

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。

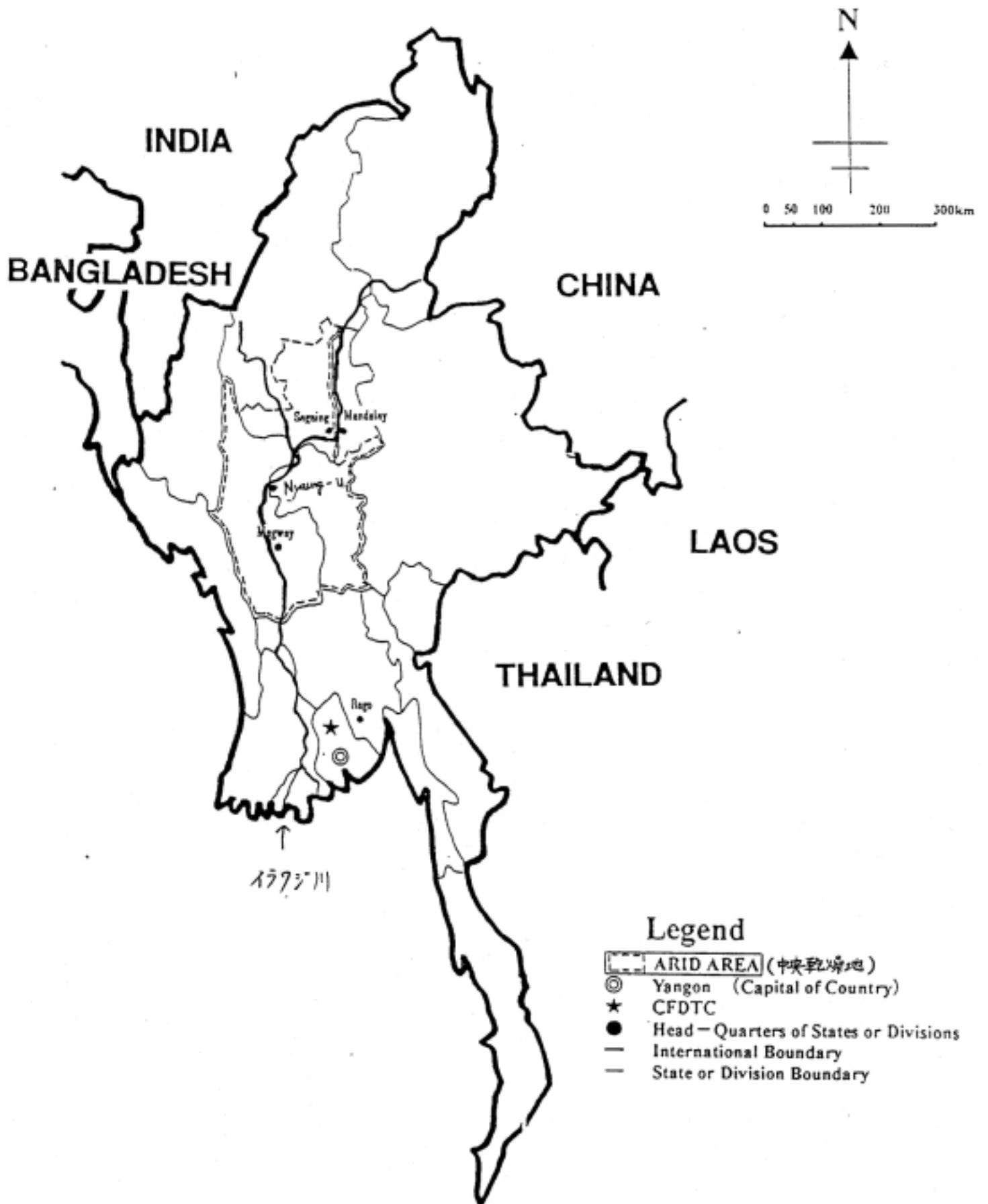
今回の調査結果が本アフターケア協力実施の指針となるとともに、アフターケア協力の実施が今後の両国の友好・親善の一層の発展に資することを期待いたします。

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



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

4 関連機関

4. 関連機関

4-1. 林業大学

Institute of Forestry
Ministry of Forestry, Myanmar

所在地 : Yezin, Pinmanaa District, Mandalay Division, Myanmar

1992年に農林業大学林学部から林学単科大学に格上げされ、同時に教育省から林業省に移管された。大学の分散という政府の方針のもとに実施された変更である。近年の変化としては、1995年より学年就学定員50人のうち25%までを女性枠として割り当てることになり、1996年には12名、1997年には14名、1998年には12名の女性が入学して林学を学んでいる。遠隔僻地という林業における就業環境の特殊性を考慮して、1998年になり女性定員枠の見直しがあり、1999年からは10%程度（5名程度）に減少される。また同じく1996年には、これまでの就学年数6年を見直し、5年間とした。同時に修士課程を新設している。国内の大学が政治的な理由から閉鎖されて2年になるが、時折学生を呼び戻して短期の講習を行い、試験を実施しているようである。

