

ミャンマー中央林業開発訓練センター計画 アフターケア調査団・短期調査員報告書

平成 11 年 3 月

国際協力事業団
森林・自然環境協力部

序 文

国際協力事業団は、ミャンマー国政府からの技術協力の要請を受け、中央林業開発訓練センター（Central Forestry Development Technical Center ; CFDTTC）において、平成2年8月1日から平成9年7月31日までフォローアップも含め7年間にわたり、ミャンマー中央林業開発訓練センター計画を実施してきました。

この度、当事業団は、協力終了後の状況や協力効果の把握を行い、アフターケア協力の必要性及び可能性について協議することを目的として、平成10年9月17日から12月18日まで、佐藤 朗氏を短期調査員として、また、平成10年12月6日から12月18日まで、林野庁管理部 村沢 勝を団長とするアフターケア調査団を同国に派遣しました。短期調査員及び調査団はミャンマー国政府関係者と協議を行うとともに、現地調査や関連資料の収集を行い、帰国後の国内作業を経て、調査結果を本報告書に取りまとめました。

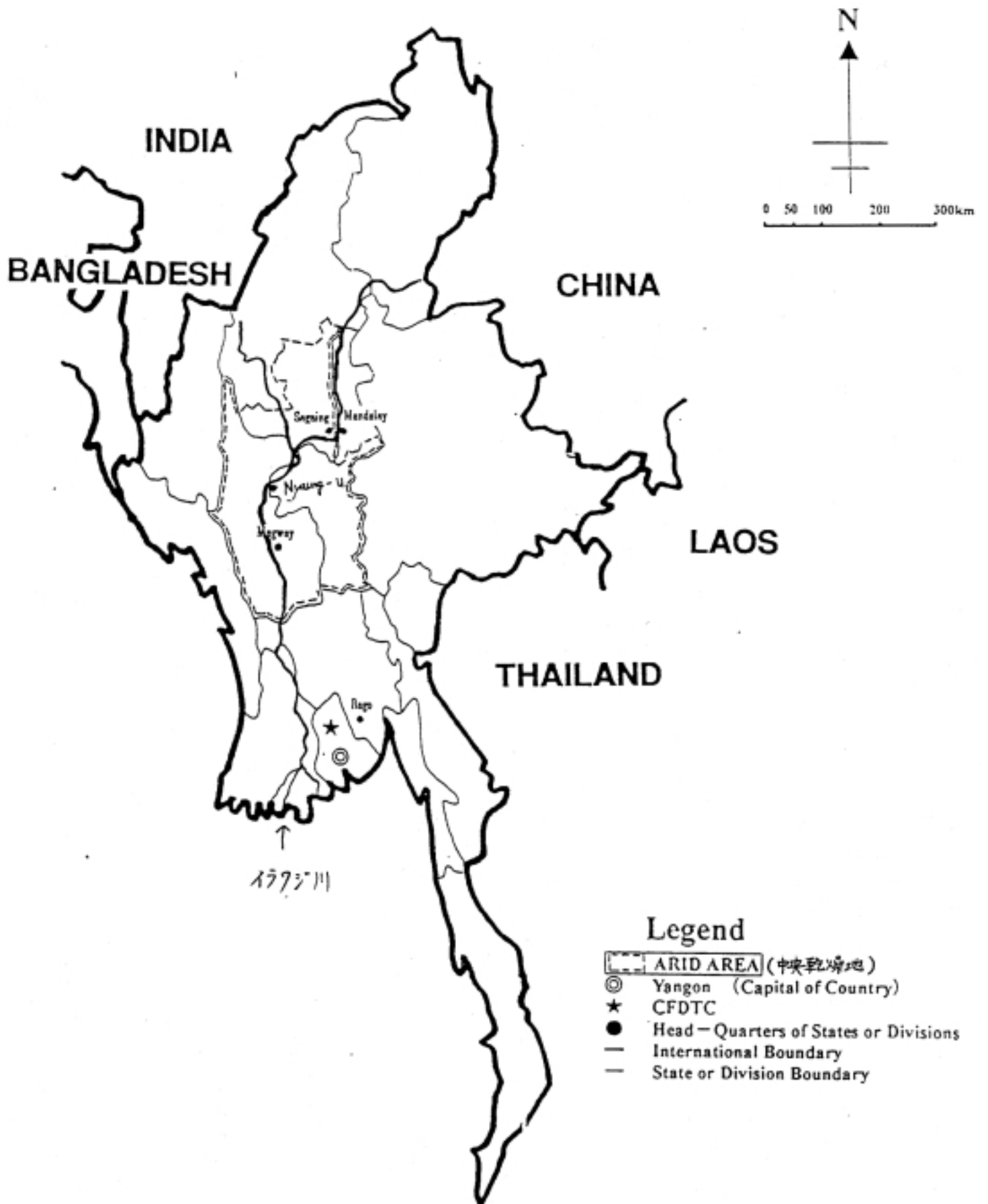
今回の調査結果が本アフターケア協力実施の指針となるとともに、アフターケア協力の実施が今後の両国の友好・親善の一層の発展に資することを期待いたします。

終わりに、本調査の実施にご協力とご支援をくださった両国関係者の皆様に、心から感謝の意を表します

平成11年3月

国際協力事業団
理事 亀 若 誠

プロジェクト位置図



Legend

- ARID AREA (中央乾燥地)
- ◎ Yangon (Capital of Country)
- ★ CFDTC
- Head-Quarters of States or Divisions
- International Boundary
- - - State or Division Boundary

中央乾燥地における荒廃地



疎林化の進む地域



中央林業開発訓練センター
(CFDTC) 外観



中央乾燥地で生活する集落



中央乾燥地での植林植え穴



目 次

序 文

プロジェクト位置図

写 真

第1章 アフターケア調査団派遣概要

1 - 1	協力要請の背景	1
1 - 2	現在までの経緯	1
1 - 3	本調査の目的	1
1 - 4	団員構成	1
1 - 5	調査日程	2
1 - 6	主要面談者	2

第2章 要請の内容

第3章 調査結果

3 - 1	普及関係職員の普及能力の向上の必要性	3
3 - 2	普及員訓練計画の作成	4
3 - 3	普及員訓練計画内容の検討	4
3 - 4	ミャンマー側のアフターケア協力実施体制	6
3 - 5	訓練機材の維持等	6
3 - 6	日本側のローカルコスト負担	6
3 - 7	合意文書の締結	6

第4章 アフターケア協力の基本計画

4 - 1	アフターケア協力の目的	7
4 - 2	プロジェクトの基本構想	7
4 - 3	その他の交渉結果	8

第5章 提言

5 - 1	訓練計画上の留意事項	9
5 - 2	訓練の実施及び評価	9

(資 料)

1	中央乾燥地緑化計画概要	11
2	暫定普及員訓練計画	12
3	カウンターパート配置一覧表	15
4	ミニッツ	16

2 乾燥地緑化局

2. 乾燥地緑化局及び乾燥地の状況

2-1. 新局の設立

森林局が1994年から実施してきたMandalay、Sagain、Magweの3 Divisionsの9 Districts 中のDry Zone Greening Projects 等を、乾燥地の早期緑化などを目的にして対象地域を拡大し、3 Divisions, 13 Districtsにおいてユーカリなどの早生樹種を用いて緑化を行う林業省の新しい局として発足させたものである。対象13 Districtの合計面積は、21,557,459エーカーありその中で、緑化と薪炭供給を目的とした造林地の造成、天然林の保護保全、代替え燃料利用の促進、生活用水供給を目的として活動している。1997年から2000年までの4年間を活動第1期として、植林面積は年間35,000エーカーと決められており、政府の大きな財政的負担のもとに植林事業が進められている。

新局として発足以後、局長は森林局長が兼務で当たっている。Mandalay郊外のPatheingyiに本部を置き常駐する局次長のもとで事業をすすめている。全体計画では3231名の職員が勤務することになっているが、1998年9月現在で1370名の配置となっている。事業実施部分は各Divisionにあり、森林局の出先機関と並立して存在し、業部を分け合ったようになっている。全林業関係業務のうち、乾燥地緑化局の仕事を除いた部分を森林局で担当している。

2-2. 目的として以下の8点があげられている。

- 2-2-1. ミャンマー中央乾燥地を緑化する
- 2-2-2. 環境全体を保護・保全（特に土壌と水資源）する
- 2-2-3. 地域住民の森林資源需要を満たす
- 2-2-4. 持続的な地域社会経済開発を進める
- 2-2-5. 森林資源の価値と便益に対する地域住民の意識を喚起する
- 2-2-6. 環境保全と持続的な開発のため地域住民の知識を補い、参加を促す
- 2-2-7. 微気象等の環境改善により農業生産力を持続的なものにする
- 2-2-8. 砂漠化を阻止する

2-3. 上記目的を達成するための活動としては以下の4点があげられている。

- 2-3-1. 環境緑化と森林資源への需要に対応するため森林を造成する
- 2-3-2. 残存する天然林を保護保全する
- 2-3-3. 代替え燃料の利用促進を図る
- 2-3-4. 水源確保のための方策を講じる

2-4. 事業計画

全体計画としては、1997/98年度から2008/09年度までの12年間を設定して、その期間を4年づつ3期に分けて計画をたてている。現在は第1期の2年目に

入っているところである。

2-4-1. 森林造成計画：第1期には年間植栽面積を35,000エーカーとして事業が進められている。35,000エーカーの内訳は以下のとおり。

薪炭林造成	14,370
アグロフォレストリー	2,800
山地緑化	2,700
水源林	8,750
援助協力による植林	1,250
試験造林	130
他の緑化植林	5,000
合計	35,000

97/98年度、98/99年度とも目標植林面積を達成している。

2-4-2. 天然林保護計画：中央乾燥地の荒廃した森林地約180万エーカーがその対象となるが、年間100,000エーカーの保護保全が計画されている。

Sagaing Division	20,000
Mandalay Division	23,000
Magwe Division	57,000
合計	100,000エーカー

2-4-3. 代替え燃料の利用促進事業としては以下のとおり

- 改良かまどの配布：森林研究所で開発されたA-1料理用かまど
- ブリケット製造・利用の促進：3 Divisionにそれぞれ生産工場を開設する
- 農業廃棄物の利用

2-4-4. 水源確保のための方策

- 小規模ダム建設：1998年には13 Districtに170のダムが造られる予定
- 地下水の利用：主に苗畑と植林地での利用のために井戸を5つ掘る予定

2-4-5. 山地緑化計画の対象としてMandalay Divisionでは10、Magwe Divisionでは4、Sagaing Divisionでは1の山の緑化を計画している。

2-4-6. 特別緑化推進地区として2地区を対象に緑化を進めている。この地区は特に乾燥の度合いが高いうえ、土壌侵食と裸地化が進んでいるところで早急に土壌被覆を図る必要がある。

