

ミャンマー乾燥地共有林研修・ 普及計画短期調査及び実施協議調査 報告書

平成13年12月

JICA LIBRARY



1172011〔7〕

国際協力事業団
森林・自然環境協力部

自然森
JR
01-017

**ミャンマー乾燥地共有林研修・
普及計画短期調査及び実施協議調査
報告書**

平成13年12月

国際協力事業団
森林・自然環境協力部



1172011【7】

序文

日本国政府は、ミャンマー連邦政府からの技術協力の要請に基づき、乾燥地共有林研修・普及計画にかかわる短期調査を行うことを決定しました。

これを受け、国際協力事業団は、平成12年11月および平成13年6月に2回の短期調査団を現地に派遣し、関連情報を収集するとともに協力の枠組みについてミャンマー国関係者と協議を行い、調査結果をプロジェクト・ドキュメントに取りまとめ、平成13年10月に実施協議調査団を派遣し、討議議事録(R/D)の署名を行いました。

この報告書が本計画の今後の推進に役立つとともに、この技術協力事業が両国の友好・親善の一層の発展に寄与することを期待いたします。

終わりに、本調査に対し御協力と御支援を頂いた両国の関係者の皆様に、心から感謝の意を表します。

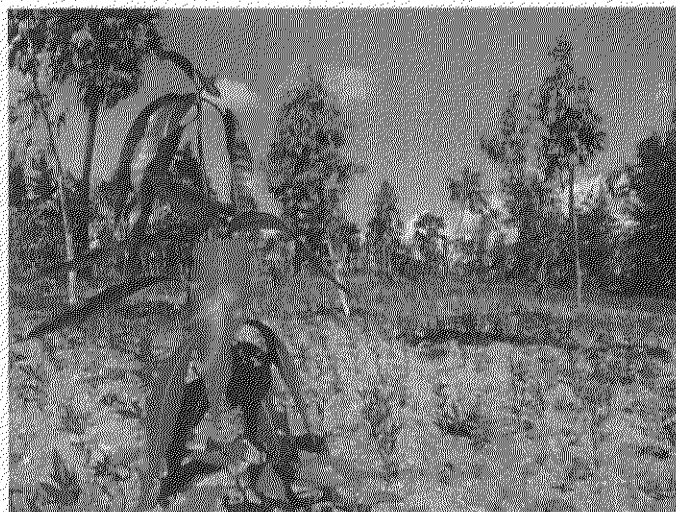
平成13年12月

国際協力事業団
理事 鈴木 信毅

中央林業開発訓練センター
(CFDTC) における研修風景



読売植林プロジェクトサイト
(ニャンウー) の共有林地



ジャガリー作りの様子



乾燥地緑化局(DZGD)の苗畑
(ニャンウー)



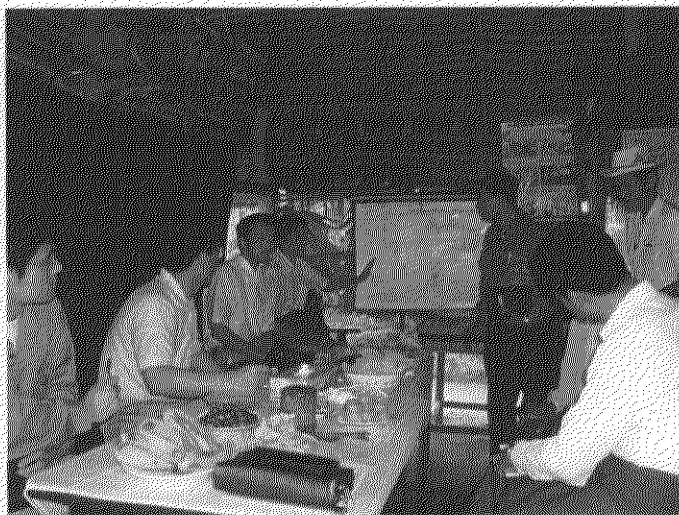
CFDTC サブセンター
建設予定地 (マンダレー管区、
パティンジタウンシップ、
森林局事務所敷地内)



第2回短期調査
ミニッツ署名式にて



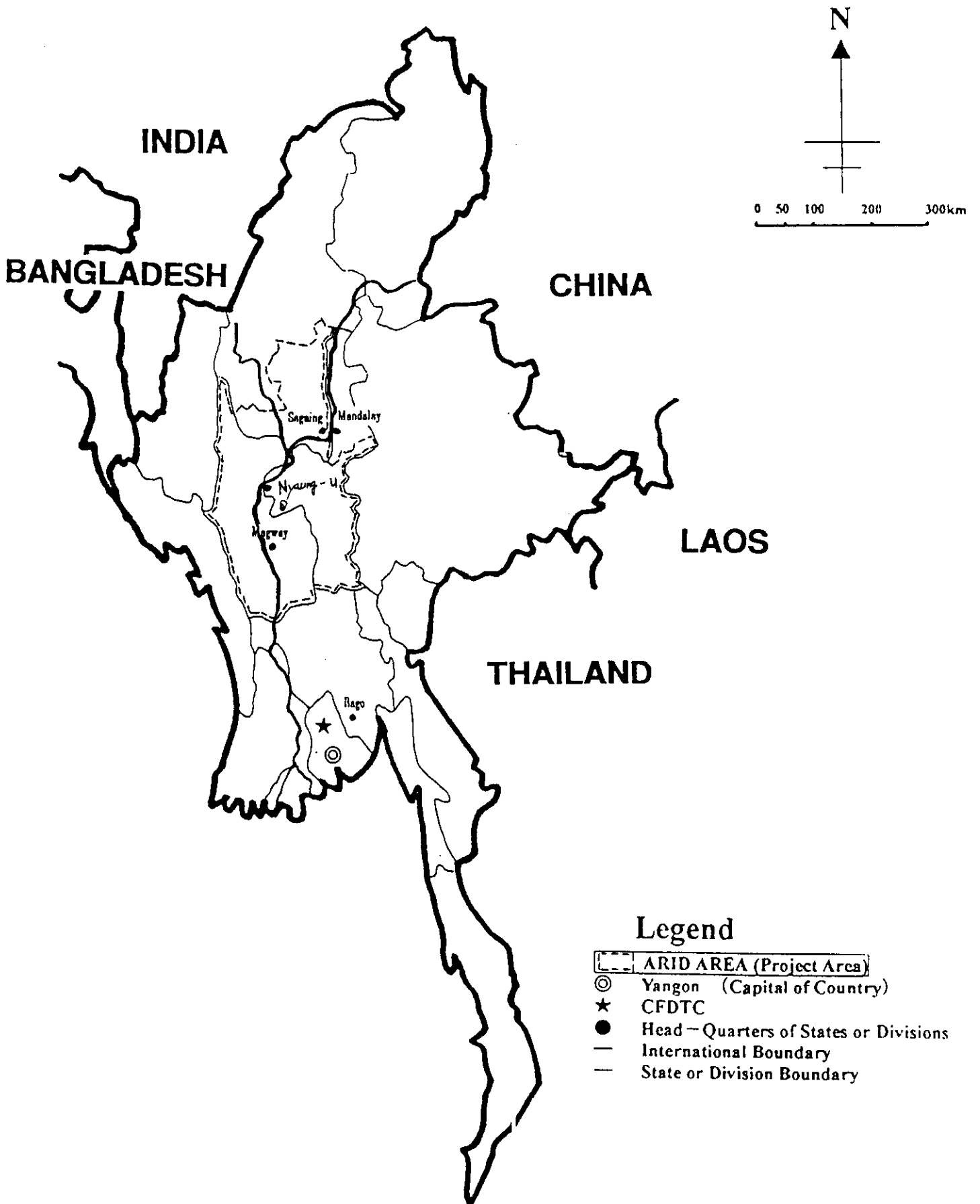
第2回短期調査現地調査風景



討議議事録(R/D)の署名交換



LOCATION OF PROJECT AREA



目 次

序文

写真

プロジェクト位置図

1. 調査の経緯と目的	1
2. 第1回短期調査	2
2-1 派遣期間及び構成	2
2-2 調査日程	2
2-3 調査概要	3
2-4 団長所感	4
3. 第2回短期調査	5
3-1 派遣期間及び構成	5
3-2 調査日程	5
3-3 調査・協議の主な内容	6
4. 実施協議調査	8
4-1 派遣期間及び構成	8
4-2 調査日程	8
4-3 調査・協議の主な内容	9
5. 主要面談者	11

附属資料

資料 1. 討議議事録 (R/D)	15
資料 2. 実施協議調査協議議事録 (プロジェクト・ドキュメント M/M)	25
資料 3. 第2回短期調査協議議事録 (M/M)	101
資料 4. 事業事前評価表	113
資料 5. 分野別報告	
(1) 社会林業	117
(2) 乾燥地造林	122
(3) 村落生産活動分野	129
(4) 計画分析／社会調査分野	132

1. 調査の経緯と目的

ミャンマー政府は、森林資源の維持・造成という政策課題を実現していくために、人的資源の拡充、質的向上を目的とし、1990年に無償資金協力により完成した中央林業開発訓練センターにおける技術協力を我が国政府に対して要請し、「ミャンマー中央林業開発訓練センター計画」が実施された（本体協力期間：1990年8月1日～1997年7月31日、フォローアップ協力期間：1995年8月1日～1997年7月31日）。

その後、地域住民の薪炭材採取等により森林の収奪が著しい中央乾燥地の緑化のために、ミャンマー政府は地域住民の参加による薪炭材等森林造成活動（住民参加型林業）の促進を林政課題の重点とし、住民参加型林業促進のための普及活動を行う者の育成を目的とした技術協力を要請した。これを受け、我が国政府は上記プロジェクトのアフターケア協力を実施した（協力期間：1999年4月1日～2001年3月31日）。

今般、上記プロジェクトの成果を基に、ミャンマー国における森林資源保全、参加型林業への取り組み、及び林業分野での社会経済発展に資するため、森林局職員の普及能力の更なる向上、中央乾燥地の農村地域における緑化を通じた収入源創出を目的とした協力がミャンマー国政府より要請された。

この要請を受け、2001年11月および2002年6月に2回の短期調査を行い、現地調査を行うとともにプロジェクトの概要について協議を行った。また、2002年10月に実施協議調査団を派遣しプロジェクト・ドキュメントについて協議議事録によって確認を行い、討議議事録（R/D）の署名を行った。