学長の認識としては、Institute of Forestryは高等教育の場、Forest SchoolはVocational trainingとして下級職員の教育の場、CFDTCは対象者のレベルも広く継続的な教育の場として、それぞれの機能を区別している。

次頁以下に講義内容を学年別に記載しているが、普及に関する講義は設定されていない。

Subjects in the course of study and in the examination for the B. Sc. degree

hours per week

No.	Subject	Theory	Practice	Tutorial	Total
First year					
1-1	English	2	-	2	4
1-2	Myanmar	1	-	2	3
1-3	Botany	2	2	-	4
1-4	Mathematics	2	-	1	3
1-5	Physics	2	2	-	4
1-6	Chemistry	2	2	-	4
1-7	Zoology	2	2	-	4
	Total	13	8	5	26
Second year					
2-1	English	2	-	2	4
2-2	Myanmar	1	-	2	3
2-3	Botany	2	2	-	4
2-4	Mathematics	2	-	1	3
2-5	Physics	2	2	-	4
2-6	Chemistry	2	2	-	4
2-7	Zoology	2	2	-	4
	Total	13	8	5	26
Third year					
3-1	English	2	-	2	4
3-2	Dendrology	3	1	-	4
3-3	Entomology	2	2	-	4
3-4	Geology	2	2	-	4
3-5	Soil Science & Ecology	2	2	-	4
3-6	Silviculture & Meteorology	4	-	-	4
3-7	Protection	2	-	2	4
	Total	17	7	4	28

No.	Subject	Theory	Practice	Tutorial	Total
Fourth year					
4-1	Mycology & Pathology	3	2	-	5
4-2	Genetics & Tree Breeding	2	-	-	2
4-3	Policy and Law	3	-	-	3
4-4	Silviculture & Nursery Practice	3	1	-	4
4-5	Survey and Drawing	2	2	-	4
4-6	Engineering	3	-	-	3
4-7	Statistics	3	2	-	5
	Total	19	7	0	26
Fifth year					
5-1	Mensuration	2	2	-	4
5-2	Inventory & Aerophoto & Data Processing	3	1	-	4
5-3	Silviculture	3	-	-	3
5-4	Management I	4	-	-	4
5-5	Timber Harvesting	4	-	-	4
5-6	Utilization I	3	-	-	3
5-7	Wood Technology	2	2	-	4
	Total	21	5	0	26
Final year					
6-1	Management II	2	2	-	4
6-2	Silviculture	4	-	-	4
6-3	Economics	4	-	-	4
6-4	Marketing & Saw Milling	4	-	-	4
6-5	Utilization II	3	-	-	3
6-6	Wood Technology II	2	2	-	4
6-7	Pulp, Paper & Other Products	3	-	-	3
	Total	22	4	0	26
		hours per week			

4-2. 森林学校

Myanmar Forest School
Forest Department
Ministry of Forestry, Myanmar

所在地 : Pyin U Lwin, Mandalay District, Mandalay Division, Myanmar

開設年次は古く1898年まで溯る。森林局と国内の木材収獲を一手に担っているMyanmar Timber Enterprise (MTE) の新採用職員に対して、林業全般の教育を実施している講習所である。2年間の研修コースを設定しており、それぞれの学年に100人規模で研修生を受け入れている。前提は森林局の職員の Vocational Training であり、小人数でMTEの職員が含まれることもある。

講義課目一覧

1. Silviculture
2. Management
3. Survey
4. Administration
5. Engineering
6. Budget and account
7. Social forestry: community forest, income generation, etc.
8. Forest law
9. Botany
10. Utilization
11. Extraction

普及分野の講義は行われていない。Social Forestry の科目では、アプロプリ-リーとか林業技術に限った講義が行われており、普及手法に関連した知識は教えられていない。1998/99年度の年間予算は6.5million Kyatとのことで、ほぼCFDTCと同額となっている。

CFDTCとの区別として、CFDTCはrefresher course として最新技術の習得と知識の確認を行うところだとし、Forest School はacademicな基本技術の習得の場としている。

4-3. 林業研究所
Forest Research Institute
Forest Department
Ministry of Forestry, Myanmar

