in the revenue from sale of the timber when harvested. The project will facilitate agreements between the FD and local communities for establishment of teak plantations under the taungya system and will support the process of handover of these plantations as community forests.

Appendix 13: Letters of Co-Financing

Please see the separate attachments.

Appendix 14: Tracking Tools

Please see the separate attachments of:

- GEF CC Mitigation Tracking Tool;
- GEF LD Tracking Tool;
- GEF Sustainable Forest Management (SFM)/REDD+ Tracking Tool.