2. 第1回短期調査

2-1 派遣期間及び構成

平成11年11月30日(木)～12月23日(土)

担当分野	氏名	所属・職位
団長・総括	齋藤 克郎	国際協力事業団 森林・自然環境協力部 森林環境協力課 課長
社会林業	鶴 助治	農林水産省森林総合研究所九州支所育林部長
乾燥地造林	田邊 眞次	社団法人 日本林業技術協会 国際事業部 参事
村落生産活動	長田 守	株式会社ニッセイ基礎研究所 社会研究部門主席研究員
計画分析/社会調査	北尾 理恵	株式会社三祐コンサルタンツ 海外事業本部技術部 第二課

2-2 調査日程

日付		活動内容	宿泊地
11月30日	木	(コンサルタント団員)出発-ヤンゴン着	ヤンゴン
12月1日	金	大使館表敬、JICA 事務所訪問、森林局(FD)、乾燥地緑化局(DZGD)、計画・統計局(PSD)表敬、協議	〃
12月2日	土	CFDTC(A/C)専門家との打ち合わせ	〃
12月3日	日		〃
12月4日	月	農業灌漑省、ヤンゴン経済大学、UNDP, UNICEF	〃
12月5日	火	移動	調査地
12月			
6-11日	水	現地調査	〃
12月12日	火	(官団員) 出発-ヤンゴン着	ヤンゴン
12月13日	水	大使館表敬、JICA 事務所訪問 FD, DZGD, PSD 表敬、協議	〃
12月14日	木	農業灌漑省、UNDP, FAO, CFDTC 表敬・協議	〃
12月15日	金	移動(→マンダレー), FD, DZGD 表敬・協議 現地調査(マンダレー～メッテイ-ラ周辺調査)	メッテイ-ラ
12月16日	土	〃(プウインピエ、ヤメッテイ-ラ～ホパ山周辺調査)	ポパ
12月17日	日	〃(チャウパタン～ニャンウー周辺調査) FD、DZGD 打ち合わせ	ニャンウー
12月18日	月	〃(無償植林サイト周辺調査)	〃
12月19日	火	〃(OISCA プロジェクトサイト視察)	〃

12月20日	水	移動（→ヤンゴン）、PCM実施（林業省）	ヤンゴン
12月21日	木	PCM実施、林業省協議	〃
12月22日	金	林業省協議、大使館、JICA報告 帰国（ヤンゴン→バンコク）	バンコク
12月23日	土	帰国（→成田）	

2-3 調査概要

(1)ミャンマー中央乾燥地においては、土地利用区分上の林地においても森林の減少・劣化が進行しており、実際に立木が存在しない箇所も多い。森林が消滅した土地に於いては、土壌の劣化が進行している。

(2)林業省（Ministry of Forestry）は、1997年に森林局（Forest Department, FD）から乾燥地緑化局（Dry Zone Greening Department）を分離・独立させ、同局に中央乾燥地における直営の森林造成と保全を行わしめている。この森林造成を促進するため、我が国に対し植林無償の要請が出され、2001年7月に予備調査団が派遣されている。

(3)森林局と住民との関係は、適切な森林管理のために森林局が住民を取り締まり、または、動員するというものであり、森林局から住民へのトップダウンの関係が定着している。ミャンマーに於いては土地に生育している樹木は原則として全て国家（森林局）の管理下に置かれることから、植林や森林保全は住民の利益に直結しない。これらのことから、森林局と住民の関係は必ずしも良好とは言えない状態にある。

(4)森林の管理を限定的に住民に委ねる方策として、1995年に共有林令（Community Forestry Instructions, CFI）が森林局より公布され、住民グループ（users' group）は申請・承認に基づき林地を30年間共有林として使用できることとなった。しかしながら、同規則に基づく共有林設置の実績は乏しく、住民による森林管理が浸透しているとは言えない状況である。

(5)森林局による普及活動はこれまでのところ低い実績に留まっている。現場レベルの森林局スタッフにおいて、普及活動は本来業務として位置づけられておらず、違法伐採取り締まりや直営造林等の業務に多忙であり、普及に対するモチベーションが働いていない。さらに、前述の通り森林局のスタッフにはトップダウンのメンタリティーが依然として強く残っており、住民による森林管理といった発想に乏

しく、「普及＝啓蒙」との理解が一般的である。

(6)中央乾燥地における住民のニーズは、水、道路整備、病院、学校などが上位を占めており、森林関連のニーズは低い優先度となっている。中央乾燥地の厳しい自然環境、社会経済環境に鑑み、森林だけを対象とする協力は住民への裨益が低いと思われるところであり、UNDP 等のドナ-と同様にマルチ・セクトラル・アプローチを取る必要があると思われる。しかしながら、森林局長はこうした考え方に否定的な考え方を示している。

2-4 団長所感

(1)今回の要請は、森林局職員に対する研修活動を通じて普及活動を促進することが骨子となっているが、以上のような状況に鑑み、以下の点を確認しつつプロジェクト形成を行う必要がある。

- ①森林局職員の普及業務への従事可能性
- ②普及の目的の明確化（CFIに基づく参加型森林管理の促進）
- ③マルチ・セクトラル・アプローチの適用可能性

(2)上記(1)が確認されれば、要請書の基本ラインである「森林局職員に対する研修を通じた社会林業普及活動の促進」は協力シナリオとして妥当であると考えられる。しかしながら、森林局職員には参加型森林管理に対する理解と経験が絶対的に不足しており、まずは研修指導者の育成から始める必要がある。その際、実践的に参加型森林管理を行いつつ、OJT 方式で指導者を養成することが重要であると考えられる。研修生についても、普及のあり方についての意識改革が必要であり、理論と実践を伴ったカリキュラムの設置が必要となる。

(3)プロジェクトの実施に際しては、参加型森林管理の実践に取り組む必要があるが、その対象林分としてこれまでに日本の NGO（読売財団、JIFPRO）が造成してきた森林や植林無償により今後造成される森林を加えることにより、我が国協力の相互連携が可能となると考えられるため、実現に向けて関係機関との調整を計ることとしたい。

(4)本件に係る特別の留意事項として、ILO による対ミャンマー制裁勧告決議の理由とされた強制労働の問題がある。森林局は、直営の植林活動に無報酬で住民を動員する形態を現在も取っており、これが強制労働と見なされる可能性はある。本件協力において普及の目的を「参加型森林管理の促進」とした場合、住民の自

発性に基づくことが重要であり、森林局の職員がこれまでの慣行に流されて動員に近い形態を取ることがないように、意識の徹底を計る必要がある。

3. 第2回短期調査

3-1 派遣期間及び構成

平成13年6月17日（日）～6月30日（土）

担当分野	氏名	所属・役職
団長・総括	齋藤 克郎	国際協力事業団森林・自然環境協力部 森林環境協力課 課長
協力政策	清水 俊二	外務省経済協力局技術協力課 課長補佐
訓練計画	佐藤 隆幸	農林水産省林野庁国有林部情報管理室 課長補佐
協力計画	甲賀 大吾	国際協力事業団森林・自然環境協力部 森林環境協力課 職員
乾燥地造林	田邊 眞次	社団法人日本林業技術協会国際事業部 参事
計画分析	阪本 日出雄	株式会社パデコ シニアコンサルタント

3-2 調査日程

日付		活動内容	宿泊
6月17日	日	出発-ヤンゴン着	ヤンゴン
6月18日	月	JICA事務所訪問、大使館表敬 森林局表敬・協議	〃
6月19日	火	森林局にて協議 FAO Dry Zone Project オフィスにて協議	〃
6月20日	水	移動（→マンダレー） 乾燥地緑化局表敬・協議 森林局パテインジ(Patheingyi)タウンシップオフィスにてヒアリング、サブセンター候補地（マンダレー）視察 森林局マンダレーディビジョンオフィスにてヒアリング	マンダレー
6月21日	木	練炭製造工場視察 野生生物公園視察 （森林局、乾燥地緑化局ナトジ（Natogyi）タウンシップ職員にヒアリング） ナトジタウンシップ内共有林視察・ヒアリング 森林局ポパ山公園オフィスにてヒアリング	ポパ

6月22日	金	FAO プロジェクト現地オフィスにてヒアリング 森林局・乾燥地緑化局チャオパダタウンシップ職員に ヒアリング 読売植林プロジェクトサイトにてヒアリング・視察	ニャンウー
6月23日	土	森林局・乾燥地緑化局ニャンウーディストリクトオフィ スにてヒアリング サブセンター候補地（ニャンウー）、乾燥地緑化局苗畑 視察 移動（→ヤンゴン）	ヤンゴン
6月24日	日	団内打ち合わせ、資料作成	〃
6月25日	月	ミャンマー農業公社にてヒアリング 森林局にてミニッツ協議、視察	〃
6月26日	火	森林局にてミニッツ案協議	〃
6月27日	水	森林局にてミニッツ案協議	〃
6月28日	木	ミニッツ署名	〃
6月29日	金	JICA 事務所報告 大使館報告 帰国（ヤンゴン→バンコク）	
6月30日	土	成田着	

3-3 調査・協議の主な内容

(1)プロジェクト名称

本件名称には“Central Dry Zone Greening Project”（中央乾燥地緑化計画）を用いていたが、無償資金協力の“the Project for Afforestation in Central Dry Zone”と判別がつきにくいことから、よりプロジェクト内容を反映した“Community Forestry Training and Extension Project in Dry Zone”（乾燥地共有林研修・普及計画）と変更する。

(2)プロジェクト基本方針

森林局が実施機関となり、共有林令（Community Forestry Instructions; CFI）を実現・促進するために、同局の普及担当職員を対象として住民参加型林業の普及に関する研修を行う。研修には、研修生の所属先である各タウンシップ事務所管内での普及実習を組み込むこととし、オンザジョブトレーニングとして実際に共有林の立ち上げを体験させることとする。

(3)研修内容・対象者について

以下の3種類の研修を行うこととする。

ア. 森林局タウンシップ事務所の普及担当職員対象の研修

森林局タウンシップ事務所の普及担当職員ないし、普及活動を行うことが期待

される者を対象に、CFDTCにて座学を行い、さらに現場において実際の共有林立ち上げを行う。

イ. 上記職員の指導・管理職対象の研修

上記研修に普及担当職員が参加する森林局タウンシップ事務所の長、ないし当該タウンシップの位置する森林局ディストリクト事務所の長を対象とし、普及担当職員に対する普及業務に係る指導・支援についての研修を行う。