- Hpan-Kha San area, Yenangyaung Township

b. Daung-Nay area, Mangwe Township

2-4-7. 乾燥地域のなかで森林局が行ってきた植林活動を乾燥地緑化局が引き継いで事業を進めるものとしては、以下のとおり。

- a. Myingyan District Watershed Mountains special greening proejct
- b. Myanmar Yomiuri Afforestation Project
- c. Dahat-Si Protected Public Forest Greening Project (JIFPRO)

2-5. 事業予算計画

第一期4年間の総予算は、K988.98 million

2-6. 関連資料

- 2-6-1. 乾燥地緑化局組織図 (図4)
- 2-6-2. 職員の異動 (表7)
- 2-6-3. 気象データ (表8)
- 2-6-4. 土地利用形態 (表9)
- 2-6-5. 乾燥地の人口 (表10)
- 2-6-6. 対象地域13Districtsの土地利用図 (図5)
- 2-6-7. 乾燥地の状況 (写真9、10)

図4 DZGD 組織図

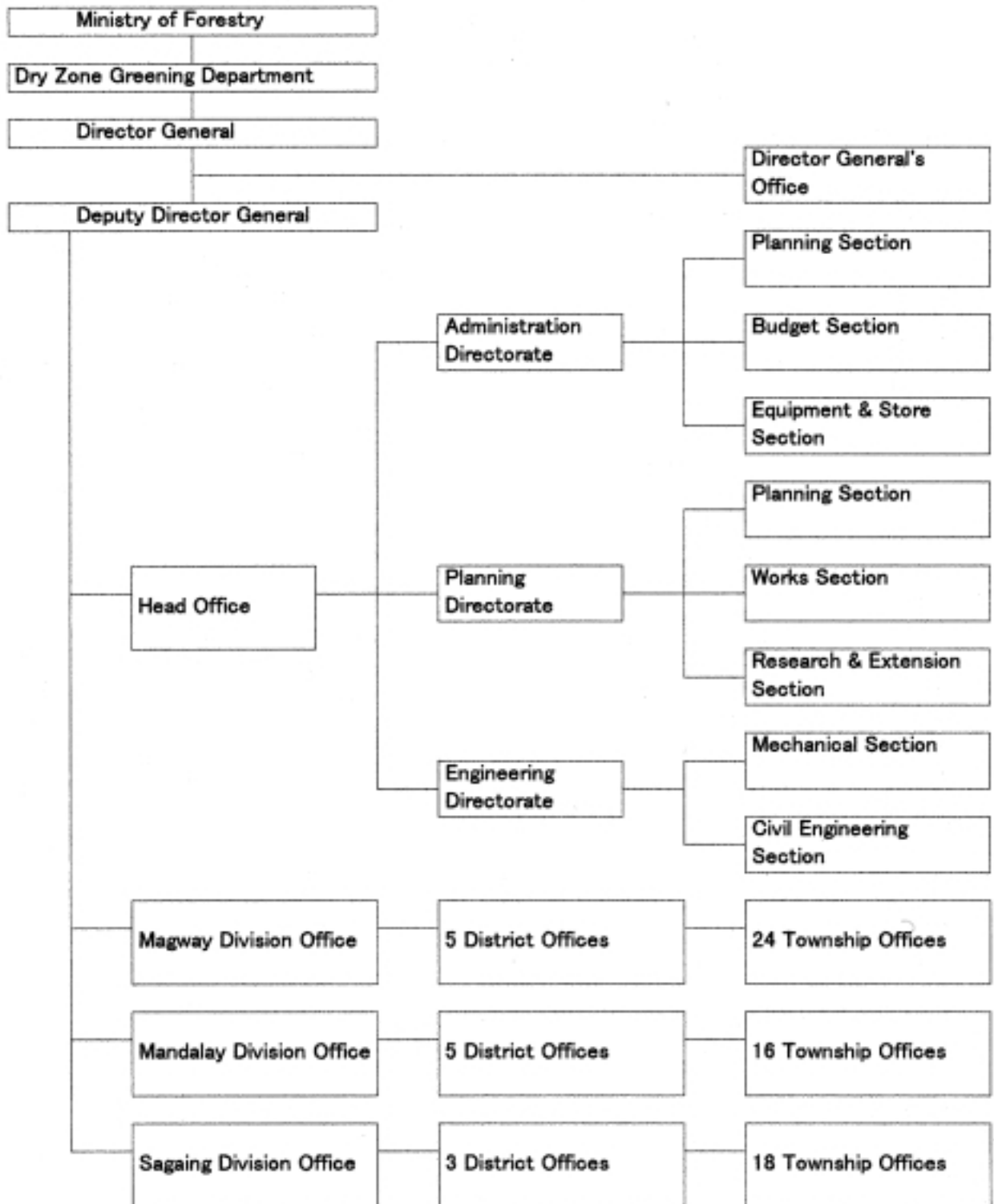


表7 職員の異動

Magwe Division のDZGD組織形成
FDからDZGDへの人事異動とその後の増員状況

FD	1997	Transfer to DZGD	Remaining	Employment	1998
Forestry cadre staff	826	446	380	191	571
Supporting staff	287	59	228	-35	193
Total	1113	505	608		764

DZGD	1997	Employment	1998
Forestry cadre staff	446	25	471
Supporting staff	59	18	77
Total	505		548
		充足率	43.7

森林局はDivision内に25のTownship Office を開設している。

DZGDはSetoktara Township Office を除く24事務所を開設している。

FD及びDZGDの2局が業務を分割したような形になっているため、FDではもとの人員数まで戻すことはなく、一部Township Officeは業務量が減少したため、格付けが下がっているものもある。

Range Officer 以上の人員は新規に森林学校及び林業大学を卒業する人員を待たなければならず、直ちに増員できるものではなく、予定人員に達するまでには時間がかかる。

表8 気象データ

Division	Station	1987-1996 Average			
		Rain fall mm	Temperature centigrade		Humidity m.r. %
			m.max.	m.min.	
Sagaing	Division				
	Monywa	706	33.7	21.5	68.6
	Shwe Bo	871	32.7	21.7	66.2
Magwae	Division				
	Magway	859	34.3	19.5	66.9
	Gangaw	1152	31.9	19.8	72.3
Mandalay	Division				
	Mandalay	798	33.9	22.4	67.3
	Nyaung U	591	33.7	22.3	58.4
Yangon		2639	33.1	21.9	75.5

出所: Statistical Yearbook, 1997, Central Statistical Organization, Yangon, Myanmar

Rain fall condition of Nyaung-U Township in 1998

month	date	inch	year	inch
1		0	1988	31.13
2		0	1989	29.29
3		0	1990	23.92
4	8	0.12	1991	20.48
	22	0.12	1992	24.07
5	6	0.04	1993	20.77
	19	1.18	1994	19.86
	20	0.51	1995	20.19
	21	1.02	1996	29.35
	26	0.16	1997	16.89
6		0	1998	13.41
7	14	0.12		up to 30/10/98
	27	0.16		
8	19	0.55		
	20	0.32		0.87
9	6	0.69		
	7	0.78		
	8	1.18		
	9	0.1		
	11	0.04		
	16	0.95		
	18	1.56		
	20	1.57		6.87
10	9	0.04		
	13	1.06		
	14	0.43		
	16	0.71		2.24
total		13.41		

表9 DZGD 対象Division の土地利用形態

Division	Forest		Intact	Degraded		Agriculture	Other use	Water	Total acre
	sub-total				Degraded taungya				
Sagain	1,672,174	1,141,266	383,048	147,860	3,639,531	111,036	99,414	5,522,155	
Mandalay	1,602,888	895,090	280,356	427,442	3,897,791	111,329	41,175	5,653,183	
Magwe	5,595,550	2,214,240	1,152,438	2,228,872	4,425,074	199,908	161,589	10,382,121	
Total	8,870,612	4,250,596	1,815,842	2,804,174	11,962,396	422,273	302,178	21,557,459	
%	41.1	19.7	8.4	13.0	55.5	2.0	1.4	100.0	

植林対象面積 4,620,016 acre

表10 乾燥地の人口

出所: Manpower and Immigration Department, 1998

No. Division	No. District	No. Township	Population
3 Division	13 District	57 Township	11,273,674 Grad total

1 Sagaing 3,236,629 Division total

1 Sagaing	776,550 District total
1 Myaung	144,798
2 Myinmu	130,575
3 Ngazun	188,004
4 Sagaing	313,173
2 Shwe Bo	1,258,401 District total
5 Kanbalu	145,427
6 Khin-U	154,399
7 Shwebo	276,467
8 Depeyin	145,363
9 Tantse	171,586
10 Wetlet	229,389
11 Ye-U	135,770
3 Monywa	1,201,678 District total
12 Ayadaw	192,425
13 Budalin	150,353
14 Chaung-U	110,740
15 Monywa	325,165
16 Pale	144,513
17 Salingyi	141,132
18 Yinmabin	137,350

2 Magway

4,254,713 Division total

4 Magway	1,420,587	District total
19 Chauk	249,608	
20 Magway	305,484	
21 Myothit	164,148	
22 Natmauk	247,289	
23 Taungdwingyi	255,161	
24 Yenangyaung	198,897	
5 Minbu	653,077	District total
25 Minbu	180,198	
26 Ngaphe	43,880	
27 Pwintbyu	175,311	
28 Salin	253,688	
6 Thayet	751,302	District total
29 Aungjan	230,206	
30 Kanma	88,764	
31 Mindon	71,468	
32 Minhla	122,950	
33 Sinbaungwe	114,936	
34 Thayet	122,978	
7 Pakokku	1,171,013	District total
35 Myaing	277,757	
36 Pakokku	341,205	
37 Pauk	169,506	
38 Seikphyu	102,405	
39 Yesagyo	280,140	
8 Gangaw	258,734	District total
40 Gangaw	121,396	
41 Htilin	63,428	
42 Saw	73,910	

3 Mandalay

3,782,332 Division total

9	Kyaukse	552,528	District total
43	Kyaukse	201,182	
44	Myittha	182,339	
45	Tada_U	169,007	
10	Meiktila	1,021,290	District total
46	Mahlaing	202,330	
47	Meiktila	378,101	
48	Thazi	199,585	
49	Wundwin	241,274	
11	Myingyan	1,181,152	District total
50	Kyaukpadaung	318,080	
51	Myingyan	351,592	
52	Natogyi	229,829	
53	Taungtha	281,651	
12	Nyaung U	274,670	District total
54	Nyaung-U	274,670	
13	Yamethin	752,692	District total
55	Pyawbwe	278,982	
56	Tatkon	227,727	
57	Yamethin	245,983	