所在地 : Yezin, Pinmanaa District, Mandalay Division, Myanmar

ミャンマー国内唯一の林業研究機関である。これまでチークを主体にした産業造林が国内林業活動であったため、大規模造林のための樹種選定などに研究の重点が置かれてきた。社会林業分野、特に林業と住民生活、伝統的資源管理技術などの研究は今後の課題となっている。乾燥地造林技術については、樹種試験、土壌検定などが既に行われている。また薪炭林適性樹種試験なども行われており、試験研究の成果はCFDTCの訓練に活用できるものも多数あるのではないかと思われる。関連すると思われるResearch Paperの一覧を以下に示す。

Leaflet No. Title

- 11/82-83 Some Physical and Chemical Properties of Dry Zone Forest Soils
- 07/83-84 Fuel wood Out turn Study in Dry Zone
- 12/83-84 Some Physical and Chemical Properties of Dry Zone Forest Soils
- 03/85-86 Species Trial for Fuel wood Production
- 04/85-86 Soil-Site Requirements of Tree Species on Dry Zone Adverse Sites
- 05/85-86 A Preliminary Study on the Coppicing of *Eucalyptus camaldulensis* and *Eucalyptus grandis* during the First Growing Season Following Clear Cutting
- 14/85-86 Operation of a Portable Kiln and Use for the Investigation of Quality of Charcoal Produced from Some Fuel wood Species in Delta Area
- 03/86-87 An Assessment of Yield of *Eucalyptus camaldulensis* in Katha Forest Area
- 09/86-87 Studies of Energy Source from Different Types of One Stick Fuel wood Stove
- 02/87-88 Species Trial for Fuel wood Production (Part-2)
- 02/1991 Trial Planting of *Acacia senegal*, *Acacia auriculiformis* in the Central Dry Zone of Myanmar
- 05/91-92 Study on the Heat Utilization Efficiency of Improved Cook stoves
- 01/94-95 Rehabilitation of Valuable Natural Forests with Farmers Participation
- 04/94-95 Trial Planting of *Acacia holosericea* Species in the Central Dry Zone of Myanmar
- 05/94-95 The Effect on Different Refilling Methods of Site Preparation on Growth and Survival of *Eucalyptus camaldulensis* in the Central Dry Zone of Myanmar
- 02/95-96 The Properties and Utilization of Soil in Greening Project for the Nine Critical Districts of the Arid Zone of Central Myanmar (Part I)
- 03/1997 The Properties and Utilization of Soil in Greening Project for the Nine Critical Districts of the Arid Zone of Central Myanmar (Part II)

4-4. 森林局普及広報課
Forestry Extension Division
Forest Department
Ministry of Forestry, Myanmar

所在地：Insein, Yangon, Myanmar

1992年の森林法、1995年の森林政策と共有林令の施行など、近年林業分野の活動において住民参加と住民のための林業が大きく取り上げられる中、住民参加を推進するために森林局に新たにForestry Extension Division が1995年に創設された。

関連事項を添付資料1の目次番号と共に述べると以下のとおり。

2. 林業普及の定義、3. 普及の目的、4. 第一段階の活動、7. 林業普及課の遂行業務においては、啓蒙広報活動、住民参加促進、特に女性と若年層、代替え燃料と改良かまどの導入、社会林業の導入、薪炭林造成技術の紹介、環境保全への努力、林業普及員と一般住民の関係改善などがあげられている。

8. これまでの活動として列記されたものは、広報啓蒙活動が大部分であり、普及方針や普及体制作りなどは今後の課題となっている。

ミャンマー国内の林業普及活動は、森林局が全体の普及体制を作って行われているのではなく、個別のプロジェクト、主にFAO/UNDPが支援するHuman Development Initiativesのプロジェクトで、それぞれが対象地域の中でプロジェクト活動として、参加型普及手法を用いて行われている。過去のセミナー及びワークショップ等で普及体制の確立が必要であるといった指摘があるが、まだ現実のものとはなっていない。

**MINISTRY OF FORESTRY
FOREST DEPARTMENT**

Facts About Forestry Extension

By

U Ko Ko

Director

Forestry Extension Division

24th-28th February-1997

Contents

<u>No</u>	<u>Subject</u>	<u>Page</u>
1.	Introduction	1
2.	Definition of Forestry Extension	2
3.	Objectives of Forestry Extension	2
4.	Primary of Forestry Extension	3
5.	Important Sectors of Forestry Extension	5
6.	Establishment of the Forestry Extension Division, the Forest Department and its Organization Structure	6
7.	Jobs and Responsibilities of Forestry Extension Division	6
8.	Progress of Works Undertaken by Forestry Extension Division	7
9.	Conclusion	10
10.	Appendix (A)	11
11.	Appendix(B)	12
12.	References and selected reading	13