ウ. 住民に対する研修

普及担当職員による普及実践活動に連動して、対象村落の住民に対する共有林令についての研修をサブセンターにおいて実施する。

(4)サブセンターの設置について

今回調査において、現地調査の普及拠点として、また住民及び普及担当職員の訓練施設としてのCFDTCサブセンター設置の必要性が認識された。

サブセンター設置候補地として、前回調査でチャオパダン、今回調査でマンダレー及びニャンウーを視察したが、マンダレー管区のパティンジタウンシップ森林局事務所敷地内が設置場所として適当と判断した。選定の理由は以下のとおり。

ア. 森林局マンダレー管区事務所から近く（車で約10分）、森林局の行政ラインとの連携・調整が容易である

イ. マンダレーが乾燥地の中心的な位置をしめ、ヤンゴンからのアクセスがよい

ウ. 道路、電気、水道などの整備状況がよい

エ. 十分な広さの平坦な土地が確保できる

(5)無償資金協力「中央乾燥地緑化計画」との連携可能性について

新たに植林された地域が乾燥地緑化局から森林局に移管されるまで5年間の管理期間を要することから、本プロジェクトの協力期間内に連携することは難しいと判断していたが、森林局・乾燥地緑化局ともに、同管理期間は柔軟に変更することが可能であり、住民がしっかりと管理できることが確認されれば植林後すぐにでも移管し、共有林として承認することができるとのことであった。

従って無償において住民への移管を前提とした多目的林の造成が行われる場合には、対象地域であるニャンウーのディストリクト、およびタウンシップの乾燥地緑化局職員を優先的に本プロジェクトの研修に参加させるなどの連携を行っていきたい。

(6) 関連セクターとの連携について

実際に多くの社会林業グループの結成に成功している FAO の農村開発プロジェクトでは、一般農民の農業生産性向上、女性グループの収入向上、土地無し農民の牧畜による収入向上など、住民の関心事に関連する分野とターゲットグループをうまく使い分けて農民の組織化に成功しており、社会林業グループ結成も農村総合計画の一部という位置付けである。

本件プロジェクトでは、CFDTC がアグロフォレストリ-に関する研修ならびに配布用パンフレットなどの作成を行っており、また、森林研究所 (Forest Research Institute) 等直接の関連組織との連携も予定している。さらに、FAO, ミャンマー農業公社 (MAS), 畜産水産省などから、研修講師の派遣などの連携を図ることが有効と思われる。

しかしながら、現時点において林業省はかかる組織との連携には消極的である。

(7) 対象地域の治安状況について

本プロジェクトが対象とする乾燥地 (Dry Zone) は、マンダレー、マグウェイ、ザガインの3つの管区にまたがる。今回調査において、乾燥地内には治安が悪く、専門家に危険が及ぶ可能性がある地域はないことを確認した。特に治安が心配された同管区内のインド国境に接している地域は乾燥地ではなく、本プロジェクトの対象地域には該当しないとのことであった。

(8) 普及担当職員の定着について

共有林令に基づいた参加型林業が広く普及していくためには、研修に参加した普及担当職員が研修修了後も所属タウンシップ内で普及活動に従事し、組織内に普及活動のノウハウを蓄積させていくことが不可欠である。そのため、研修に参加した普及担当職員は参加後少なくとも2年程度は異動することなく普及活動を行うようミャンマー側に要請し、基本的に了承を得た。

4. 実施協議調査

4-1 派遣期間及び構成

担当分野	氏名	現職
団長・総括	本山芳裕	農林水産省林野庁森林技術総合研修所所長
協力計画	甲賀大吾	国際協力事業団 森林・自然環境協力部 森林環境協力課 職員

4-2 調査日程

2001年10月21日（日）～26日（金）（6日間）

日付		調査内容	宿泊先
10月21日	日	移動（成田→バンコク→ヤンゴン）	ヤンゴン
10月22日	月	JICA事務所訪問、林業省森林局協議（R/D及びM/Mに関する協議）	〃
10月23日	火	森林局協議（プロドク及びその他の確認事項について協議）	〃
10月24日	水	森林局協議（M/M修文案についての確認）	〃
10月25日	木	R/D署名、ミニッツ署名、 JICA事務所、大使館報告 移動（ヤンゴン→バンコク）	バンコク
10月26日	金	移動（バンコク→成田）	

4-3 調査・協議の主な内容

(1) R/D、プロジェクト・ドキュメントについて

林業省森林局との協議を概ね円滑に進め、R/D及びM/M（プロジェクト・ドキュメント（P/D）及びプロジェクト実施に当たっての細部事項）の署名・交換を先方森林局長との間で了した。

(2) 専門家派遣手続きについて

長期専門家の派遣に関し、日側・ミ側双方は以下の流れに沿って、手続きの促進に努力することを確認した。

- ①ミ側はA1フォームを2001年11月5日までに在ミ国日本大使館宛提出すること。
- ②A1フォームの提出があり次第、在ミ国日本大使館はB1フォームをただちにミ側に提出すること。
- ③ミ側は受入確認を2001年12月5日までに在ミ国日本大使館宛提出すること。

(3) 機材要請について

R/D ANNEX III リスト記載の機材要請に関し、日側・ミ側双方は手続きの促進に努力することを確認した。

両国側は、ミ側が本計画期間の5年間分の機材を包括したA4フォームを、2001年11月5日までに在ミ国日本大使館宛提出する必要があることを確認した。

(4) 乾燥地緑化局職員の研修参加について

本計画の主要な研修対象は森林局職員であり、乾燥地緑化局の職員の研修参加については、以下の条件を満たした場合に限ることとした。

- ①参加する職員は CFDTC での研修および、所属先タウンシップ内での実地研修の両方を必ず受講すること。
- ②乾燥地緑化局が研修を修了した職員に対し、共有林普及活動に従事するよう明確な指示を出すこと。

ただし、無償資金協力「中央乾燥地植林計画」対象予定地域の乾燥地緑化局ニャンウータウンシップ事務所員については、本プロ技協の研修に積極的に参加させることを合わせて確認した。

(5)研修旅費負担

CFDTC およびサブセンターで実施される研修に関し、研修生および外部研修講師の旅費を中堅技術者対策費として日本側が一部負担する。また、研修生の実地研修については森林局の負担とする。

(6)CFDTC サブセンター

ミ側および日側双方は CFDTC サブセンター建設に係る基本的な考え方について、以下の通り了解した。

ア. 基本構造および仕様

[基本構造]平屋建て

[仕様]

- | | |
|--------------------------|------------|
| ・大研修室（30名分） | ・食堂・キッチン |
| ・小研修室（15名分） | ・洗面所、シャワ-室 |
| ・オフィス | ・倉庫 |
| ・宿舎（研修員用：25床、
講師用：5床） | ・駐車スペース |

イ. 設計・積算

森林局はサブセンター設置に必要な基本設計および積算に係る資料を作成し、JICA 側での検討のため、結果を JICA ミャンマー事務所に提出する。JICA 側、および日本人専門家を含むプロジェクト関係者の意見を踏まえ、森林局は詳細設計と最終的な積算を行う。

ウ. 建設費用負担について

JICA は CFDTC サブセンターに係る建設費用を負担する。基本設計、詳細設計、

積算に係る経費はミャンマー側の負担とする。

(7)巡回指導チーム

普及実習の一環として共有林普及活動を行う普及担当職員に対し、必要な補助を行う巡回指導チームに関し、森林局がCFDTC、森林局、その他組織から適切な人数と技術を有した人員を巡回指導チームとして配置すること、および巡回指導チームの拠点をCFDTCサブセンターとすることを確認した。なお、巡回指導チームの業務スケジュールについては、各タウンシップにおける普及実習に基づいて決定する。

(8)農業セクターとの連携

普及担当職員にとって農民の生活状況、特に生計の中心を担う農業生産の方法を把握することは非常に重要であるという認識に基づき、森林局がミャンマー農業公社、農業灌漑省、UNDPプロジェクトなど、農業セクターおよびその他関連分野の専門家を研修講師として招聘するために必要な調整を行っていくことを確認した。

5. 主要面談者（敬称略）

氏名	所属	役職
U Soe Tint	Planning Department, Ministry of Forestry	Director General
U Hla Htwe	〃	Director
U Kyaw Win	〃	Deputy Director
Dr. Kyaw Tint	Forest Department (FD), Ministry of Forestry	Director General
U Shwe Kyaw	〃	〃
U Kyi Maung	Planning Division, FD	Director
U Saw Eh Dah	Training & Research Development Division, FD	〃
U Saw Win	〃	Assistant Director
U Maung Maung Pyoe	〃	Staff Officer
U Tin Latt	FD	Director
U Kyaw Nyunt Lwin,	Extension Division, Forest Department	Director
U Ye Tint	Administration Division, FD	〃
U Aung Tin	Budget Division, FD	〃
U Kyaw Khin	Inspection Division, FD	〃
U Chit Hlaing	Watershed Division, FD	〃
U Oo Gar	FD	Staff Officer
U Soe Hla	CFDTC	Principal

U Win Hlaing	〃	Deputy Principle
U Soe Naing	〃	Staff Officer
U Than Htay	〃	〃
U Ohn Lwin	〃	〃
U Min Aung Min	〃	〃
Lt. Col. Kyaw Khin	Mandalay Division, FD	Director
U Khin Maung Oo	〃	〃
U Tin Aung	〃	Assistant Director
U Tint Swe	〃	Staff Officer
U Zaw Win	Kyaukse District Office, FD	Assistant Director
U Zaw Win	Nyaung Oo Township Office, FD	Officer
U Maung Maung Htwe	Planning & Statistics Division, DZGD	Director
U Kyi Han	Administration Division, DZGD	Director
U Thiri Tin	DZGD	Deputy Director
U Tin Aye	〃	〃
U Tin Hawe	〃	〃
U Myuit Gwe	〃	Director
U Tun Myint	〃	Assistant Director
U Min Ko	〃	Staff Officer
U Tin Htut Oo	Dept. of Agricultural Planning, Ministry of Agriculture and Irrigation	Acting Director General, Dept. of Agricultural Planning
U Kyi Win	〃	Deputy Director General
Dr. Nyi Nyi	Myanmar Agricultural Service (MAS)	General Manager
Dr. Tin Hla	Planning Division, MAS	〃
U Maung Maung Yi	〃	Manager
U Aye Tun	Landuse Division, MAS	〃
Dr. Than Daing	Livestock Breeding & Veterinary Department, Ministry of Livestock & Fisheries	Deputy Director
PhD David G. Kahan	FAO Environmental Sustainable Food Security and Micro-income Opportunities in the Dry Zone	Agency Project Manager
U Htay Win	〃	Deputy National Project Director
小井沼 紀芳	在ミャンマー日本大使館	公使
古川 和弘	〃	二等書記官
青木 利道	JICA ミャンマー事務所	所長
小塚 英二	〃	所員