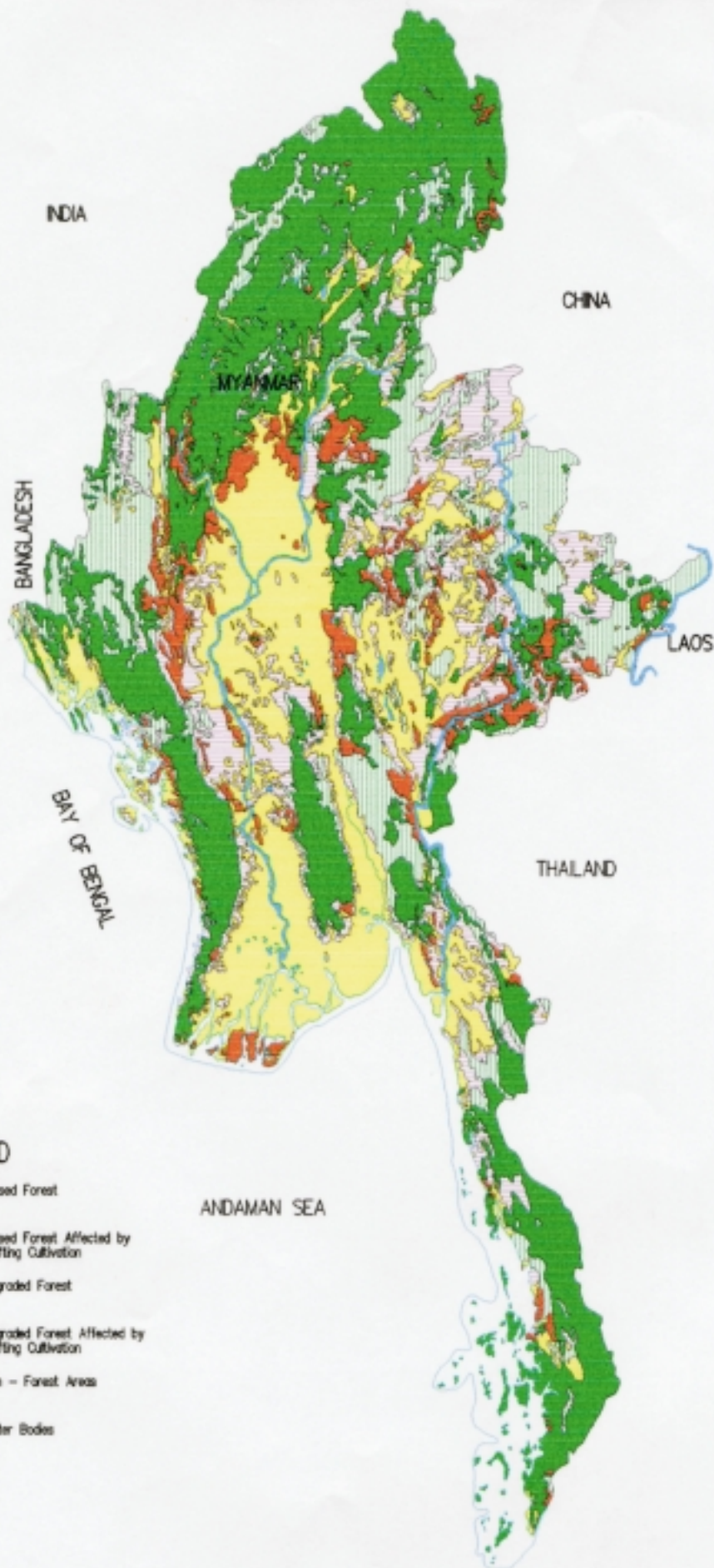
☒ 5

1. LAND USE & LANDCOVER MAP, MYANMAR, 1: 8,500,000
2. LAND USE MAP OF DRYZONE AREA, 1: 2,200,000
3. LAND USE AND LAND COVER MAPS, 13 Districts in dry zone
 - 3-01. MONYWA DISTRICT, 1: 800,000
 - 3-02. SAGAING DISTRICT, 1: 500,000
 - 3-03. SHWEBO DISTRICT, 1: 800,000
 - 3-04. GANGAW DISTRICT, 1: 700,000
 - 3-05. MAGWAY DISTRICT, 1: 700,000
 - 3-06. MINBU DISTRICT, 1: 700,000
 - 3-07. PAKOKKU DISTRICT, 1: 650,000
 - 3-08. THAYET DISTRICT, 1: 900,000
 - 3-09. KYAUKSE DISTRICT, 1: 700,000
 - 3-10. MEIKTILA DISTRICT, 1: 700,000
 - 3-11. MYINGYAN DISTRICT, 1: 650,000
 - 3-12. NYAUNG-U DISTRICT, 1: 300,000
 - 3-13. YAMETHIN DISTRICT, 1: 700,000

LAND USE & LANDCOVER MAP



Scale 1 : 8,500,000



LEGEND

-  Closed Forest
-  Closed Forest Affected by Shifting Cultivation
-  Degraded Forest
-  Degraded Forest Affected by Shifting Cultivation
-  Non - Forest Areas
-  Water Bodies

LAND USE MAP OF DRYZONE AREA



Remote Sensing and GIS Section
 Planning and Statistics Division, Forest Department

MONYWA DISTRICT LAND USE AND LAND COVER MAP



1 : 800,000 Scale



LEGEND

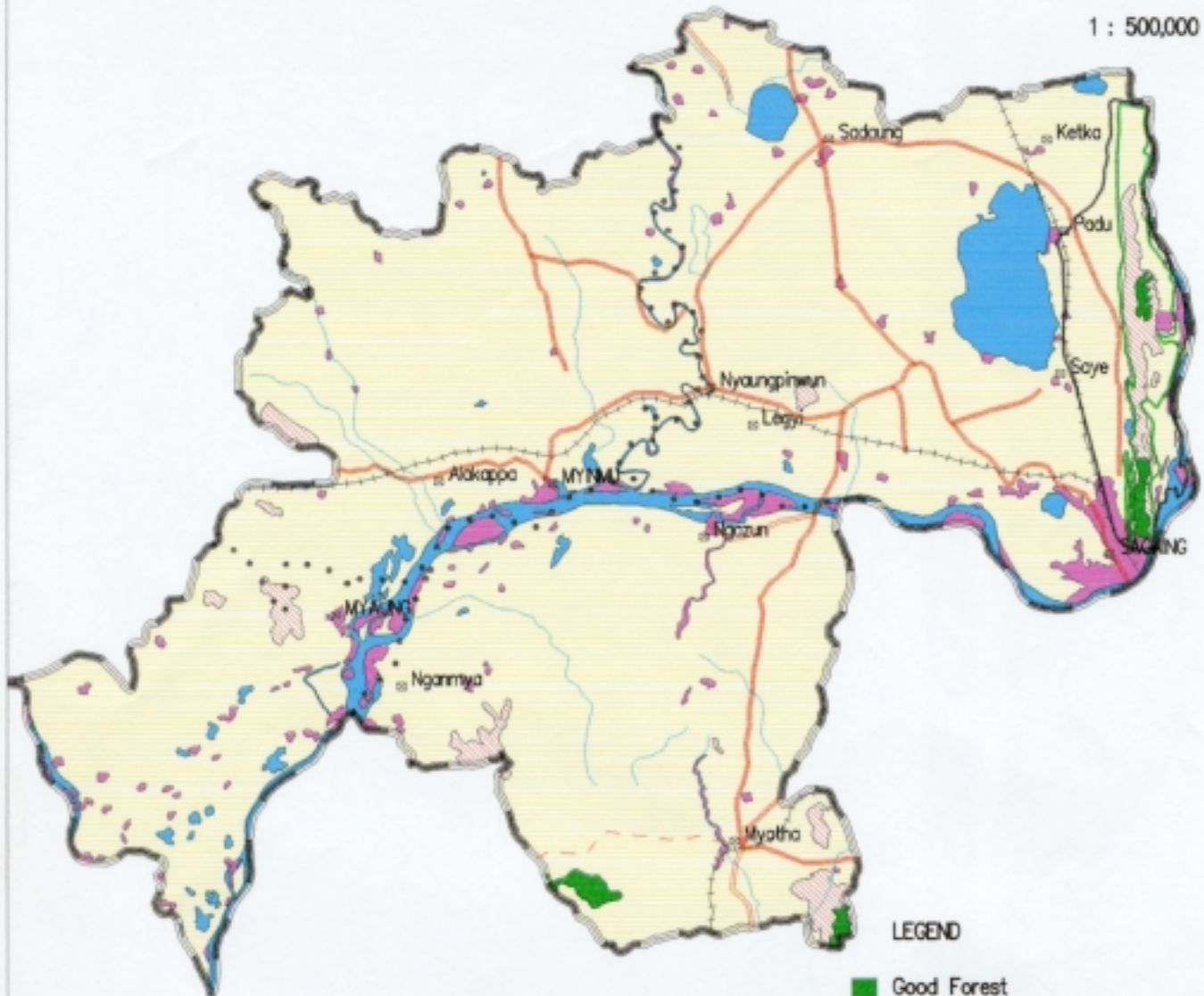
- | | |
|---|--------------------------|
| Good Forest | District Boundary |
| Degraded Forest | Township Boundary |
| Shifting Cultivation | Forest reserve boundary |
| Agriculture | Railway |
| Water | Main Road |
| Other | Secondary Road |
| | Cart-Tract and Foot-Path |
| | Stream |

Remote Sensing and GIS Section
Planning and Statistics Division, Forest Department