Facts about Forestry Extension

1. Introduction

All throughout the lengthy history of Myanmar, our forefathers carried out scientific undertakings on forests development and conservation. During Myanmar king's reign since 1752 an order was issued proclaiming teak as 'royal wood' and strict control has been imposed on cutting and logging. About one century later, the British rulers also maintained the same policies on forests. Gradually, forests of Myanmar were reconnected as reserved forests. The policies on forests were formulated centering on the existing forest principles and soon in 1902 the Myanmar Forests Act was promulgated. The Myanmar Forests Law was also enacted in 1992, and as this law includes facts on leasing forest land to villagers to establish village-owned firewood plantation and establishing private forest plantation, it covering the basic needs of the people, especially the rural population.

The Forest Department issued the Community Forestry Instructions in 1995. The Myanmar forest policy 1995, stresses the fact that with the cooperation by the public, the forests must be for the people.

Forest conservation and works have been carried out with the intention to be in harmony with people's needs and desires, and in the progressive transformation of forest sector by people's cooperation, people's welfare is seriously considered.

In accordance with the prevailing situations, as the success of the development works of the people's living standards inclusive of political, economic and social status depends on the people's cooperation, the staff of the Forest Department are working hard to achieve successes in forest conservation and development works as well as to uplift the morale of the people so as to bring some aspect of about prosperity. Together with the practical implementation of the forest development works, it is essential at the same time to educate, organize and agitate the people for their zealous participation. The Forestry Extension has been formulated in this pattern.

2. Definition of forestry extension.

Forestry extension means the organizational and educational measures for forests development tasks, which would raise the economic and social status of the people as a result of the endeavors of the staff of the Forest Department and the cooperation of the public.

In recent years a number of different terms have been used to describe the basic activities of forestry extension. The diversity of terms has not necessarily clarified the issues. The important point, however, is not the particular term used but the acceptance by those concerned of an attitude of approach to the matter. Forestry extension can be regarded as a process of integrating indigenous and derived knowledge, attitudes and skills to determine what is needed, how it can be done, what local cooperation and resources can be mobilized and what additional assistance is available and may be necessary to overcome particular obstacles. The term of forestry extension in which local people are directly and ^{willingly} (willinly) involved in forestry activities from which they will derive some recognisable benefits within a reasonable period of time.

The participation arises from some perceived needs or opportunities which the people have recognised as being sufficiently important to devote part of their time, energy and resources to accomplish the intended objectives. The emphasis is not on the accomplishment of specific national or commercial goals but on the recognition by the people of the part, forestry can play in conjunction with other rural activities in maintaining the environment, improving living standards and meeting specific needs for forest products. Extension should not be regarded simply as an efficient delivery system to get things done but as a catalyst to promote the establishment of an indigenous systems for accomplishing widely accepted aims.

3. Objectives of forestry extension

Objectives of forestry extension are as follow:

The statements of objectives of forestry extension may be in such simple forms as:

- To raise the public awareness to the importance of forests to their livelihood;
- Participation of people in forestry extension programmes,
- Introduction of social forestry;
- Creation of energy sources other than wood;
- Introduction of improved stoves as a means of reducing fuel consumption and hence in forest conservation;
- Participation of women and youth committees in forestry activities;
- To popularise the techniques to the fuel wood production and other forest produce and plantation establishment in rural areas;
- To seek assistance of rural population in restoration of the ecological balance;
- To establish a productive partnership in forestry extension programmes between local people and government officials.

4. Primary Tasks of Forestry Extension

The primary tasks are as follow:

(a) Mass communications and information distribution.

Forestry Extension is the process of constant communication to spread information, techniques and working methods among the public. In other words, the persons who are carrying out extension measures on forests are the ones who act as a bridge between the research institutes and the public. Thus effective means of communication should be constantly sought for better results and success.

In information distribution task, there are three primary routes: visual, audio and literature. In mass communication, educative paintings, posters, charts, cartoon and illustrations, pamphlets, literatures, poems, short stories, articles, show-rooms and exhibitions, educational programmes broadcast on Radio Myanmar and TV Myanmar are effective methods.

(b) **Conducting Training courses on techniques and methods for forestry extension.**

In conducting training courses, it must aim at the departmental personnel, rural public and those who would practise these new methods. The technical training courses will consist of lectures, field study, practical works, organization-discussion sessions and view-exchange sessions.

The organization-discussion sessions will consist of individual contacts, group contacts and mass contacts. The individual contacts can be very effective as discussion and education can be performed intimately.