付 属 資 料

資料1 討議議事録 (R/D)

資料2 実施協議調査協議議事録 (プロジェクトドキュメント M/M)

資料3 第2回短期調査協議議事録 (M/M)

資料4 事業事前評価表

資料5 分野別報告

(1) 社会林業分野

(2) 乾燥地造林分野

(3) 村落生産活動分野

(4) 計画分析／社会調査分野

1. 討議議事録(R/D)


RECORD OF DISCUSSIONS BETWEEN
THE PROJECT DESIGN TEAM
AND AUTHORITIES CONCERNED OF
THE UNION OF MYANMAR
ON JAPANESE TECHNICAL COOPERATION FOR
COMMUNITY FORESTRY TRAINING AND EXTENSION PROJECT
IN DRY ZONE
IN THE UNION OF MYANMAR

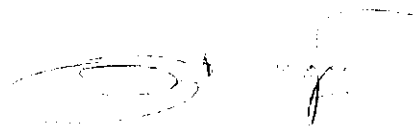
The Japanese Project Design Team (hereinafter referred to as “the Team”) organized by Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Yoshihiro MOTOYAMA, Director General, Forest Training Institute, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries visited the Union of Myanmar from October 21, 2001 to October 26, 2001 for the purpose of working out the details of the technical cooperation program concerning the Community Forestry Training and Extension Project in Dry Zone in the Union of Myanmar.

During its stay in the Union of Myanmar, the Team exchanged views and had a series of discussions with the Myanmar authorities concerned with respect to desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Myanmar authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Yangon, October 25, 2001


Yoshihiro MOTOYAMA
Team Leader,
Project Design Team,
Japan International Cooperation Agency (JICA)
Japan


U Shwe Kyaw
Director General,
Forest Department,
Ministry of Forestry,
The Union of Myanmar

ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of the Union of Myanmar will implement the Community Forestry Training and Extension Project in Dry Zone (hereinafter referred to as "the Project") in cooperation with the Government of Japan.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY THE GOVERNMENT OF JAPAN

In accordance with the laws and regulations in force in Japan, the Government of Japan will take, at its own expense, the following measures through Japan International Cooperation Agency (hereinafter referred to as "JICA") according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

1. DISPATCH OF JAPANESE EXPERTS

The Government of Japan will provide the services of the Japanese experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT

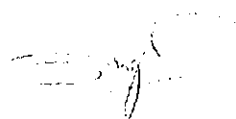
The Government of Japan will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The Equipment will become the property of the Government of the Union of Myanmar upon being delivered C.I.F. (cost, insurance and freight) to the Myanmar authorities concerned at the ports and/or airports of disembarkation.

3. TRAINING OF MYANMAR PERSONNEL IN JAPAN

The Government of Japan will receive the Myanmar personnel connected with the Project for technical training in Japan.

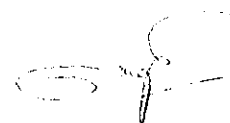
4. SPECIAL MEASURES

To ensure the smooth implementation of the Project, the Government of Japan will take, in accordance with the laws and regulations in force in Japan, special measures through JICA for the purpose of supplementing a portion of the local cost expenditures necessary for the execution of the improvement works of training facilities and middle level trainees training programme.



III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE UNION OF MYANMAR

1. The Government of the Union of Myanmar will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. The Government of the Union of Myanmar will ensure that the technologies and knowledge acquired by the Myanmar nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Union of Myanmar.
3. The Government of the Union of Myanmar will grant in the Union of Myanmar privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families, which are no less favorable than those accorded to experts of third countries working in the Union of Myanmar under the Colombo Plan Technical Cooperation Scheme.
4. The Government of the Union of Myanmar will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.
5. The Government of the Union of Myanmar will take necessary measures to ensure that the knowledge and experience acquired by the Myanmar personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the laws and regulations in force in the Union of Myanmar, the Government of the Union of Myanmar will take necessary measures to provide at its own expense:
 - (1) Services of the Myanmar counterpart personnel and administrative personnel as listed in Annex IV;
 - (2) Land, buildings and facilities as listed in Annex V;
 - (3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above;
 - (4) Means of transport and travel allowances for the Japanese experts for official travel within the Union of Myanmar; and
 - (5) Suitably furnished accommodation for the Japanese experts and their families.



7. In accordance with the laws and regulations in force in the Union of Myanmar, the Government of the Union of Myanmar will take necessary measures to meet:

- (1) Expenses necessary for transportation within the Union of Myanmar of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;
- (2) Custom duties, internal taxes and any other charges imposed in the Union of Myanmar on the Equipment referred to in II-2 above; and
- (3) Running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. Director General of Forest Department, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.

2. Director of Training and Research Development Division, Forest Department, as the Deputy Project Director, will be responsible for the managerial and technical matters of the Project.

3. The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Director and the Deputy Project Director on any matters pertaining to the implementation of the Project.

4. The Japanese experts will give necessary technical guidance and advice to the Myanmar counterpart personnel on technical matters pertaining to the implementation of the Project.

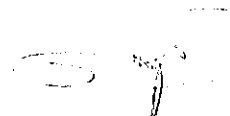
5. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex VI.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by the two Governments through JICA and the Myanmar authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Union of Myanmar undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Union of Myanmar except for those arising from the willful misconduct or gross negligence of the Japanese experts.



VII. MUTUAL CONSULTATION


There will be mutual consultation between the two Governments on any major issues arising from, or in connection with, this Attached Document.

VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

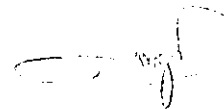
For the purpose of promoting support for the Project among the people of the Union of Myanmar, the Government of the Union of Myanmar will take appropriate measures to make the Project widely known to the people of the Union of Myanmar.

IX. TERM OF COOPERATION

The duration of technical cooperation for the Project under this Attached Document will be 5 years from December 15, 2001.



ANNEX I	MASTER PLAN
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	LIST OF MYANMAR COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF LAND, BUILDINGS AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE



ANNEX I Master Plan

1. Overall Goal

Forest Department (FD) promotes participatory forest management in Dry Zone based on the Community Forestry Instructions (CFI) so that people with spontaneous participation are able to enjoy benefit from the Community Forests.

2. Project purpose

All FD Township Offices in Dry Zone acquire practical capacity to promote participatory forest management based on the CFI.

3. Project Outputs

- (1) An extension plan for promotion of participatory forest management in Dry Zone based on the CFI is prepared.
- (2) Extension staff understand the importance of participatory forestry management and acquire necessary skill and knowledge for extension through training.
- (3) Extension of participatory forest management is practiced in villages in Dry Zone as a part of extension staff training.

4. Activities of the Project

- 1-1) To study the current extension system
- 1-2) To identify appropriate extension procedures and methods
- 1-3) To work out a desirable institutional set-up for extension
- 1-4) To identify geographical priority areas for extension
- 1-5) To identify required skills and qualification of an extension staff
- 1-6) To formulate a training plan.

- 2-1) To train trainers, lecturers, and instructors
- 2-2) To formulate training curriculums
- 2-3) To develop training materials including an extension manual
- 2-4) To conduct training courses for the following categories of personnel
 - Extension staff at FD Township Offices
 - Managers / Supervisors of extension staff
- 2-5) To conduct evaluation of training courses

- 3-1) To prepare manuals for villagers on CFI
- 3-2) To instruct and assist extension staff who are engaged in extension practices at following stages
 - Preparation of action plan for extension practices
 - Identification of possible target villages
 - Explanation on CFI to villagers and inquiry of their willingness to establish Community Forests



- Provision of assistance to villagers in identifying appropriate site for *Community Forests*
 - Provision of assistance to villagers in organizing users' groups
 - Provision of assistance to villagers in applying for *Community Forest establishment*
 - Provision of seed and Seedling to villagers
 - Technical guidance in the field to villagers
- 3-3) To conduct follow-up training for extension staff
- 3-4) To conduct seminars for villagers on CFI and necessary forestry technique
- 3-5) To conduct evaluation of extension practices
- 3-6) To conduct evaluation of performance of users' groups and their community forests.
- 3-7) To review the extension plan based on the experiences of extension practices

Note: In case in which the Master Plan should be changed due to the situation of the Project, both Governments will agree to and confirm the changes by exchanging a Minutes of Meeting.

ANNEX II LIST OF JAPANESE EXPERTS

Chief Advisor

Coordinator

Long-term experts in the following technical fields;

Extension Planning

Training

Community Forestry Extension

Note: The Chief Advisor may serve concurrently as one of these experts.