SAGAING DISTRICT LAND USE AND LAND COVER MAP



1 : 500,000 Scale



LEGEND

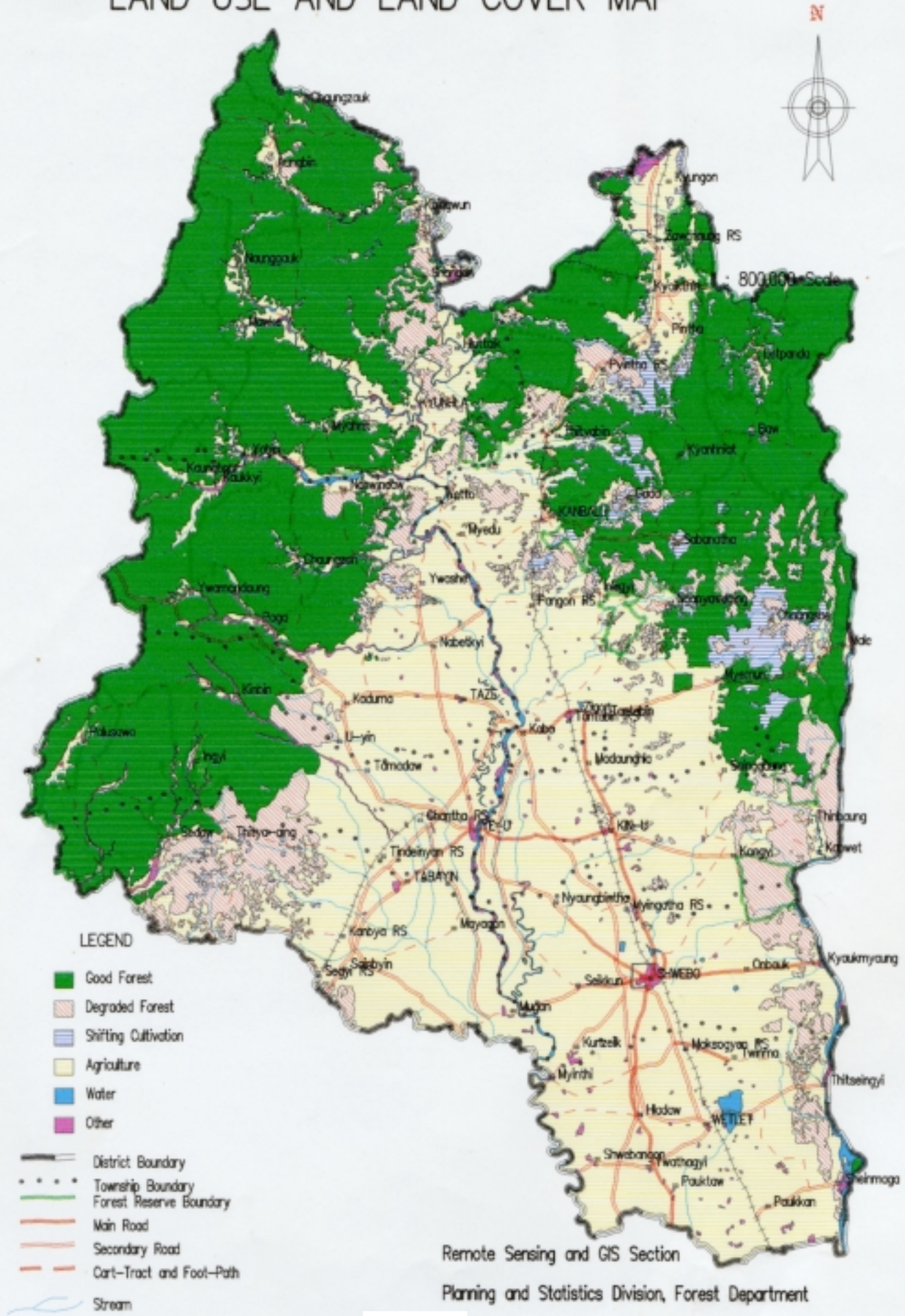
- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other

- District Boundary
- Township Boundary
- Minwun Taung Protected Area Boundary
- Buffer strip
- Railway
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream

Remote Sensing and GIS Section

Planning and Statistics Division, Forest Department

SHWEBO DISTRICT LAND USE AND LAND COVER MAP



LEGEND

- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream

Remote Sensing and GIS Section
Planning and Statistics Division, Forest Department

MAGWAY DISTRICT LAND USE AND LAND COVER MAP



1 : 700,000 Scale



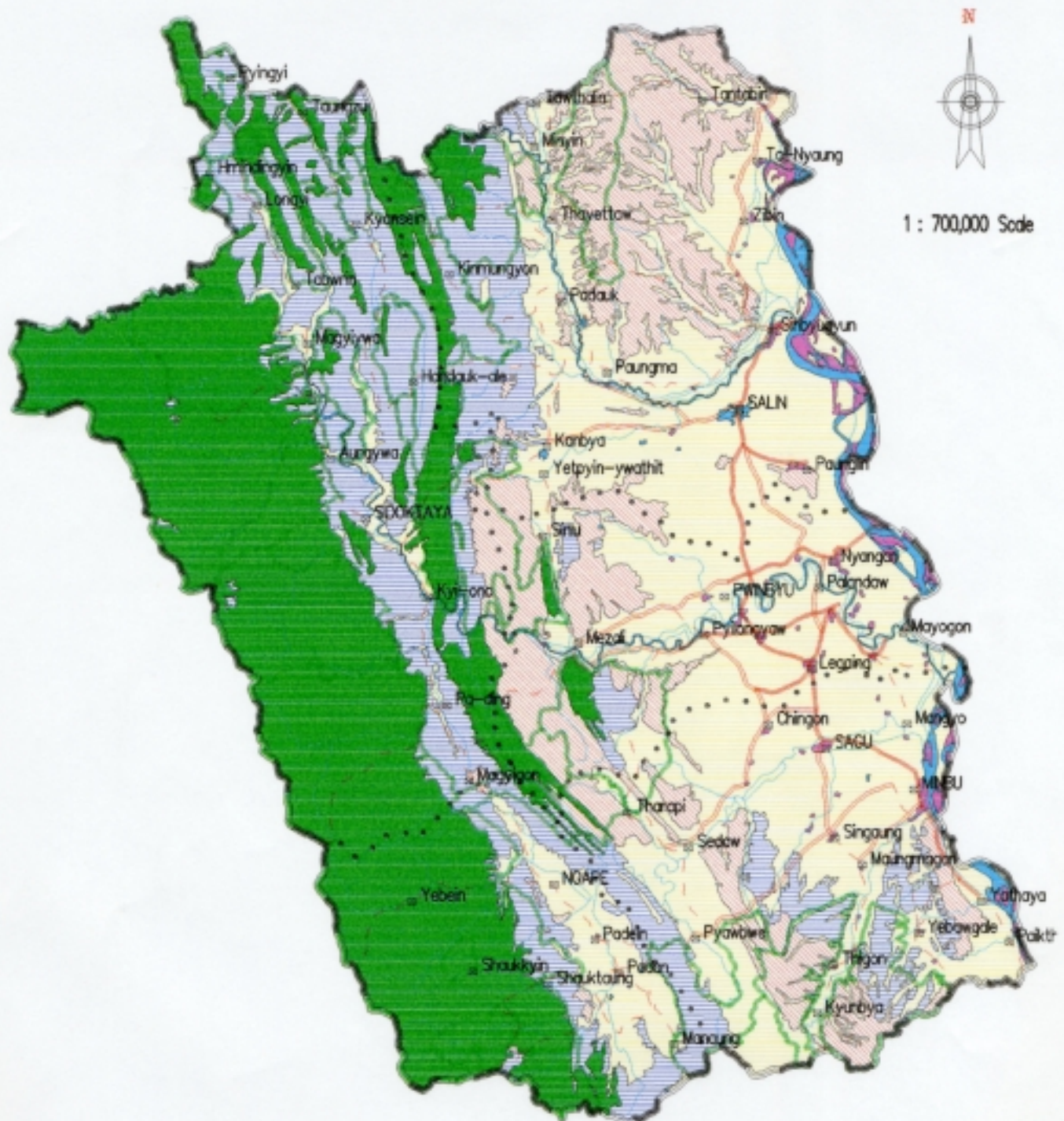
LEGEND

- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Railway
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream








Remote Sensing and GIS Section
Planning and Statistics Division, Forest Department

MINBU DISTRICT

LAND USE AND LAND COVER MAP



LEGEND

- | | |
|---|--|
| Good Forest |  District Boundary |
| Degraded Forest |  Township Boundary |
| Shifting Cultivation |  Forest Reserve Boundary |
| Agriculture |  Main Road |
| Water |  Secondary Road |
| Other |  Cart-Tract and Foot-Path |
| |  Stream |