The group contacts will have such benefits as information and new methods can be distributed orally, views can be exchanged, excursions can be made and practical methods can be demonstrated systematically.

Mass contacts is used when necessary to educate and organize the entire mass. It is achieved mainly through the various means of mass communication such as printed matter, broadcasts or audio-visual presentation.

(c) **Undertaking research works on Forestry Extension**

Conducting experimental research works on forest conservation and development, collecting data on techniques and findings, and compiling research papers are carried out at Forests Research Institute and other divisions as well. Analysing techniques, inventing practical methods and producing aid equipments are carried out in research works. For example, producing of less fuel-consuming stoves and conducting experiments on lesser known species.

(d) **Projects planning and policy formulation.**

Forest development works and policy, work plans and projects for forestry extension are carefully formulated and practiced.

(e) **Management and review**

For the success of the extension works, management and supervision should be carried out during the time of implementation and review and assessment should follow on the success and shortcomings of the finished work programmes.

5. Important sectors of Forestry Extension

(a) **Forests Development Sector**

For the development of forests, aims and objectives have been laid down and practiced as follows-

- (1) To increase the production and quality of timber and other forest produce
- (2) To reduce wastage
- (3) To create environmental stability
- (4) to be able to fairly enjoy the benefits of the forests by the people.

As a result of the implementation of extension measures, the spiritual social and material development of the people will be achieved. At the same time the development of forests will also be achieved.

(b) **Development of technique application sector.**

For the development of technique application sector, aims and objectives have been set and carried out as follow:

- (1) To be able to systematically utilize the forest resources by the people.

- (2) To be more aware of the value and importance of forests by the people.
- (3) To be aware of the effectiveness of the advanced forest management system and extension measures, and achievement of the environmental stability .
- (4) To be familiar with the effectiveness of the results of research works and new techniques in forest conservation and development works.

The more the modern techniques are applied forest resources are utilized systematically, the higher the social and economic standards of rural people will become.

The bridge laid by Forestry Extension Division between research department and practical users of the new techniques is shown on the Appendix(A).

6. Establishment of Forestry Extension Division and its Organization Structure.

In April 1995, Forestry Extension Division under the charge of a director has been established within the Forest Department at the central level.

The Division set up is permitted to be comprised of 12 officers and 132 other ranks, but until now the staff has not been fully recruited and tasks are being carried out with the current existing staff.

The organization structure of the Extension Division is shown in Appendix (B).

7. Jobs and Responsibilities of Forestry Extension Division.

The job and responsibilities of the Forestry Extension Division are as follow:

- (a) Setting down policies on matters concerning forestry extension planning and implementing projects and carrying out works of media and public relations.

- (b) For rural development, doing research on methods and techniques for the establishment and management of village-owned plantations and conservation of forest and land, water resources, in collaboration with other division within the Forest Department.
- (c) Conducting courses on extension education and producing necessary aid equipment for those courses.
- (d) Promoting people's awareness on the knowledge of forests and protection and preservation of environment by producing hand-out, novels, cartoons, articles and verses, casting radio and tele plays, and systematically producing and distributing leaflets, brochures and video and cassette tapes, and putting them on record properly.
- (e) As there have been widespread timber poaching and shifting cultivation, it is necessary to educate people on conservation of forests and to encourage terrace-farming in the place of shifting cultivation and demonstrate soil conservation methods at permanent cultivation areas.
- (f) Educating people to use plentiful use lesser-known species instead of precious woods like Teak, Pyin-ka-do and Pa-dauk.
- (g) In Myanmar, the needs for charcoal and fuel wood in townships and villages well surpass the production capacity of natural forests and thus villagers will be encouraged to grow self-sufficient fuel wood plantations in villages to prevent deforestation.
- (h) Enlightening people on the Section (5) of the Forest Law issued by the State Law and Order Restoration Council which allows establishing different types of plantations and encouraging them to form village-own fuel businessmen to establish fuel wood plantations with the permission of the Ministry of Forestry.

8. Situation on Progress of Works Undertaken by Forestry Extension

Division

Public education works being carried out by the Forestry Extension Division since its formation on April, 1995 are:

(a) **Educative pamphlets and brochures**

Published and distributed educative pamphlets concerning Tree Planting Month during July 1995 and 1996 and brochures on conservation of forests and environmental protection at show-rooms exhibited by the forest Department.

(b) **Hand-bills and wall posters**

Printed illustrated posters depicting slogans and mottos of the Forest Department and the poster with slogans of the Department and dispatched them to States and Divisions to be distributed among the public.

(c) **Billboards**

Samples for billboards to be erected at township, State and Division Forest Department offices and other suitable locations are prepared and distributed to act harmoniously.