Short-term experts in related fields will be dispatched as necessary for smooth implementation of the Project

ANNEX III LIST OF MACHINERY AND EQUIPMENT

1. Equipment for:

Training

Field extension

2. Vehicles

3. Other necessary equipment for the implementation of the Project

ANNEX IV LIST OF MYANMAR COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Project Director: Director General of FD

2. Deputy Project Director: Director of Training and Research Development Division, FD

3. Counterparts

1) Training and Research Development Division, FD

- Manager for extension planning
- Staff for extension planning

2) Central Forestry Development Training Centre (CFDTC)

- Manager for training planning and coordination
- Staff for training planning and coordination
- Staff for curriculum development
- Staff for training material development
- Staff for training administration
- Lecturers
- Instructors

3) CFDTC Sub-Centre

- Manager for CFI extension practice
- Technical Supervisor for field extension practice
- Staff for field extension practice

4. Administrative personnel

- Administration staff
- Secretaries
- Drivers
- Other necessary supporting staff

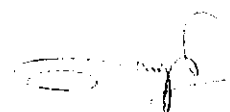
ANNEX V LIST OF LAND, BUILDINGS, AND FACILITIES

1. Land for;

- (1) Central Forestry Development Training Centre (CFDTC)
- (2) CFDTC Sub-Centre

2. Buildings and facilities for;

- (1) Project office at CFDTC
- (2) Training facilities at CFDTC
- (3) Administration facilities at CFDTC
- (4) Project office in FD
- (5) Project field office at CFDTC Sub-Centre
- (6) Training facilities at CFDTC Sub-Centre



ANNEX VI JOINT COORDINATING COMMITTEE

1. Function

The Joint Coordinating Committee will meet at least once a year or whenever necessity arises, and work:

- (1) To approve the Annual Plan of Operation formulated by the Project in accordance with the Record of Discussions;
- (2) To review the overall progress of the technical cooperation program and activities carried out under the above-mentioned Annual Plan of Operation in particular; and
- (3) To review and exchange views on major issues arising from or concerning the technical cooperation program.

2. Composition

(1) Chairperson: Director General, Forest Department(FD), Ministry of Forestry

(2) Vice Chairperson: Deputy Director General, FD

(3) Myanmar side

- 1) Director, Administration Division, FD
- 2) Director, Planning and Statistics Division, FD
- 3) Director, Training and Research Development Division, FD
- 4) Director, Extension Division, FD
- 5) Director, Budget and Account Division, FD
- 6) Representative, Dry Zone Greening Department, Ministry of Forestry
- 7) Representative, Planning and Statistics Department, Ministry of Forestry
- 8) Representative, Forest Research Institute
- 9) Representative, Institute of Forestry
- 10) Representative, Myanmar Timber Enterprise
- 11) Secretary: Principal, Central Forestry Development Training Centre

(4) Japanese side

- 1) Chief Advisor
- 2) Coordinator
- 3) Experts appointed by the Chief Advisor
- 4) Representative, JICA Myanmar Office
- 5) Personnel concerned to be dispatched by JICA, if necessary

Note: Official(s) of the Embassy of Japan may attend the Joint Coordinating Committee meeting as observer(s). Chairperson can request the attendance of Myanmar official(s) if necessary.



2. 実施協議調査協議議事録(プロジェクト・ドキュメント M/M)

MINUTES OF MEETING
BETWEEN THE PROJECT DESIGN TEAM
OF THE GOVERNMENT OF JAPAN
AND AUTHORITIES CONCERNED OF
THE UNION OF MYANMAR
ON JAPANESE TECHNICAL COOPERATION FOR
COMMUNITY FORESTRY TRAINING AND EXTENSION PROJECT
IN DRY ZONE
IN THE UNION OF MYANMAR

The Project Design Team of the Government of Japan (hereinafter referred to as "the Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Yoshihiro MOTOYAMA, Director General, Forest Training Institute, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries, was dispatched to the Union of Myanmar from October 21 to October 26, 2001 for the purpose of working out the details of the technical cooperation programme concerning the Community Forestry Training and Extension Project in Dry Zone (hereinafter referred to as "the Project"). The Team and the authorities concerned of the Union of Myanmar have agreed to recommend to their respective Governments the matters referred to in the Record of Discussions (hereinafter referred to as "the R/D") signed on October 25, 2001.

As a result of the meetings, both sides reached common understanding concerning the details of the Project as contained in the Project Document and the matters referred to in the attachment. The Project Document will be revised or altered when deemed necessary after monitoring of the implementation by Joint Coordinating Committee.

Yangon, October 25, 2001



Yoshihiro MOTOYAMA
Team Leader,
Project Design Team,
Japan International Cooperation Agency (JICA)
Japan



U Shwe Kyaw
Director General,
Forest Department,
Ministry of Forestry,
The Union of Myanmar

ATTACHMENT

1. Project Document

See ANNEX

2. Steps to be taken before dispatching Japanese Experts

Concerning dispatch of Japanese long-term experts as listed in ANNEX II of the R/D, both Japanese and Myanmar sides will promote the procedures with the earnest efforts.

Both sides have understood that the project should be started on 15 December 2001 as mentioned in the R/D and have confirmed the necessity to take steps as follows.

(1) Application forms (Form A1) for the services of long-term experts as listed in the R/D should be submitted to the Embassy of Japan not later than 5th November 2001.

(2) Upon receipt of the Form A1, the Embassy of Japan will submit forms nominating candidates of the long-term experts (Form B1) to Myanmar side immediately.

(3) A letter of agreement on acceptance of the experts should be submitted to the Embassy of Japan not later than 5th December 2001.

3. Application for Machinery and Equipment

Concerning application for machinery and equipment as listed in ANNEX III of the R/D, both Japanese and Myanmar sides will promote the procedures with the earnest efforts.

Both sides have confirmed the necessity to submit the application form for equipment (Form A4) for 5 years of the Project to the Embassy of Japan not later than 5th November 2001.

4. Participation of the DZGD staff to training course of the Project

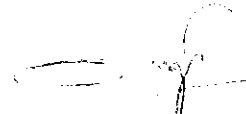
Primary target group of the Project is FD's extension staff in Township offices in Dry Zone.

Staff of DZGD could attend the course only when the following conditions are satisfied, and the number of trainees from DZGD should be determined by the Project considering the capacity into account.

(1) Participants from DZGD should complete the whole training programme consists of collective training at CFDTC and extension practice in the field in respective Townships.

(2) DZGD should make clear instruction to its training participants that they are to be engaged in CFI extension works after completion of the whole training programme.

Despite the above mentioned understanding, staffs of DZGD's Nyaung-Oo Township Office, who will be assigned to the Project for Afforestation in Dry Zone in the Union of Myanmar under Japanese Grant Aid programme, are encouraged to participate in the community forestry extension



training course of the Project.

5. Travel allowance concerned with training course

JICA will bear travel allowance of trainees and external lecturers/instructors for training courses at CFDTC and CFDTC Sub-Centre under middle level technician training programme. Forest Department will bear allowances for all the other travel occasions such as extension practices by the trainees.

6. CFDTC Sub-Centre

Both Myanmar and Japanese sides reached agreement on a basic idea concerning CFDTC Sub-Centre as follows.

(1) Basic Structure and Lay Out

[Basic Structure] One-storied

[Location] Compound of Patheingyi Township, Mandalay District, Mandalay Division

[Facilities]

- A large training room (for 30 participants);
- A small training room (for 15 participants);
- An office (space for clerical work, and space for training material preparation);
- A dormitory (25 beds for participants and 5 beds for instructors);
- A dining room and a kitchen;
- Rest rooms and shower rooms;
- A storehouse;
- A garage;

(2) Design and cost estimation

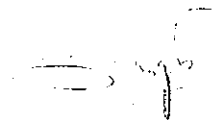
FD should conduct basic designing and initial cost estimation of CFDTC Sub-Centre. Result of the basic design and the cost estimation should be submitted to JICA Myanmar Office for its consideration and comments. Based on the comments from JICA as well as Project staff including Japanese long-term experts, FD will prepare detailed design and final cost estimation.

(3) Building Cost

JICA will bear the cost of building CFDTC Sub-Centre. Myanmar side will cover the expense of designing and cost estimations.

(4) Steps to be taken to start building

- 1) FD submits a basic design and an initial cost estimation to JICA Myanmar office by the end of November 2001.



- 2) JICA considers the design and the estimation and gives a comment to FD in the beginning of December.
- 3) Taking Project staff's comments into account, FD will conduct detail design and final cost estimation and submit application for building budget to JICA Myanmar office by the end of January 2002.
- 4) JICA HDQ will approve the application and send the necessary budget to JICA Myanmar Office. Then JICA Myanmar office will make a contract with the contractor and start construction by March 2002.

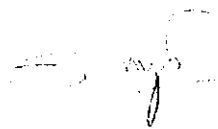
7. Instructors' Team

The instructors team is responsible for giving advice and necessary assistance to the extension staff who are engaged in the extension practices in their own Townships. According to the progress of the Project activities and its requirements, FD will provide adequate number of qualified personnel from CFDTC, FD, and other organizations as required for the Instructors' Team. CFDTC Sub-Centre shall be the base of the Team. The working schedule of the Instructors' Team shall be determined based on the schedule of extension practice in the Townships.

8. Collaboration with agriculture sector

It is very important for extension staff to grasp living conditions of farmers, especially the agricultural production system, which is the primary livelihood for them. FD will make necessary arrangements to invite lecturers from agriculture sector and other necessary fields, such as Myanmar Agriculture Service (MAS), Ministry of Agriculture and Irrigation or UNDP project concerned.



A handwritten signature in black ink, appearing to be 'Y. S. C.' or similar, written in a cursive style.A handwritten signature in black ink, appearing to be 'S. S. C.' or similar, written in a cursive style.