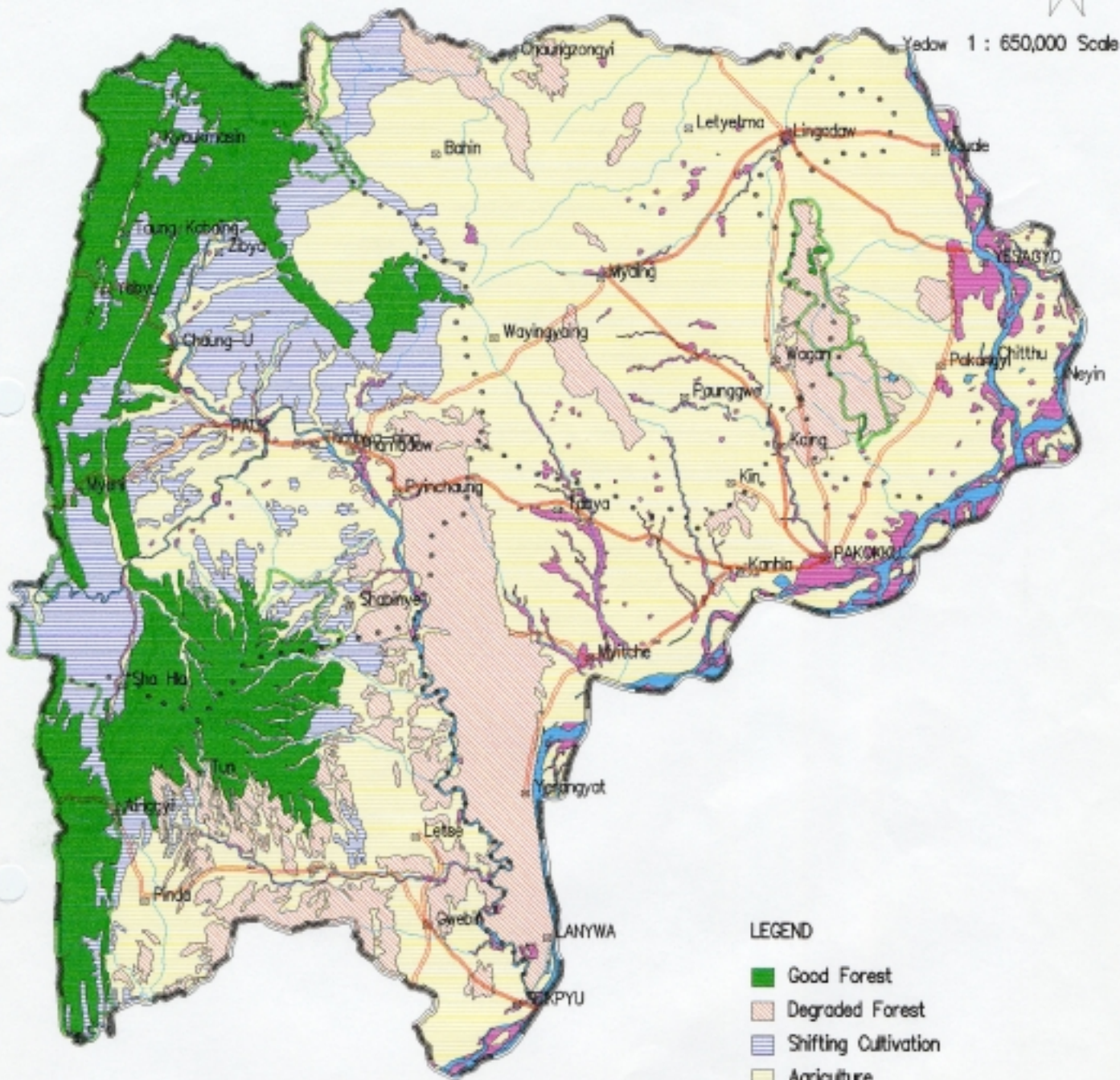
Remote Sensing and GIS Section

Planning and Statistics Division, Forest Department

PAKOKKU DISTRICT LAND USE AND LAND COVER MAP



Scale 1 : 650,000



LEGEND

- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream

Remote Sensing and GIS Section

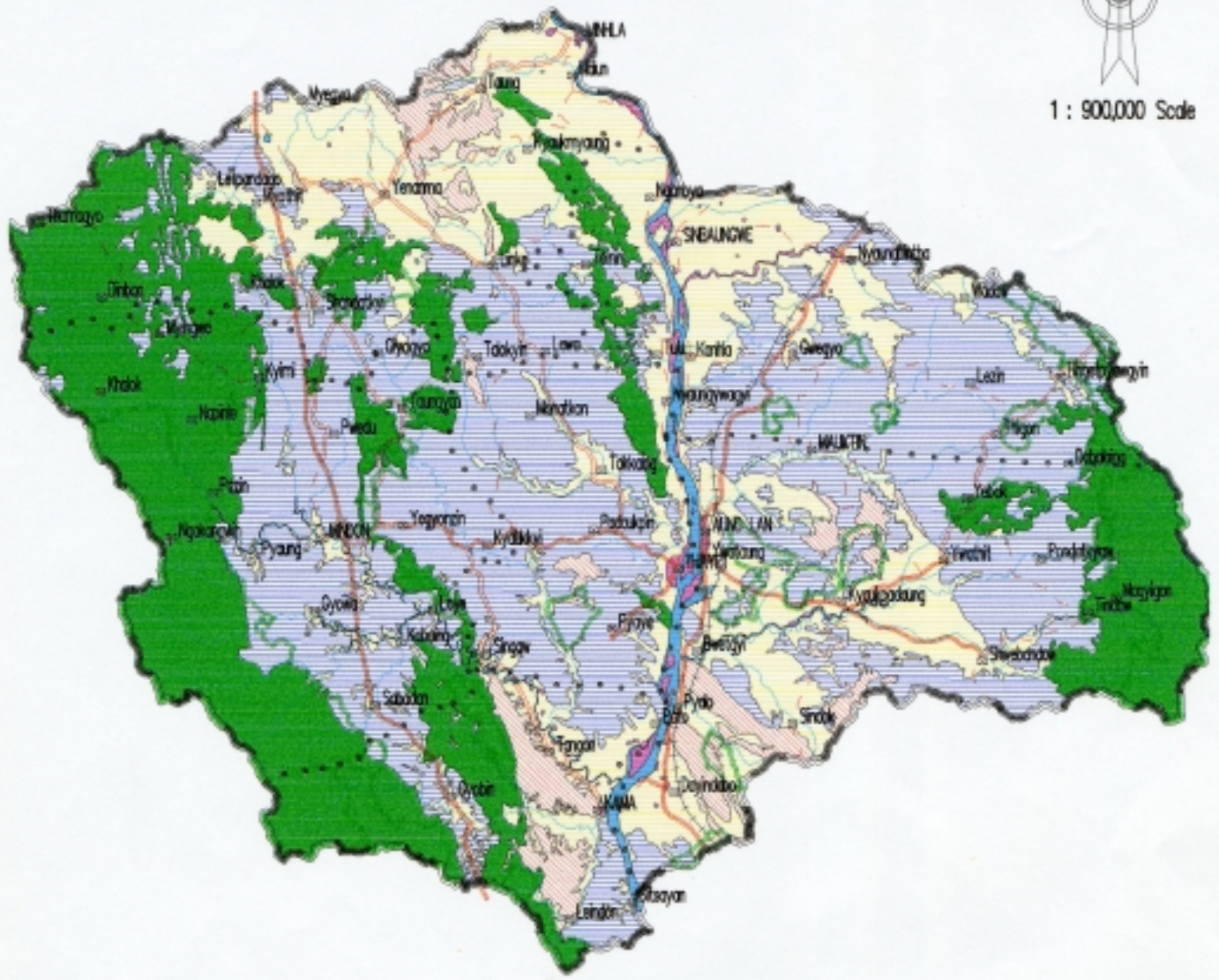
Planning and Statistics Division, Forest Department

THAYET DISTRICT

LAND USE AND LAND COVER MAP



1 : 900,000 Scale



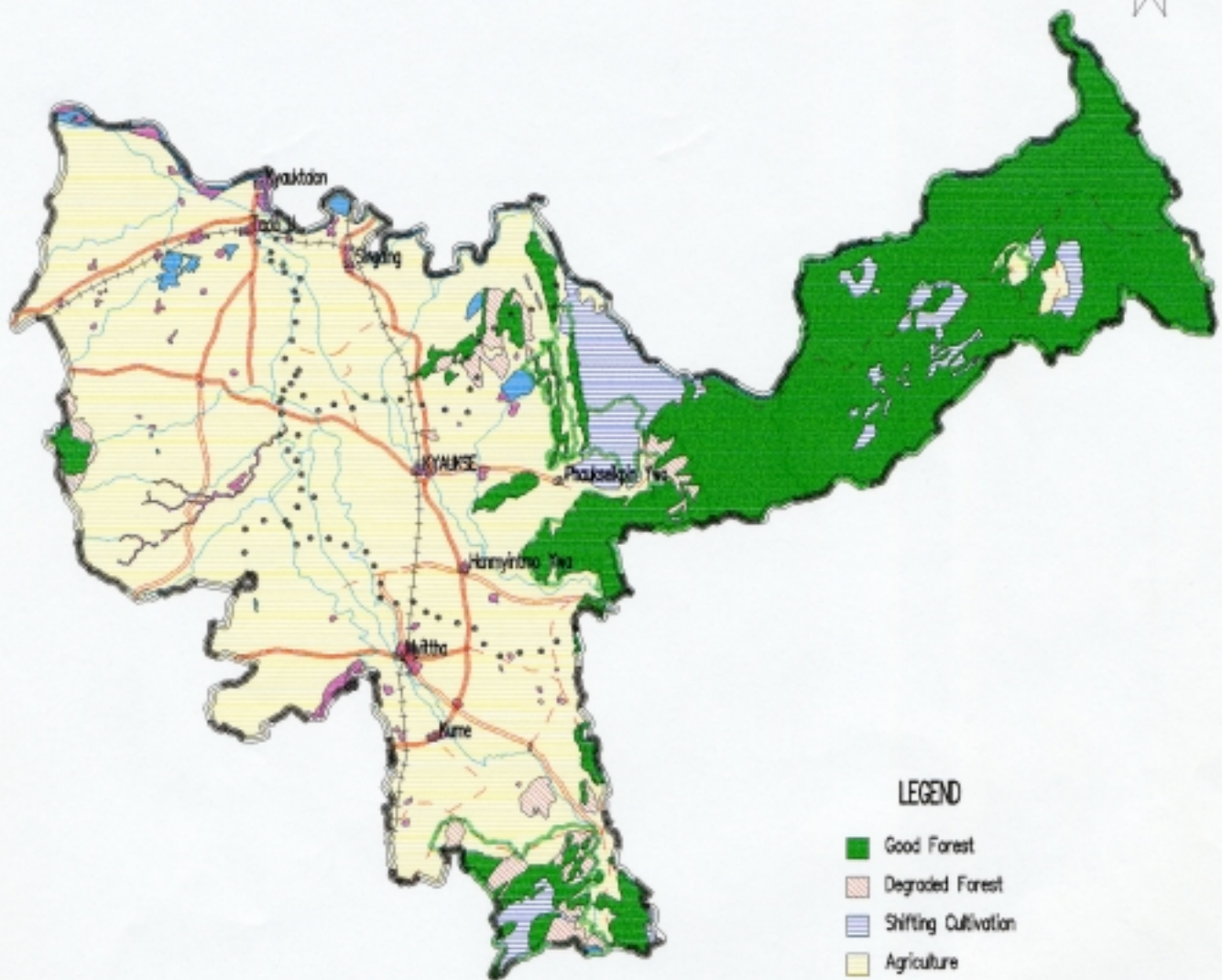
LEGEND

- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Railway
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream

Remote Sensing and GIS Section
 Planning and Statistics Division, Forest Department

KYAUKSE DISTRICT

LAND USE AND LAND COVER MAP



LEGEND

- Good Forest
- Degraded Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Railway
- Main Road
- Secondary Road
- Cart-Tract and Foot-Path
- Stream

1 : 700,000 Scale

Remote Sensing and GIS Section

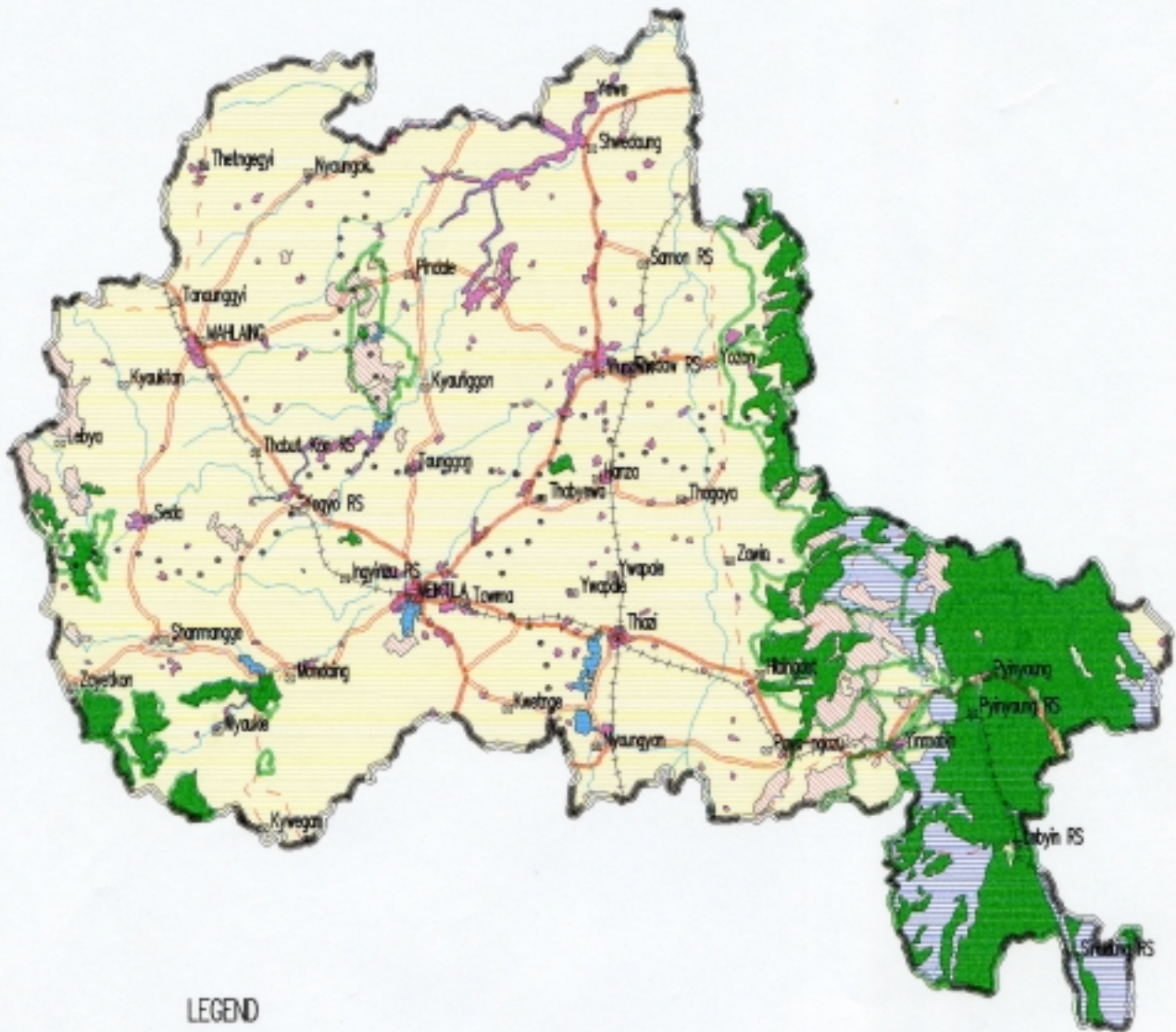
Planning and Statistics Division, Forest Department