(d) **Articles on Forestry**

Occasionally writing educative articles on forestry with other relevant information and statistics to be published in newspaper, magazines and other fitting publications.

(e) **Show-rooms and exhibitions**

The exhibitions of the Forest Department are held in States and Divisions with the aim to nurture and conserve forests, to protect environment and to disseminate information about the Forest Department.

(f) Filming videos for record

Recording on video of works done by the Forest Department, meetings, seminars, opening ceremonies, study tours and activities concerning forestry sector.

(g) Education stories

To broadly distribute knowledge about forests stories are made and telecast on Myanmar television programmes.

(h) Other programmes to educate people on forests

To distribute information and knowledge on forestry among public, programmes such as radio talk-shows, demonstration with songs and other interesting programmes are to be broadcasted.

(i) Facts and figures about forests

News about activities undertaken by the Forest Department is to be broadcasted on television for information of the people.

(j) Educative plays

As entertainment and to disseminate information and knowledge on forestry, plays educating forestry are made and staged at the National Theatre.

These are the works that have been accomplished so far.

Moreover, arrangements are underway to broadcast, with pictures and illustrations, points from laws and by-laws on forests that the public should be aware of and to follow are abide by them.

In building a modern nation, with the increase in population and factories and workshops, there are changes and developments as well as inevitable environmental pollution. That is why it is being arranged to broadcast from

Myanmar TV with discussion programmes to educate people for protection of air, water pollution and systematic disposal of discarded materials.

And then there are works concerning, development of forests, conservation of forests and protection of wildlife which have been recorded on video to be shown to the public for their awareness and education.

9. Conclusion

In particular, too often, the indigenous skills, social structure and detailed local knowledge of the people have been ignored in trying to transfer new skills of techniques to them. The justification for promoting a forestry extension program in an area may be a particular forest-related problem of a general lack of rural development. Many reasons may be advanced for the lack of such development these include

- The lack of adequate political commitment and power
- The lack of appropriate transport system
- Insufficient mobilisation and use of local resources
- The lack of application of existing technical knowledge;
- The lack of educational facilities
- Poor standard of health and

The lack of physical skill and the ability to overcome local obstacles. Extension is now being regarded as a much wider task of integrating indigenous and new skills or techniques, derived from study of research, into an overall framework of co-operation.

Forestry extension techniques cannot claim to deal with all these obstacles to develop but they can promote an interest in the close examination of local problems and a spirit of self-reliance in tackling them.