Forest Department, Ministry of Forestry, The Union of Myanmar
Japan International Cooperation Agency (JICA)

Community Forestry Training and Extension Project
in
Dry Zone
in
The Union of Myanmar

PROJECT DOCUMENT

25th October 2001



Table of Contents

Table of Contents	i
1 INTRODUCTION	1
2 BACKGROUND OF THE PROJECT	2
2.1 General Conditions of the Nation and Dry Zone.....	2
2.2 Current Situation of the Target Sector	3
2.3 Policies of Myanmar	4
2.3.1 Policies for Forestry	4
2.3.2 Policies for Agriculture.....	8
2.4 Prior or Ongoing Efforts	9
2.4.1 Projects by Myanmar Government	9
2.4.2 Aftercare Program for the Central Forestry Development Training Center Project.....	11
2.4.3 Project by International or Other Agencies.....	12
3 PROBLEMS TO BE ADDRESSED AND THEIR CURRENT SITUATION	14
3.1 Institutional Framework for the Project Issues.....	14
3.2 Problems to be addressed: the Current Situation.....	14
4 PROJECT STRATEGY	15
4.1 Project Approach.....	16
4.2 Project Strategy	16
4.3 Special Consideration.....	18
4.3.1 Spontaneous Organization of the users' group of the community forest	18
4.3.2 Gender Issue.....	18
4.3.3 Participation of Landless Farmers.....	18
4.3.4 Mitigation of Land Use Conflict.....	18
4.3.5 Establishment of confidence between Forestry Department and Communities	18
4.4 Collaboration with relevant Institutes and Projects.....	19
5. PROJECT DESIGN	21
5.1 Overall goal.....	21
5.2 Project Purpose.....	21
5.3 Project Outputs and Activities.....	22
5.4 Strategy of Project Implementation.....	24
Stage 1: CFI extension training at CFDTTC	24
Stage 2: CFI extension practices on-site	24
Stage 3: Follow-up workshop and villagers' training course at CFDTTC sub-center	24
Stage 4: Full scale extension work.....	24
5.5 Inputs.....	25
5.5.1 Inputs from Myanmar Side	26
5.5.2 Inputs from Japanese Side.....	27
5.6 Pre-conditions and Important Assumptions	28
5.6.1 Pre-conditions	28
5.6.2 Important Assumption and Risk Analysis.....	28

5.7 Implementation System for the Prospective Project	29
6. PROJECT JUSTIFICATION	30
6.1 Impact of the Project	31
6.1.1 Expected Impacts of the project.....	31
6.1.2 Impacts on Natural and Social Environment	35
6.1.3 Contribution to the Overall Goal.....	36
6.2 Effectiveness	36
6.2.1 Appropriateness of the Project Purpose	36
6.2.2 Application of Japanese Technology	36
6.3 Efficiency	37
6.3.1 Appropriate Project Input.....	37
6.3.2 Cost Performance of the Project	37
6.4 Relevance	37
6.4.1 Eligibility of the Project as Public Task.....	37
6.4.2 Relevance to the ODA policy	38
6.4.3 Correspondence of the project purpose to the needs of Myanmar	38
6.4.4 Participatory Planning of the Project	38
6.4.5 Establishment of Project Operation and Management System	39
6.4.6 Establishment of Evaluation and Monitoring System.....	39
6.5 Sustainability	39
6.5.1 Institutional Ability	39
6.5.2 Financial condition of FD	39
6.5.3 Social, Environmental, and Technical Acceptability	39
6.6 Overall Project Justification	40
7. ANNEX	41
7.1 Project Design Matrix (PDM).....	43
7.2 Plan of Operations (tentative).....	45
7.3 TOR of Long-term Experts	46
7.4 TOR of Counterparts.....	48
7.5 Specification of Equipment.....	50
7.6 Commitment from Counterparts Agency	51
7.7 Information on the Relevant or Counterpart Organizations	52
7.7.1 Ministry of Forestry	52
7.7.2 Forest Department (FD).....	53
7.7.3 Central Forestry Developing Training Center (CFDTC).....	58
7.7.4 FD Division Office.....	60
7.7.5 Township Forest Office	61
7.7.6 Dry Zone Greening Department (DZGD).....	62
7.7.7 Myanmar Agriculture Service.....	62
7.8 Joint Coordinating Committee	64
7.9 Information on Forestry and Agriculture in Dry Zone.....	65
7.9.1 Location and Topography of Dry Zone	65
7.9.2 Climate.....	65
7.9.3 Soil Type.....	66
7.9.4 Vegetation	66

7.9.5 Agriculture in Dry Zone.....	67
7.10 Project by International or Other Agencies.....	68
7.10.1 Plantation Establishment by Korean International Cooperation Agency (KOICA)	68
7.10.2 Plantation Establishment Projects in Dry Zone by Japanese NGO's.....	68

1 INTRODUCTION

Dry Zone in the Union of Myanmar is located in 3 divisions; namely Sagaing, Mandalay and Magway and includes 13 districts and 57 townships. It covers 8,720,000 ha of land area, characterized by limited rainfall and high temperature in the hot season. As the area was suitable for agriculture and had significant importance for inland transportation, ancient Kingdoms and civilizations prospered in the past, and as a result, the region is one of the most populated areas in today's Myanmar. One third of the total population in the country lives within Dry Zone. On the other hand, the area has many development constraints such as soil deterioration, decrease of agricultural productivity, and deforestation by cutting for firewood, and poverty. Over-cultivation and over-grazing are accelerating further deforestation and soil deterioration.

The Government of Myanmar designated Dry Zone as a critical area of deforestation, and has been implementing an afforestation project with tree planting and woodlot establishment since 1994. The recovery of forests in the area is one of the most important policies, as well as conservation of Mangrove forests in the country.

Under such circumstances, awareness of the importance of participatory forest development has been increasing remarkably in recent times. In 1995, a new forest policy was introduced. The word "participation" was used in the policy to emphasize the importance of people's positive participation in forest management, as well as the importance of improving the Forest Department's extension system.

The Japanese Government, based on the request for assistance from the Government of Myanmar, extended its cooperation for the implementation of the Central Forestry Development Training Center (CFDTC) Project from 1990 to 1995, and its follow-up program for 2 years from 1995. In addition, due to the increasing demand in the training of extension staff to promote participatory forest management, the Japanese Government conducted an aftercare program for 2 years from 1999 to 2001.

The Government of Myanmar has requested cooperation for the promotion of participatory forest development in Dry Zone through the improvement of extension skills of Forest Department staff. After a series of discussions and surveys, the Forest Department (FD) of Myanmar and the Japan International Cooperation Agency (JICA) agreed to implement the Community Forestry Training and Extension Project in Dry Zone in the Union of Myanmar (hereinafter referred to as "the Project").

This document provides basic information regarding the Project. Plans, ideas, schedules or any contents of this document are subject to change in the course of the implementation of the Project upon mutual consultation and agreement by both parties.

2 BACKGROUND OF THE PROJECT

2.1 General Conditions of the Nation and Dry Zone

Myanmar has mountainous areas in north, east and western parts of its territory. The great Ayeyawady River, with navigable length of 1,450km, as well as its tributaries and other rivers run through the central area to form the fertile delta before it meets the Andaman Sea. The west coast area enjoys abundant rainfall of more than 5,000 mm/year. On the other hand, central Myanmar is called Dry Zone and has as little as 650-1,500 mm rainfall per year⁽¹⁾.

Myanmar renounced the socialism policy that lasted from 1962 until the present Government took power in 1988. The new government concentrated its efforts on economic development. As a result, the country achieved a 7.5% average annual growth rate for four years from 1992. However, since the Asian economic crisis, the economy has not been very successful with less growth in foreign investment and the declining value of the “Kyat”, the national currency. The economic growth rate was 5% (1998/99 provisional), and the increase in prices was 29.7%. Although Myanmar has been a member of ASEAN since 1997, its GDP per capita is as low as \$270. Agriculture comprises 46% of GDP, and accounts for 67% of employment in the country⁽²⁾. Farming products vary from area to area due to diversified natural conditions. They include rice as a main crop, bean, sesame, groundnut, jute, cotton, fruit, tea, coffee and vegetables.

Forestry makes up only 1% of GDP. The country has 2.2 billion m³ of woodland and is rich in forest resources, especially teak wood and other firm wood products, which are highly valued abroad. Wood export accounts for 22% of total exports, and is considered a very important industry in the country. However, 220,000ha of forest, on average, was lost annually from 1975 to 1989.

The Dry Zone or target area of the Project sustains one third of the total population of Myanmar. Agriculture is the main industry in the rural area of Dry Zone, with some small-scale commercial activities. Some industrial manufacturing is also found. Farmers obtain hard cash by selling their agricultural products, labor work, and producing handicraft. Handicrafts include weaving, stove or pot making, straw or bamboo work, papermaking, toy making, silversmith, and goldsmith.

Rice is not a major farming product in Dry Zone other than some exceptional areas along the Ayeyawady River. The rural population spends a significant portion of their household expenditure on food. Table 2.1 shows the percentage expenditures for food and beverages by the

⁽¹⁾ Source: JICA Report “Preparatory Study on the Project for Rehabilitating Afforestation for Coping with Desertification in Dry Zone in the Union of Myanmar” September 2000

⁽²⁾ Review of the Financial, Economic, and Social Conditions for 1998/99

rural population. Farmers in these divisions spend about three quarters of their total expenditure on food and beverages. Landless farmers may have to allocate an even larger proportion for foodstuff. A very high 'Engel's coefficient' implies that severe poverty prevails in the area. Concerning the infrastructure, electric power supply and paved roads cannot be expected in the villages. Women expend much of their energy on collecting firewood and carrying water.

Table 2.1 Household expenditure for food and beverages

	Rural-average	Rural-Sagaing	Rural-Mandalay	Rural-Magway
Total monthly expenditure	13091 kyat	13,328 kyat	12,867 kyat	11,672 kyat
Food and Beverages	72.41%	74.60%	73.69%	75.74%
Rice	21.92%	24.41%	20.97%	24.97%
Monthly Consumption of Rice per person	6.20 Pyi	7.36 Pyi	6.73 Pyi	6.74 Pyi

Note: One Pyi is about 1.9kg

Source: Statistical Yearbook, Central Statistical Organization, Myanmar

Other than poverty, deforestation is also a big issue within the Dry Zone. Forest is very important in terms of soil, and water resource conservation. The decrease in forest leads to erosion, deterioration of soil, less productivity and rural social desolation. Thus, forest conservation is considered to be an issue that requires urgent solution. The Government has been promoting sustainable forest conservation on the basis of the new forest policy established in 1995.

Deforestation causes soil erosion, water shortage, flooding, and scarcity of forest by-products, which may result in low agricultural productivity and re-introduce poverty. Poverty mitigation and afforestation of the Dry Zone are issues with high priority.

2.2 Current Situation of the Target Sector

The forest area in Myanmar occupies 51% (34,424 thousand ha) of the whole land area (67,657 thousand ha). However, degraded forests (5,000 thousand ha) are included in the forest area. Forest degradation is proceeding every year. In addition to this, 15 million ha of wilderness is constantly used for slash-and-burn farming. This type of farming spurs deforestation in Myanmar⁽¹⁾.

Population increase, widespread deforestation and desertification have been common feature in Dry Zone. The Forest Department (FD) and Dry Zone Greening Department (DZGD) have started to take some measures to tackle desertification and deforestation under the direction of Ministry of Forestry.