MEIKTILA DISTRICT

LAND USE AND LAND COVER MAP



1 : 700,000 Scale



LEGEND

- Good Forest
- Shifting Cultivation
- Agriculture
- Water
- Other
- Degraded Forest
- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Railway
- Main Road
- Secondary Road
- Cart-Trail and Foot-Path
- Stream

Remote Sensing and GIS Section
Planning and Statistics Division, Forest Department

MYINGYAN DISTRICT

LAND USE AND LAND COVER MAP

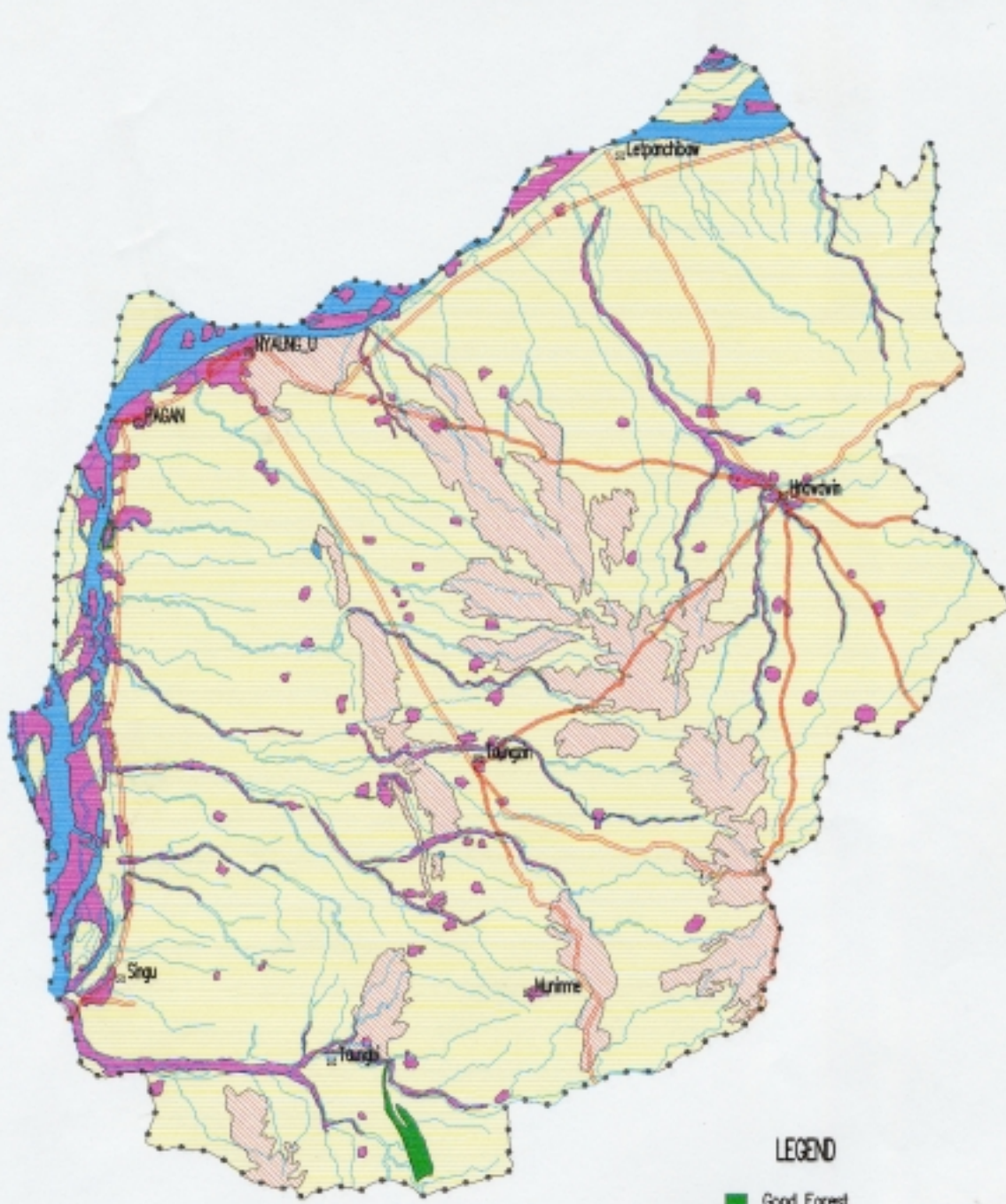


Remote Sensing and GIS Section

Planning and Statistics Division, Forest Department

NYAUNG-U DISTRICT

LAND USE AND LAND COVER MAP



LEGEND

- Good Forest
- Degraded Forest
- Agriculture
- Water
- Other

- District Boundary
- Township Boundary
- Forest Reserve Boundary
- Main Road
- Secondary Road
- Stream

Remote Sensing and GIS Section
 Planning and Statistics Division, Forest Department



3 関連法令等

3. 関連法令等

3-1. 森林政策

Myanmar Forest Policy

1995

Policy Statement

ミャンマーの国家的社会経済の発展、生態系の調和、環境保全における林業分野の貢献度の重要性から、森林政策の見直しを行った。

次の6事項がもっとも重要な課題としてあげられている

- Protection : 土壌、水資源、野生動物、種の多様性、及び環境の保護すること
- Sustainability : 現在と将来にわたって森林資源からもたらされる恩恵を持続させること
- Basic Needs : 燃料、用材、食料、及び休養の場等国民の需要に応えること
- Efficiency : 森林資源のもつ経済的価値を、社会環境及び自然環境を壊すことなく、効率的な利用を図ること
- Participation : 森林の保全と利用に一般大衆の参加を図ること
- Public Awareness : 国民生活の福利向上と社会経済的発展に欠かせない森林資源の持つ機能と重要性を喚起すること

各項目の説明のうち研修と住民参加に関連した事項は6頁の3.8. Institutional Strengthening と7頁の3.10. People's Participation and Public Awareness などにその対応が述べられている。

3.3. Forest Regeneration and Afforestation

目的 : 天然林の生産性の向上、荒廃地への多目的早生樹種の造林、民間需要への対応、環境の保全のため、堅実な林業計画を遂行する

対応 : 荒廃地の緑化と地域住民の需要に応えるため、年間20,000haの植林を行う

3.8. Institutional Strengthening

目的 : 対応の変化に応じた実施機構の改革と強化を行う

対応 : 質的量的人材開発を確かなものとする

人材開発を可能にするため教育、研修訓練機関の強化を図る

適正で有能な人材を実施機構にまんべんなく配置する

機構改革により人事管理と人材養成を図り、優秀な職員を適材適所で配置する

3.10. People's Participation and Public Awareness

目的：林業分野開発の一般大衆の参加を求め、住民主導の開発を目指すとともに、森林保全保護の意識を高揚する

対応：森林局の普及能力を強化し、林業計画への一般大衆の参加を推し進める方策を開発する

持続的な林業開発がもたらす環境的、社会経済的便益を明示して広報する

地域問題解決のため地域共有林の造成が有効であることを広報する

一般大衆が地域開発計画を容易に受け入れるようにするため、利益配分の方法も含めその展示を行う

COPY



UNION OF MYANMAR

MYANMAR FOREST POLICY

1995

POLICY STATEMENT

MINISTRY OF FORESTRY

Yangon, 1995

MYANMAR FOREST POLICY 1995 POLICY STATEMENT

1. PREAMBLE

In view of the importance of the Myanmar Forestry Sector in enhancing national socio-economic development, and ensuring ecological balance and environmental stability, the Myanmar Forest Policy has been formulated in a holistic and balanced manner within the overall context of the environment and sustainable development taking full cognizance of the forestry principles adopted at the UNCED.

2. IMPERATIVES

The Policy has identified six imperatives which the Government must give the highest priority in order to achieve broader national goals and objectives. These are:

- 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 and recreation;
- D. EFFICIENCY to harness, in the socio-environmentally friendly manner, the full economic potential of the forest resources;
- 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.

3. OBJECTIVES AND POLICY MEASURES

In this context, the Myanmar Forest Policy provides for, inter alia:

3.1. LAND USE :

Objectives

- To evolve a system of balanced and complimentary land use under which land is only diverted to uses where it would produce most and deteriorate least;
- To phase out existing practices which are incompatible with sound land management and which support adverse environmental consequences;
- To discourage shifting cultivation practices causing extensive damage to forest through adoption of improved practices for better food production and a better quality of life for shifting cultivators.

Policy Measures

- Establish a land use advisory board with responsibilities to oversee and coordinate overall land utilization in the country;
- Regularize existing areas under shifting cultivation and encroachment in forest lands, and fully enforce the provisions of the Forestry Act in the eviction of any future encroachment and other forms of forest land misuse;
- Base rehabilitation of shifting cultivation areas not only on extension and welfare but also on investment and development.

3.2. PROTECTION AND MANAGEMENT :

Objectives

- To dedicate unclassed and protected public forest areas strategically located in the country to extend existing areas under forest reserves and protected area system in order to ensure; sustainable forest management with the object of maximizing social and environmental benefits for the country and its population; restoration of ecological balance and bio-diversity conservation as well as checking soil erosion and the denudation of river catchment; to safeguard water supplies and the premature salutation of reservoirs;
- To strengthen wild-life management through establishment of a network of national parks, wild-life reserves and sanctuaries.

Policy Measures

- Gazette 30% of the total land area of the country as reserve forest and 5% under protected area system;
- Define and establish safe minimum standards for environmental conservation in respect of all development activities and make Environmental Impact Assessment (E.I.A.) of development projects obligatory with related rules/regulations formulated and enforced;
- Introduce a system of environment pricing based on the "polluter pays" principle to compensate for environmental and ecological degradation;
- Prohibit/regulate mining on all forest lands.