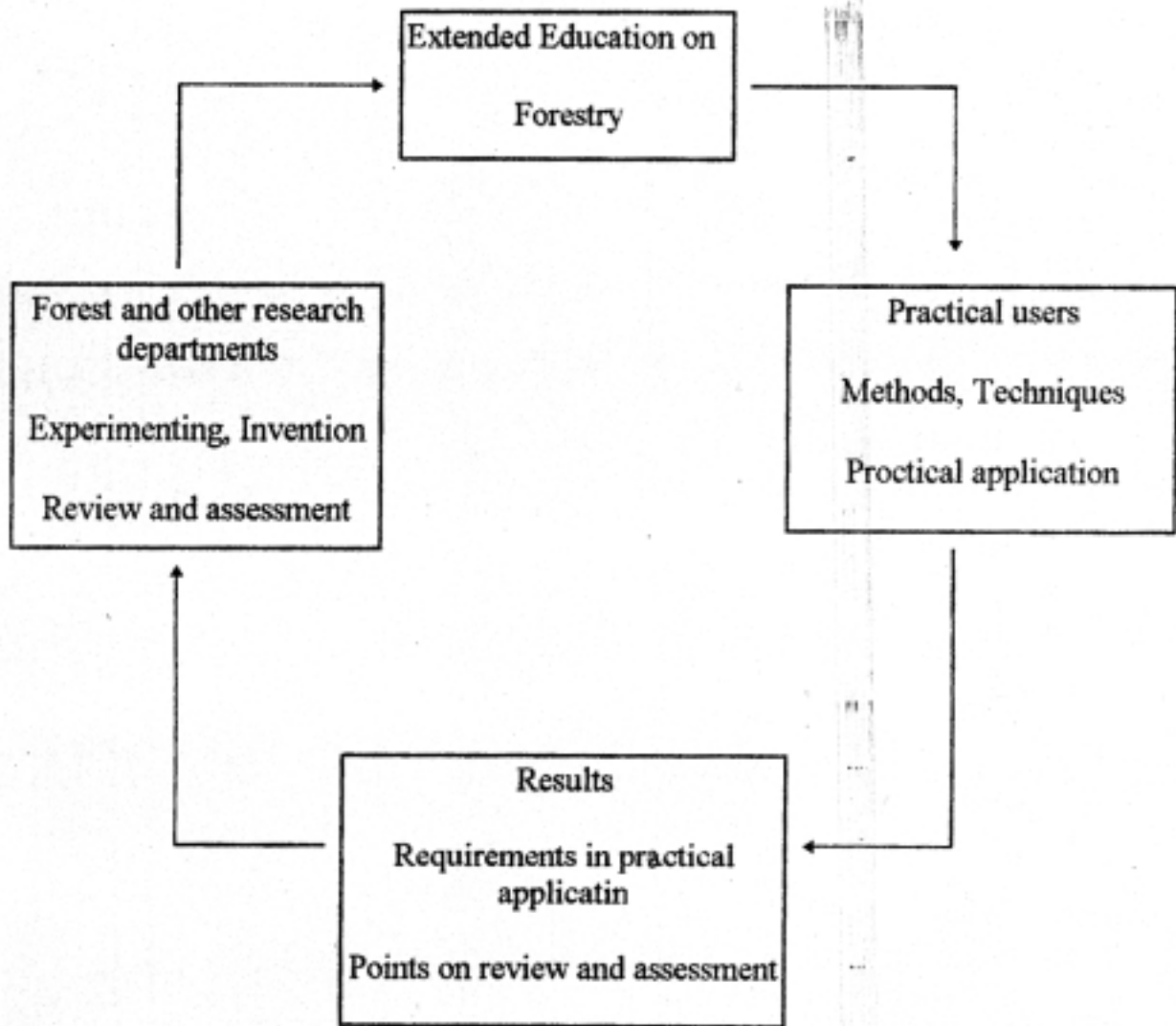
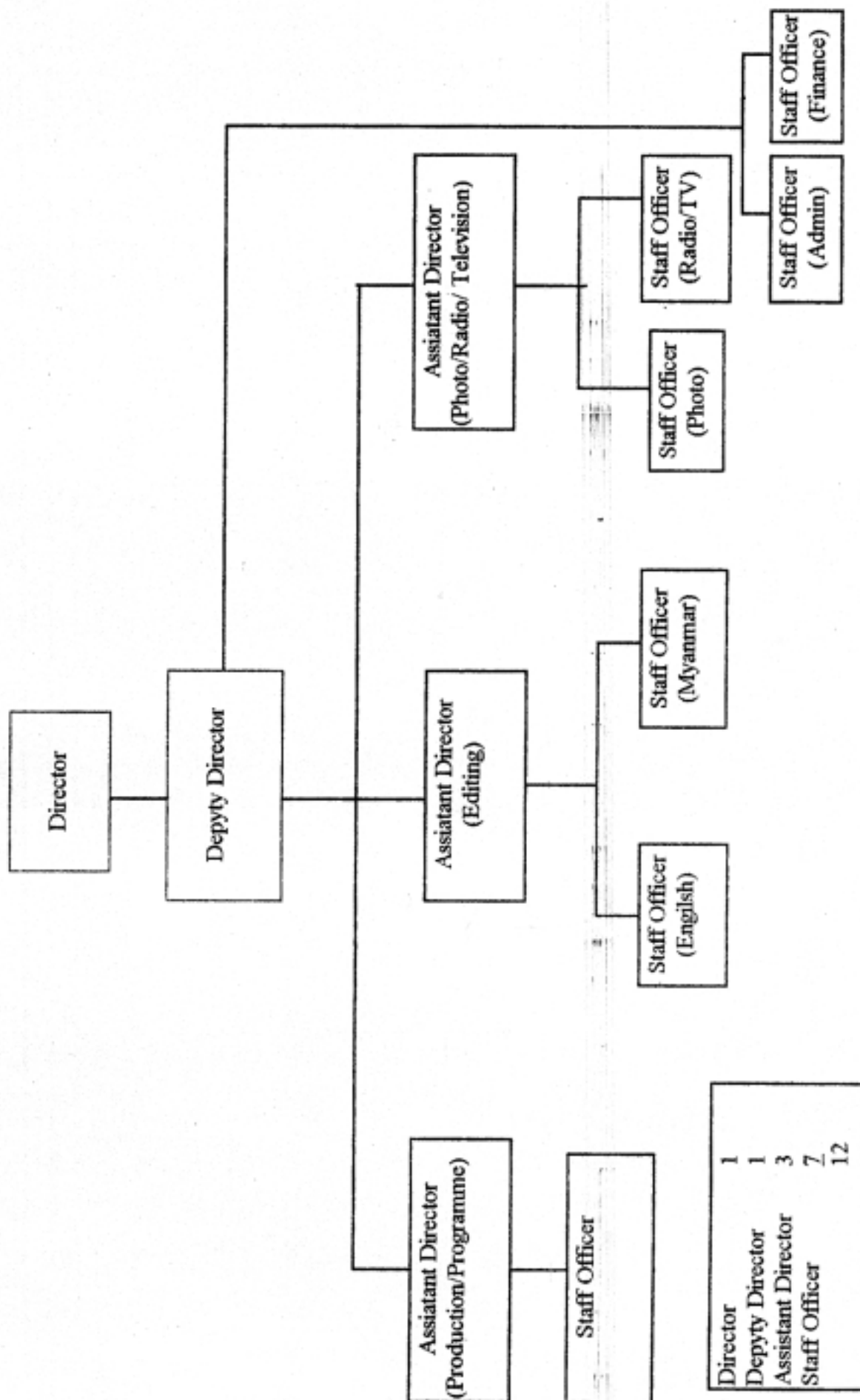