The decrease in forest in Dry Zone is mainly due to over cutting for firewood. This is caused by population increase, a supply-deficit, and the high cost of non-wood fuels combined with the inefficient utilization of firewood. At present, closed forests occupy only 19.7% of Dry Zone, which is too low to meet the social and environmental requirements of the area. Deforestation in Dry Zone area is proceeding at an alarming rate. According to data of FD, the annual deforestation

⁽¹⁾ Source: Forest Cover in "Salient Forestry Facts and Figures. Forest Department. November 1998"

rate is about 4.07% in Magway Division, 1.48% in Mandalay Division, 0.68% in Sagaing Division⁽¹⁾.

Land use conditions in Dry Zone are shown in Table 2.2, i.e. agricultural land comprises more than 50%, degraded forests together with shifting cultivation more than 20%, but good forests is less than 20%. A land cover map shows that the flat lands in the central part of Dry Zone are mostly occupied by agriculture, degraded forests lie scattered among them in the hilly area, and good forests (Dry Upper Mixed Deciduous Forests – DUMD) are located in the hilly and mountainous area on the outskirts of Dry Zone

Table 2.2 Land Use Status in Dry Zone

Land Use	Area (ha)	Rate (%)
Good Forest	1,720,161	19.7
Degraded Forest	734,847	8.4
Shifting Cultivation	1,134,813	13.0
Agriculture Land	4,840,969	55.5
Other	170,888	2.0
Water	122,286	1.4
Total	8,723,964	100.0

SOURCE: "The Profile of Dry Zone Greening Department"

2.3 Policies of Myanmar

2.3.1 Policies for Forestry

The Government of Myanmar has proclaimed three national principles, four political, four economic and, four social objectives. The following are the economic objectives which were formulated taking the free market system into consideration;

- a) Development of agriculture as the base and all-round development of other Sectors of the economy as well
- b) Proper evolution of the market-oriented economic system
- c) Development of the economy introducing participation for technical know-how and investment of domestic and foreign sources
- d) Initiative of the State and Myanmar people in controlling the national economy

Within the legal and policy framework, the forestry sector in Myanmar has developed as a profitable sector along with the above economic objectives. Emphasis has been laid on reform toward a market economy, restructuring of the timber industry, and sustainable forest management. Myanmar government gives priority to forestry policy among national socio-economic policies, because it considers the forestry sector to be an important industry that significantly contributes to the conservation of the natural environment, the stabilization of

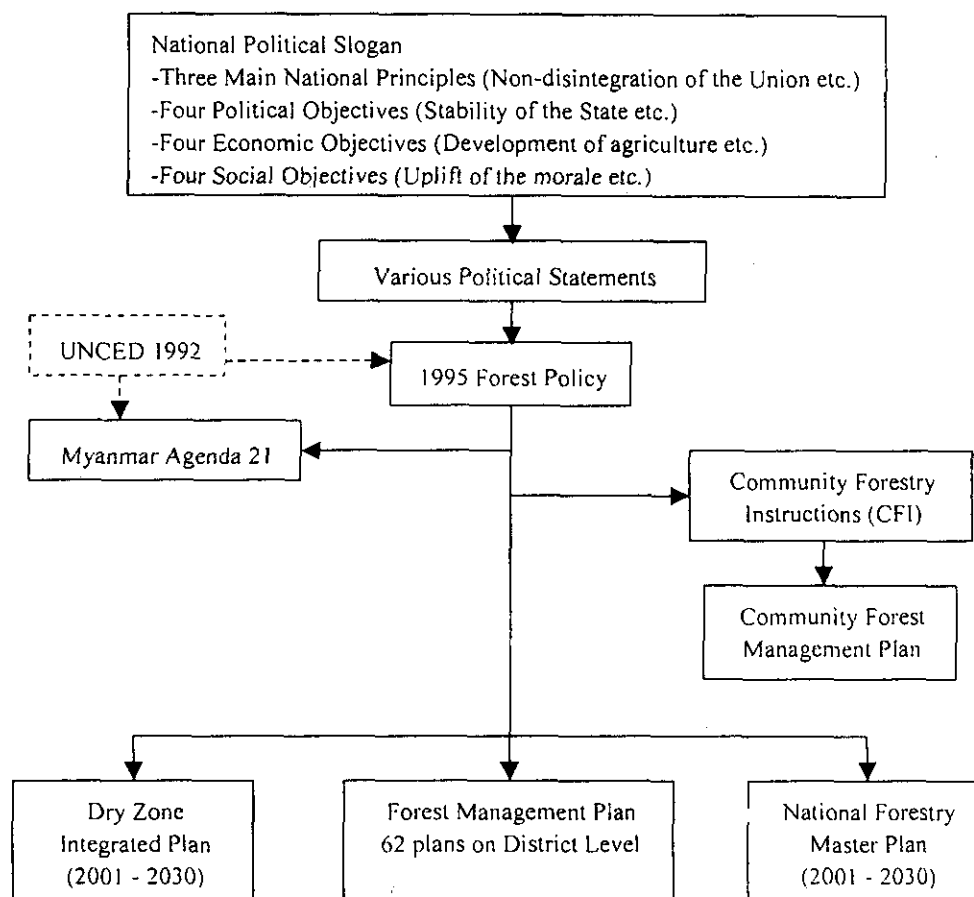
⁽¹⁾ Source: Myanmar Forestry Journal, Ministry of Forestry, January 2000, Vol. 4, No.1.

people's life, and the earnings of foreign currency.

With a view to attaining these objectives, the enlargement of the reserved forest area, the protection and conservation of nature and wildlife sanctuary, the establishment of teak and other hardwood plantations, local supply plantations and watershed plantations, have been extensively carried out. In 1994-95, the Special Project for Greening of Nine Arid Areas in Central Myanmar started as an initial step in the large-scale greening of the Dry Zone.

Policy scheme of the forestry sector is shown in the following figure.

Figure 2.1 Policy Structure of Forestry Sector



1) Myanmar Forest Policy, 1995

The Myanmar Forest Policy was approved by the Cabinet as a Policy Statement in July 1995. The objective of the policy is to secure sustainable benefit of the forest for future generations and to meet the changing socioeconomic requirement.

The Forest Policy is in line with national policies regarding 1) conservation and development of natural resources, 2) socio-economic development, 3) development of technology, and 4) protection of environment. Six imperatives are mentioned, on which the Government must

give the highest priority in order to achieve broader national goals and objectives:

- a) Protection of soil, water, wildlife, biodiversity and environment
- b) Sustainability of forest resources to ensure perpetual supply of both tangible and intangible benefits accrued from the forests for the present and future generations
- c) Basic needs of the people for fuel, shelter, food, recreation etc.
- d) Efficient utilization of the full economic potential of the forest resources, in a socio-environmentally friendly manner,
- e) Participation of the people in the conservation and utilization of the forests
- f) Public awareness about the vital role of the forests in the well-being and socio-economic development of the nation

2) *Community Forestry Instructions (CFI)*

This order has been issued as an official decree by the Director General, FD in view of the urgent necessity of people's active participation in order to plant trees in degraded areas and thus to support economic development, regain environmental stability, and address to basic needs of local communities. Community forestry means forestry operations in which the local community itself is involved and is defined as follows:

- a) Establishment of woodlots in case there is insufficient firewood and other products for community use
- b) Planting of trees and utilizing forest products to obtain food supplies, consumer products and incomes at farmer level

The outline of the community forestry is summarized as follows.

- Lands should be leased to the users' group free of charge initially for 30 years for the establishment of the community forests
- The users' group can make use of the forest products of the community forest in accordance with the prescription of the management plan
- No tax shall be charged on the users' group or the members concerning the forest products used for personal use
- Surplus forest products can be sold to non-members of the village at reasonable prices. Taxation should be exempted from the sale of these products
- The users' group can market the surplus forest products to areas outside the village
- The users' group can utilize the forest products of the community forests and change the surplus into cash to develop business enterprises that produce value added products

CFI should highly contribute to realize the imperatives of Forest Policy mentioned above, among them, especially for "Basic needs for the people for fuel, shelter, food, recreation etc.", and "Participation of the people in conservation and in utilization of the forests".

Therefore, the government of the Union of Myanmar is required to strongly support and continuously promote CFI as one of the most important instructions of Director General, FD to achieve the objective of Forest Policy.

3) Dry Zone Integrated Plan

This is a national plan with eleven volumes including appropriate soil improvement and management, development of water resources, promotion of forestation, appropriate natural forest management, training, research and extension, development of wood fuel substitute, development of necessary infrastructure, etc. For the promotion of greening and prevention of environmental degradation in Dry Zone, this Plan aims at:

- Establishment of forest plantations for environmental greening and for local supply
- Protection and conservation of remaining natural forests
- Introduction and promotion of the utilization of wood fuel substitutes
- Management and development of water resources

In the volume on training, research and extension, it mentions the necessity of training courses for in-service personnel related to local inhabitants, research and extension/education in order to carry out dry zone greening projects.

4) National Forestry Master Plan

The first draft of this master plan has already been submitted to the Ministry for approval. The three objectives of the plan are;

- a) To ascertain the current situation of forestry, its management and utilization in Myanmar
- b) To develop a policy framework for future activities for a period of 30 years (2001/2 - 2030/31)
- c) To provide proper guidelines for forestry Sector development on a sustainable basis

The plan consists of the following 18 chapters.

1) Natural forest management, 2) Forest plantation, 3) Forest protection, 4) Conservation of biological diversity, 5) Watershed management, 6) Forests products and services, 7) Non-wood forest products (NWFPs), 8) Home gardens and other non-forest tree resources, 9) Biomass energy, 10) Community participatory forestry, 11) Timber harvesting, 12) Wood-based industry, 13) Pricing and marketing, 14) Policy, legislation and institutional strengthening, 15) Human resources development, 16) Forest research and development, 17) Forestry extension and 18) Monitoring and evaluation

5) Myanmar Agenda 21

Myanmar Agenda 21 was officially published by the National Commission for

Environmental Affairs. This agenda is keeping pace with Agenda 21, which was adopted in the United Nations Conference for Environmental Development (UNCED) in 1992.