3.3. FOREST REGENERATION AND AFFORESTATION :

Objective

- To pursue sound programme of forest development through regeneration and rehabilitation operations to optimize productivity from natural forest and to encourage planting of fast growing multi-purpose tree species in degraded forest lands, rebuilding forest and farm lands to meet industrial and domestic demand, as well as restore ecological balance.

Policy Measures

- Establish plantation cooperatives and provide institutional finance for establishment of man-made forests on degraded/denuded lands;
- Recognize that plantation forestry is not a substitute for natural forest management. A combination of both should constitute the most efficient use of forest resource base in the country;
- Reforest an area of 20,000 hectares annually to restore degraded lands and meet rural needs.

3.4. FOREST INDUSTRY, MARKETING AND TRADE :

Objectives

- To promote efficient harvesting and sustainable utilization of all forms of forest produce; upgrade and diversify appropriate wood-based industries with determined capacities commensurate with the resource flow to achieve high level of efficiency and to minimize waste of forest resources; promote

the export of value added forest products and encourage use of under utilized species;

- To ensure that domestic requirement of all forms of processed timber is adequately met through domestic processing;
- To secure a sizable share of overseas wood product market through aggressive marketing including promotional measures;
- To develop and exploit the potential of non-wood forest products for meeting local needs and supporting small-scale rural forest based industries for providing employment and off farm income to the rural population.

Policy Measures

Forest Industry

- Ensure a rational balance between national forest industry processing capacity and resource availability;
- Establish an incentive structure for forest-based industries for improved conversion efficiency, minimizing log wastage, residue utilization and modernization of wood processing technology;
- Bring the establishment of integrated processing under the purview of existing legislation to ensure horizontal and vertical integration of the wood-processing industry;
- Introduce forest product grading rules requiring all civil works funded by the Government to use only the lumber that has been graded in accordance with these rules;
- Entrust MTE the responsibility for only harvesting, marketing and trade of forest products on a commission basis;
- Assign MTE an autonomous status so that it runs on a business enterprise basis with capability to make on the spot decisions;
- Privatize processing units owned by MTE for increasing efficiency and improved returns over investment. Phase out obsolete and outdated sawmills;
- Liberalize foreign exchange facilities for processing industries to facilitate import of equipment/spare parts and operating supplies needed for efficiency in conversion and utilization of timber;
- Recognize the socio-economic importance of non-wood forest products in the list of priorities for forest development.

Pricing

- Abolish concessional pricing of forest produce;
- Abolish price controls except for consideration of social equity;

Marketing and Trade

- Impose an export assessment tax inversely proportional to the value added content of the forest product in order to offset manipulation in tender sales as well as support the development of value-added industries;
- Commercialize all forest produce in an appropriately phased manner;
- Liberalize trade and tariff policies and ensure reasonable stability of the declared policies;
- Promote market for timber and timber products through overseas trade offices and incentives;
- Organize official tours to all potential markets so as to establish contact with importers, agents and end-users as well as to attract investors including joint ventures for downstream manufacturing.

3.5. FOREST RESEARCH :

Objectives

- To determine the dynamics and functions of the components of natural forest and plantations of both indigenous and exotic species for the effective conservation and management of the forest resources to optimize productivity;
- To promote problem-oriented forestry/forest products and socio-economic research to support sustainable forestry development.

Policy Measures

- Recognize the pivotal role of forestry and forest product research in support of successful forest conservation and development programmes;
- Assign the Forest Research Institute an independent status with its own staff of dedicated researchers;
- Establish a flexible complementing system for promotion of research staff in their field of specialization to ensure continuity of research.

3.6. FORESTRY PLANNING :

Objective

- To initiate development planning for the forestry sector to achieve sustainable development in resource production, processing and marketing, bio-diversity conservation and restoration of ecological balance.

Policy Measures

- Establish an adequate system of planning and policy analyses in the Ministry and Department of Forest;
- Prepare a 10-year perspective plan for providing general guidelines and broad targets for sectoral development.

3.7. INTERSECTORAL COORDINATION :

Objective

- To establish an adequate and effective coordination/cooperation among all related sectors of the economy having influence on forestry including international agencies and institutions concerned with forestry development.

Policy Measures

- Establish a forest policy advisory board chaired by the Minister of Forestry to review forest policy implementation and establish coordination with other sectors including harmonization at policy interfaces.

3.8. INSTITUTIONAL STRENGTHENING :

Objective

- To ensure that the basic goals of forestry, environmental protection and increased economic benefits to be derived from forest and forestry are reflected in the institutional structure; and the forestry institutions strengthened in qualitative and quantitative terms to meet the changing needs.

Policy Measures

- Ensure human resource development both quantitatively and qualitatively;
- Strengthen educational and training facilities to cater for the above;
- Allocate appropriately professional, technical and vocational staff at various levels for efficient functioning and development of the forestry sector;
- Institute human resource management and manpower development through reviewing the organizational structure, and staffing essentially with professionally committed personnel, and introducing incentive mechanism and work performance audit to upgrade professional standards and national capacity of public forestry institutions.

3.9. BUDGET AND FINANCE :

Objective

- To maintain a level of funding and investment in the forestry sector, sufficient to achieve the goals and objectives of the national forest policy.

Policy Measures

- Earmark at least 25% of the earning from forests for reforestation and other forest development efforts;
- Increase investment in forest conservation and development and for supporting functions through the establishment of a forest development fund with appropriate participation of financial institutions and other donors to be operated with a high degree of autonomy.

3.10. PEOPLE'S PARTICIPATION AND PUBLIC AWARENESS :

Objective

- To enlist people's participation in forestry sector development activities in order to provide "people-based development" and also create public awareness and mass motivation for protection and conservation of forests.

Policy Measures

- Strengthen the extension capabilities of the Forest Department and develop mechanisms for greater public involvement in forestry programmes;

- Identify and publicize environmental, social and economic benefits of sustainable forestry development;
- Create an awareness of community forestry and significance of the problem it seek to address;
- Demonstrate the cost / benefits of community development programmes as also the mechanism for distribution of benefits to facilitate adoption of the programme by the people.

3-2. 森林法

Myanmar Forest Law

1992

ミャンマー政府は、森林及び林業をめぐる近年の状況の変化に対応するため、1902年に制定された森林法(The Forest Act)を全面的に見直し、新たに森林法1992年として制定した。

今回の調査に関連した条文等を列記する。なお全文及びその日本語訳は「国際民間協力の森造成促進事業、国別調査報告書(No.1)ミャンマー編、平成10年3月、国際緑化推進センター」参考資料1にあるので参照願いたい。

Chapter II Basic Principles

- 3.(c) to promote the sector of public co-operation
- 3.(d) to contribute towards the food, clothing and shelter needs of the public and for perpetual enjoyment of benefits
- 3.(h) to contribute towards the fuel requirement of the country

Chapter III Constitution of Reserved Forest and Declaration of Protected Public Forest

- 4.(b) local supply reserved forest
- 4.(c) watershed or catchment protection reserved forest
- 5.(e) conservation for sustainable production

Chapter V Establishment of Forest Plantation

- 13.(d) local supply plantation
- 13.(e) village firewood plantation
- 13.(f) other plantation
- 14.(b) any person or any organization has the right to carry out cultivation and maintenance of forest plantations
- 15.(a) firewood plantation established by the Forest Department for a certain period and then transferred to be maintained and used as village owned
- 15.(b) village-owned firewood plantation established, maintained and used by the village by collective labour

3-3. 共有林令

Myanmar

Community Forest Instructions

1995

森林法1992、Chapter XIII Miscellaneous 57 によりCommunity Forest造成推進のために公布された規則。

目次に記されているように1から21まで細かくその造成と運営について規定されている。以下に印象を記載する。

1. その名称とことばの定義においては、" Forestry operation in which the local community itself is involved, " と述べられており、Participationのレベルがやや低い印象を与える。
2. また " not large scale forest operation" と述べているが、実際に造成されている" community forest" をみると、ほとんどが50エーカー以上というもので、乾燥地で個人レベルで植えることが考慮されていないようだ。あくまでもグループで面積的にある程度の大きさを想定しており、管理運営の難しさを予想させる。
3. その他にも **permit, application, land lease, management plan, certificate, prohibitions, offenses and penalties** と細かく規定され、森林局の監視のもとに造成され、運営も管理されるという印象があり、社会林業の概念のなかで、住民が主体的な参加のもとに造成する共有林とは性格が異なるようで、誤解を避けるためにも「ミャンマー式共有林」とでも呼ぶことにして、区別する必要があると感じる。
4. 苗木の供給、植林地の提供と、森林局及び乾燥地緑化局が国家予算を使って造成することは高く評価される反面、予算的にいつまで続けていけるのか、国家主導では結局住民の自主的努力を促すことにはならないのではないか、といった危惧を拭うことは難しい。

Index

No.

1. Introduction
2. Definition
3. Areas where Community Forest can be established
4. Areas permitted for the establishment of Community Forest
5. Application for the establishment of Community Forest
6. Allotment of lands for the establishment of Community Forest
7. Duration of land lease for the establishment of Community Forest
8. Preparation of the management plan
9. Certificate for the establishment of Community Forest
10. Assistance from the Forest Department
11. Responsibilities and duties of the users' group
12. Prohibitions
13. Exploitation of forest products from the Community Forest
14. Funds
15. Price setting
16. Receipts
17. Permission for the transportation of the forest products from the Community Forest
18. Offenses and penalties
19. Records
20. Reports
21. Annexes

Community Forest Instructions

Introduction

1. For the purposes of supporting the economic development of the country and regaining environmental stability and addressing basic needs of local communities, active participation by the rural population is urgently needed to plant trees in barren lands and to reforest degraded areas. To achieve these goals **Community Forestry Instructions** are issued by the Forests Department prior to the formal enactment of the **Community Forestry Rules**.

Definition

2. **Community Forestry** means: Forestry operations in which the local community itself is involved; such as:
 - establishment of woodlots where there is insufficient fuelwood and other products for community use
 - Planting of trees and exploiting of forest products to obtain food supplies, consumer products and incomes at farmers level.
3. **Community Forestry** is neither a regional development forestry operations nor a large scale forest operations to import an industrial enterprise based on forest products.