The following matters have been listed in Myanmar Agenda 21 for improving the institutional effectiveness of the forestry organizations

- Review the structure of FD and its strength and weakness for scientific management of forestry resources.
- Prepare a Manpower Development Plan to include career planning, incentive structure and accountability.
- Review the existing channels of authority and identify areas for delegation and also streamline procedures with clearly defined job responsibilities at all levels.
- Undertake restructuring of FD based on clearly defined operational functions.
- Establish a database and statistical system to support sector planning, monitoring and evaluation of forestry projects and programs.
- Clarify institutional linkages and coordination within and between related Sectors such as rural development; agriculture/livestock; mining; irrigation and hydro; and environmental protection.
- Establish a mechanism to allow the effective involvement of NGO's in providing inputs to all aspects of forestry development and intensify active participation of NGO's in programming implementation.
- Provide training courses to strengthen capabilities in the following priority areas: performance evaluation system for forest management; continuous forest resources monitoring and natural resources accounting system; forest Sector planning; policy analysis and impact assessment and revenue system monitoring.

Myanmar Agenda 21, which has also been published in English, seems to have been issued as a promise to the Myanmar nationals as well as to the international society. Most of the issues would be surely addressed as they are also included in Forest Policy, 1995.

2.3.2 Policies for Agriculture

Since 1992/93 the integrated development strategy has been applied for agricultural development with the following three main objectives:

- To achieve surplus in paddy production
- To achieve self-sufficiency in edible oil
- To promote production of exportable peas and farming commodities such as cotton, jute, rubber, oil-palm, and mulberry.

Among the above three objectives, the first one had the top priority. The second and the third follow in order. For expansion of rice production, improvement and construction of irrigation facilities were implemented in the dry season in the 1990s. Agricultural machinery, chemical fertilizers, pumps and diesel oil were imported for promotion of paddy production in the dry

season. Such measures brought about successful results to some extent. However, the traditional low cost and low yield agriculture began to change to the high cost and high yield agriculture. The following four policies have been applied to achieve the main objectives:

- Free choice in agricultural production
- Extension of agricultural land and to safeguard the farmers' right
- Permission of farming commodity and perennial crops
- Encouragement of participation by private sector in the distribution of farm machinery and other inputs

2.4 Prior or Ongoing Efforts

2.4.1 Projects by Myanmar Government

1) Greening Project for the Nine Critical Districts of the Arid Zone of Central Myanmar

a) *Duration: 3 years from 1994*

b) **Project Sites:**

- Sagaing Division: Shwebo, Monywa and Sagaing Districts
- Mandalay Division: Myingyan, Meiktila, Nyaung-Oo and Yamethin Districts
- Magway Division: Pakokku, Minbu, Magway and Thayet Districts

45 townships have been selected as target areas in the above districts

c) **Executing Agency:** FD, Ministry of Forestry

d) **Government Input:** 102.6 million kyats

e) **Immediate Objectives:** To supply firewood at a low price, to save energy by improved stoves, and to implement a dissemination campaign for multipurpose tree species and agro-forestry, etc.

f) **Output achieved:**

Firewood plantation establishment: 52,650 acres (21,323 ha)

Nursery establishment: Permanent 42, Temporary 57 sites.

Seedling production: 18.8 million

Small pond construction: 179 sites

Training/Workshop: 6 times

Personnel trained: 188

Transfer of firewood forest to local communities: 4,700 acres (1,904 ha)

2) Greening projects by DZGD

DZGD established in 1997, has planted trees for community supply, watershed conservation, hillside greening, etc. The accomplishments since 1997 are shown in Table 2.3.

DZGD has a plan titled “Comprehensive plan for reforestation of Dry Zone for 30 years period” which begins in 2001/2 with a duration of 30 years. Among the six expected benefits within this 30-year plan, the following two items are related to community forest;

- About 1.2 million acres (486,000 ha) of natural and plantation forests will be formed and managed by local communities as community forests.
- The provision of about 1.8 million tons of firewood will be made available to the local communities from the forestry cultural operations without affecting the existing forests.

Table 2.3 Trees Planted by DZGD program (Acres/(ha))

Fiscal Year	Sagaing Division	Mandalay Division	Magway Division	Total
1997	3,575 (1,448)	4,300 (1,742)	11,655 (4,720)	19,530 (7,910)
1998	8,107 (3,283)	11,580 (4,690)	15,600 (6,318)	35,287 (14,291)
1999	8,003 (3,241)	12,037 (4,875)	15,000 (6,075)	35,040 (14,191)
2000	7,325 (2,967)	12,675 (5,133)	15,000 (6,075)	35,000 (14,175)
Total	27,010 (10,939)	40,592 (16,440)	57,255 (23,188)	124,857 (50,567)

SOURCE: Description of the DZGD, December 2000 DZGD

3) Projects by Ministry of Agriculture and Irrigation

The Ministry of Agriculture and Irrigation promotes the following five programs;

- 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 new varieties.

First, development of new agricultural land includes land consolidation in existing agricultural land with proper drainage irrigation, and farm roads to enable full utilization of mechanical power. It consists of the following actions:

- Reclamation of fallow land and cultivable waste land
- Development of farmer’s embankment and paddy-fish integrated farming in deep water areas
- Protection of soil erosion and development of terrace farming in highland and slope land areas

Since 1998, a new policy; changing traditional small-scale farming to large-scale commercial farming system has been added. The Main objective of this scheme is to get new farmland in

flooded low areas, fallow fields, and wilderness, however the developing cost is high. Farming rights for rice, pea, oil-plants, rubber, and oil palm are given to the state or private companies that join the program.

Second, at present only 6% of the total water resources of 870 million acre feet (328,000 cubic meter) per annum are being utilized. Therefore, the following measures are undertaken for provision of sufficient irrigation water:

- The construction of new reservoirs and dams,
- The proper management for the storage and utilization of run-off water from the watershed areas,
- The renovation of existing reservoirs for raising storage capacity and efficient delivery of irrigation water,
- The diversion of water from streams and rivulets during high water levels into adjacent ponds or depressions and for storage with sluice gates,
- The lifting of water from rivers and streams through pump irrigation and
- The effective utilization of ground water.

Thirdly, increased cropping intensity has expanded the use of machinery from land preparation to harvesting and drying. There are three factories under the Agriculture Mechanization Department, Ministry of Agriculture and Irrigation and a lot of small-scale private factories producing agricultural machinery and implements.

Fourthly, in the application of modern technology, measures include transfer of technology to farmers through agricultural extension regarding crop cultivation practices, appropriate cropping patterns, provision and proper utilization of agricultural inputs, and systematic plant protection practices. Farmers' education activities include use of mass media (newspaper, radio, television, journals), producing education pamphlets, training and visit by extension staff in groups and individually.

Fifthly, utilization of modern varieties includes breeding of high-yielding varieties and upgrading the quality through research and development, production of hybrid varieties of field crops, fruits and vegetables from abroad to upgrade the quality and increase the yield.

2.4.2 Aftercare Program for the Central Forestry Development Training Center Project

The JICA-CFDTC Aftercare Program (1999-2001) has been implemented and focused on training for community forestry extension. A "Field Level Extension Method" training course has been conducted six times during 1999/00 – 2000/01 and 110 officers have attended the two-week training program. The training program includes lectures on basic concepts to the participatory approach, gender consideration, extension methods, social forestry and community forestry. The Participatory Rural Appraisal (PRA) workshop is the highlight of this training course. PRA is a participatory developing method for the local people to identify real needs of the community. The

participants visited villages and conducted field practice as a part of the PRA workshop with villagers' participation. This is a very important trial of the CFI introduction. However ex-trainees have not been able to achieve very good performance on extension of community forest. The prospective Project is to overcome the shortcomings of this prior effort.

Based on the analysis of experiences in the JICA Aftercare Program in CFDT, major issues for effective extension are summarized as follows:

- 1) At FD Township Offices, community forestry extension is not given clear priority or status among various works that the staff should deal with. Clear instructions are rarely given to the ex-trainees from their senior officers. In other words, front line officers are busy enough with other work and not motivated enough to make new efforts for community forestry extension.
- 2) Two weeks training is not enough for the extension staff to work alone practically by themselves. They may need partner and aftercare with strong technical support for extension of community forest.
- 3) FD frontline officers and local communities have limited experience in forging cooperation. FD officers have been concerned only with trees and had very few chances to work directly with the local communities. Activities of village people often disturb FD's effort to appropriately preserve forests. On the other hand, village people do not expect FD officers to work for the benefit of the community. In other words, FD officers and farmers have not recognized that they are needed by each other. This situation prevents smooth extension work of community forestry by FD's initiative.

2.4.3 Project by International or Other Agencies

1) UNDP (Implementing Agency-FAO)

A UNDP project called "Environmentally Sustainable Food Security and Micro-income Opportunities in Dry Zone" is promoting community forests.

- UNDP Budget: US\$ 3.96 million
- Project Duration: 2 years and 6 months (started in Sep. 1999)
- Cooperating Organization: Myanmar Agricultural Service (MAS)
- Subject Area: Kyaukpadaung, Magway, Chaung-Oo (The project area is limited in these three townships.)

The objectives of the Project are:

Forestry: Income generation through land development and forest management (target area: 6,000 acres or 2,430 ha, target households: 3,000)

Agriculture: Improvement of income and productivity of small-scale farmers (target area: 10,000 acres or 4,050 ha, target household: 5,000)

Livestock and Fishery: New creation of income generating opportunities (target household: 3,000)

The project has a multi-sectoral approach to bring about more effective results after the reformation of the two projects in the agricultural and forestry sectors, each of which started in 1994. The target groups are poor farmers and the project puts priority in generating income opportunities on a sustainable basis. And at the same time, “the Sustainable Livelihoods Micro-credit for the Poorest” scheme has been carried out in the same target areas in cooperation with the project. This project also includes training of range officers from Forest Department. Community forestry and agro-forestry are the two issues to be extended to the selected communities. Extension works are basically contracted-out to NGOs. A manual “Capacity Building of Community Skill in Village Forest Management Plan, March 2001 (technical report No.DLTG/FOR/01-06)” has been issued. This project may suggest a lot to the prospective project of FD-JICA cooperation.

As a result of this project as many as 25 groups with 2112.07 acres (855 ha) of community forestry have been approved in the Kyaukpadaung Township officially by FD within 2 two years. As this project covers three townships, the total community forestry approved is some 7000 acres (2,835 ha).

2) Other projects by International Agencies

Other projects by the Korean International Cooperation Agency, and Japanese NGO's are mentioned in ANNEX 7.10