Areas where Community Forest can be Established

4. Community forests can be established in the following areas:
 - (a) With the permission of the government, on reserved forest, unclassed forest, protected forest and land at the disposal of the State.
 - (b) Village owned fuelwood plantations established with the permission of the Director General of the Forest Department.
 - (c) With the permission of the owner (s) on private owned land or land owned by government organizations or non-government organizations

Areas Permitted for the Establishment of Community Forests

5. Community Forests will be permitted to be established in the following areas:
 - (a) In degraded natural forests where natural regeneration is difficult.
 - (b) In areas where there is potential to meet the local demand for forest products
 - (c) Areas suitable for the establishment of Community Forest and where there is need to conserve soil and water resources
 - (d) Natural forests which for various reasons should be managed by the local community
 - (e) Forest lands traditionally managed by the local community

Application for the Establishment of Community Forest

6. Households who would like to establish the Community Forestry shall form the users' group.
7. By consensus a management committee must be formed from the members of the users' group. This committee shall consist of a chairman, a secretary, and 3 members.
8. On behalf of the users' group, the chairman should apply to the District Forest Officer through the Township Forest Officer for the establishment of a Community Forest. (Annex 1)
9. If the application is accepted, the District Forest Officer will have to identify and specify the site for the establishment of the Community Forest. Details of action taken together with a map of the site will then be submitted by the District Forest Officer to the State/Divisional Forest Officer with copies forwarded to the Director General and the Director of the Planning and Statistics Division of the Forest Department. If the land applied for the establishment of the Community Forest is not under the management of the Forest Department, the District Forest Officer will need to undertake instructions from the District Forest Conservation Committee.
10. The Director General of the Forest Department will give authority to the District Forest Officers to act according to the Section 15 of the Forest Law.

Allotment of Lands for the Establishment of Community Forests

11. In the allotment of land to each household of members of the users' group, the District Forest Officer has to determine the size of the land to be allocated according to the climate, the type of soil, species to be planted and the degree of planting, tending and conservation that could be accorded.

Duration of Land Lease for the Establishment of Community Forest

12. The duration of land lease for the establishment of Community Forest is initially set for 30 years.
13. After the period of 30 years, the District Forest Officer will, with the approval of the Director General of the Forest Department, determine whether or not to extend the lease depending on the performance and the desire of the users' group.

Preparation of the Management Plan

14. Upon receiving the permission to establish a Community Forest, the users' group has to draw a management plan according to the form (annex 2) prescribed by the Forest Department, and forwarded to the District Forest Officer for confirmation. Advice of responsible forest officer will be taken in the preparation of the plan.

Certificate for the Establishment of Community Forest

15. After confirmation of the management plan, the District Forest Officer will issue the Certificate for the Establishment of Community Forest (Annex 3). Forest law, forest rules, instructions, and restrictions relevant to the Community Forest will be attached.
16. If the users' group is found to neglect or to violate the existing forest laws and forest acts, community forestry instructions, rules, regulations and prescriptions of the management plans, the District Forest Officer has the right to revoke the issue of the certificate.

Assistance from the forest Department

17. The Forest Department has to provide the following assistance to the users' group free of charge:
 - (a) Seeds and seedlings necessary for the establishment of Community Forest for the first rotation.
 - (b) Technical assistance and expertise necessary for the establishment, cultural operations management and utilization of Community Forest so as to attain sustainable development,

Responsibilities and Duties of the Users' Group

18. The duties and responsibilities of the users' group are as follows:
 - (a) Establishment of forest plantations in barren areas
 - (b) Where appropriate, natural regeneration method should be used in the rehabilitation of forested areas.
 - (c) Fire Protection
 - (d) To carry out the required cultural operations for the development of both plantations and natural forests.
 - (e) Protection against indiscriminate felling, girdling, pruning, resin tapping, removal of barks etc.
 - (f) Protect against mining of stones, sands, earth and metals in the designated area
 - (g) Prevention of illegal land use activities
 - (h) In conformity of the rules and regulations, systematic extraction and utilization of forest products so as to avoid wastage.
 - (i) Protection against soil erosion and environmental deterioration
 - (j) After the first rotation, the users' group shall, under the supervision of the Forest Department, engage in site preparations, seed collection, sowing, planting and tending operations.
 - (k) Implementing activities as described in the management plan

Prohibitions

19. No members of the users' group shall engage in the following activities
 - (a) Activities not prescribed in the management plan of the Community Forest
 - (b) Apart from inheritance, selling or renting of the Community Forest
 - (c) Metal mining and other activities that would cause forest degradation
 - (d) Construction of undesirable houses or sheds for the conservation of the Community Forest
 - (e) Apart from Agroforestry, use of land allotted for community forest for gardening or shifting cultivation

Exploitation of Forest Products from Community Forest

20. User's group can exploit the forest products of the Community Forest in accordance with the prescription of the management plan
21. No tax shall be levied on the users' group or members of the users' group concerning the forest products exploited for personal use
22. Surplus forest products can be sold to non members of the village at reasonable prices. Taxation shall be exempted from the sale of these products
23. The users' group can market the surplus forest products to areas outside the village
24. For marketing of the forest products to areas outside the village, tax shall be levied by the Forest Department at specified rates
25. The users' group will use the incomes mainly for the implementation of the management plan and for the development of the Community Forest
26. Only surplus incomes can be used for social welfare and economical development of members of the users' group in line with the wish of the members
27. The users' group can utilize the forest products of the Community Forest and surplus cash to develop business enterprises that produce value added products

Funds

28. The fund of the users' group will be managed as follows:
 - (a) The secretary of the management committee will keep a detailed account on particulars pertaining to the funds.

- (b) The secretary can, with the approval of the management committee, keep a certain amount of money in hand. Funds excess of that amount shall be kept in the bank or in a secure place.
- (c) The bank account must be opened jointly by the chairman and the secretary.
- (d) The secretary must submit the particulars of the financial accounts at least once a year to the users' group.

Price Setting

- 29. The users' group can freely sell the products of the Community Forests at current market prices.

Receipts

- 30. For all the forest products sold from the Community Forest, the users' group shall issue receipts. For the products that are to be transported to areas outside the township, a set of three receipts would have to be prepared. One receipt will be issued to the buyer, another submitted to the Township Forest officer and the third to be kept with the management committee. For forest products that are to be transported within the township, a set of two receipts must be prepared. One will be issued to the buyer and the other be retained by the management committee.

Permission for Transportation of Forest Products from the Community Forests

- 31. Forest products from the community Forest can be transported within the township with the receipt of the users' group.
- 32. Forest products of the Community Forest that are to be transported to areas outside the township and within the country need a removal pass in accordance with forest law section 23. They must not be transported together with forest products obtained from other sources.

Offenses and Penalties

- 33. Users' group must adhere to the directive and instructions issued for the Community Forest, forest laws, regulations and instructions periodically issued by the Forest Department.
- 34. Violation of the above mentioned laws, directives, regulations and instructions can lead to legal actions which include the termination of the Community Forestry Enterprise.
- 35. Any violation of forest law and forest act will result in punishment in accordance to the terms mentioned there in.

Records

36. The secretary of the management committee will has to keep a detailed record concerning planting, tending and production activities in forms attached to the management plan.
37. The Township Forest Officer, and the District Forest Officer will inspect the Community Forest and its records as conditions permit. Instructions and corrections are to be provided when they are deemed to be necessary.

Report

38. At the end of the budget year, the management committee of the users' group must submit a progress report to the District Forest Officer through the Township Forest Officer within the period of one month.
39. The District Forest Officer shall submit the progress report of the users' group together with his comments and recommendations to the State/ Divisional Forest officer within two months after the end of the budget year. A true copy will be forwarded to the Director General and the Director of the Planning and Statistics section of the Forest Department.

Dr. Kyaw Tint
Director General
Forest Department

Government of the Union of Myanmar
Ministry of Forestry
Forest Department

Application for the Establishment of the Community Forest

Through the Township Forest Officer of ----- Township

To

The District Forest Officer

Ref.No.

----- District

Dated.

----- State/ Division

Sir,

1. Users' group mentioned in paragraph 2 from----- Township, ----- Village comprising of () households, hereby apply for the establishment of the Community Forest in the following forest land in accordance with the announcement made by the Director General of the Forest Department. Please find the enclosed map.

- | | | | |
|-----|-------------------------|-------|-------|
| (a) | Township | ----- | > |
| (b) | Village | ----- | |
| (c) | Name of forest/location | ----- | |
| (d) | Boundary | East | ----- |
| | | West | ----- |
| | | South | ----- |
| | | North | ----- |
| (e) | Area | ----- | |
| (f) | Type of forest | ----- | |
| | Type of Vegetation | ----- | |
| (g) | Land ownership | ----- | |

2. Members of the users' group are as follows:

<u>No.</u>	<u>Name</u>	<u>Father's Name</u>	<u>NRC. No.</u>	<u>Signature</u>
1.				
2.				
3.				
4.				
5.				

3. If it is approved, users' group hereby declare to follow the community forestry rules, regulations and instructions and forest laws and acts issued, and to strive for the long term benefit of the village populace and the development of the Community Forest.

Signature of the chairman of the users' group -----
 Name of the chairmen of the users' group -----
 Date -----

Management Plan for the Community Forest

Table of Contents

1. Introduction
2. Objective
3. Location and area
4. Climate (temperature, rainfall)
5. Topography
6. Soil type
7. Conditions of the present vegetation
8. Afforestation
 - (If for new forest plantation)
 - 8.1 Establishment of nursery
 - 8.2 Site preparation
 - 8.3 Establishment of plantation
 - 8.4 Weeding
 - 8.5 Fire Protection
 - 8.6 Cultural method (thinning, pruning, coppicing etc.)
 - 8.7 Rotation
 - 8.8 Felling
 - 8.9 Distribution (If for the conservation of existing forest)
 - 8.1 Preparation of stock map and management map
 - 8.2 Tending before rest period
 - 8.3 Forest establishment in the renumeration area
 - (According to methods employed in the establishment of new forest plantation)
 - 8.4 Cultural methods
 - 8.5 Felling
 - 8.6 Distribution
9. Conclusion
10. Annexes

Government of the Union of Myanmar
Ministry of Forestry
Forest Department
Certificate for the Establishment of Community Forest

U/Daw -----

Chairman

-----Users' group

-----Village

-----Township

-----District -----State/Division

1. I hereby authorize you to establish a Community Forest in the following location according to the forest law-----forest act----- and Community Forestry rules and regulations. Members will be under the management of the users' group mentioned in paragraph 2. This document is issued for the complementation of the management plan confirmed on -----
 - (a) Name of village forest and location-----
 - (b) Boundary-----
 - (c) Area -----

2. Members of the users' group are as follows:

<u>No.</u>	<u>Name</u>	<u>Father's Name</u>	<u>NRC.No.</u>	<u>Signature</u>
1.				
2.				
3.				
4.				
5.				

Certifying Officer

Signature
Name
Designation
Date

Community Forestry Progress Report

Table of Contents

1. Introduction
2. Objective
3. Name, location and area
4. Natural Forest
 - Area
 - Tree species present
 - Cultural techniques, progress and target
 - Assessment of the condition of the forest
- Forest Plantation
 - Area (According to species)
 - Progress and Target
 - Assessment of the condition of plantation and survival percent
 - Average height, girth and volume
5. Production of timber and forest products
6. Distribution of timber and forest products
 - Within the group (amount)
 - Within the village (amount and income)
 - Outside the village (amount and income)
 - Summary of income and expenditure
7. Conditions of the users' group and its members
8. Miscellaneous
9. Conclusion