Illustration of bridge connection between research departments and practical users.

Organization Structure for the Extension Division



4-5. UNDP/FAOプロジェクト

Environmentally Sustainable Food Security and Micro-income Opportunities in the Dry Zone

MYA/96/006-UNDP/FAO

ミャンマーの林業分野に関する技術協力では、現在UNDP/FAOがShan州の水源地域、イラワジ川河口マングローブ地域、中央乾燥地の3ヶ所で支援を行っている。プロジェクトの名称としては、Environmentally Sustainable Food Security and Micro-income Opportunities として、1993年から実施された Human Development Initiative Programme の第2段階という位置づけになっている。UNDP/FAOではミャンマーの政治的な状況に配慮して、あくまでも現政府を通さず、独自に住民に対する支援を展開しているという形になっている。

対象地域及び村落の選定にあたっては、中央乾燥地内での場合は、最も気候条件が厳しくまた最貧地域を選んでいるということであり、現地調査で訪れた Kyaukpadaung Township 内の Yar Gyi Taw 村でもその状況はうかがわれた。

詳細については添付資料2の概略、写真11：乾燥地での植林、写真12：土壌保全のためのチェックダムの設置を参照願いたい。

ENVIRONMENTALLY SUSTAINABLE FOOD SECURITY AND MICRO- INCOME OPPORTUNITIES IN THE DRY ZONE

MYA/96/006- FAO/UNDP

Back ground

Human Development Initiative program was started in myanmar in 1993 funded by UNDP. The program has many sectoral development projects, executed by concerned UN agencies. There were two projects under FAO execution namely " Community Multipurpose Fuelwood Woodlots project (MYA/93/003-FAO) and Environmental Rehabilitation and Agricultural Development in Dryzone (MYA/93/004-FAO). These two projects were terminated in 1996 and the HDI-Extension program was started in 1996. The two FAO projects were merged and appeared as an integrated rural development project, MYA/96/006-FAO/UNDP at present. The main objective of the HDI is to acheve the Sustainable Human Development, SHD in rural areas.

Project Structure

Funding Agency : UNDP
Execution Agency : FAO
Cooperation Agencies : Myanma Agriculture Services
Forest Department
Livestock Department

The project has three main sectoral interventions that are Agriculture, Forestry/Environment and Livestock sector development in an integrated manner.

Planning and Implementation

The planing and implementation of the project is extremely based on participatory approach. The project conducted planing exercise by using planing tool as PRA (Participatory Rapid Appraisal) by inter-disciplinary team. One of the steps involved in PRA is problem identification. The villagers identified their problems and prioritized, than the villager trying out the possible solutions for their problems. At that time, the planing team facilitates the meeting in consultative ways.

The proposals from the community are the output of the planing exercise. The proposals were screening by the technical personals for the technical feasibility and social acceptability for the community, than implementation was started. The main implementation agent is community and FAO, Forest Department and other government agencies are execute technically and financially.

Forestry Focus

The major focuses of forestry sector interventions are

- To restore the denuded Dryzone Eco-system.
- To reduced the acute gap between fuelwood supply and demand of the region
- To promote the Community Forestry in Dryzone
- To promote Agro-forestry land use system for the local community development
- To stop the vicious cycle of Environmental Degradation and Poverty***
- To create a sustainable food security in the area

Forestry Activities

1. Community Woodlots
2. Community Forestry (Natural Forest)
3. Community Nursery
4. A.1 stove distribution
5. Agro-forestry demonstration
6. Home stead planting and village greening
7. Village road upgrading**
8. Spring development and small dam construction

Note:

*** Effective IEC (information, Education and Communication) program

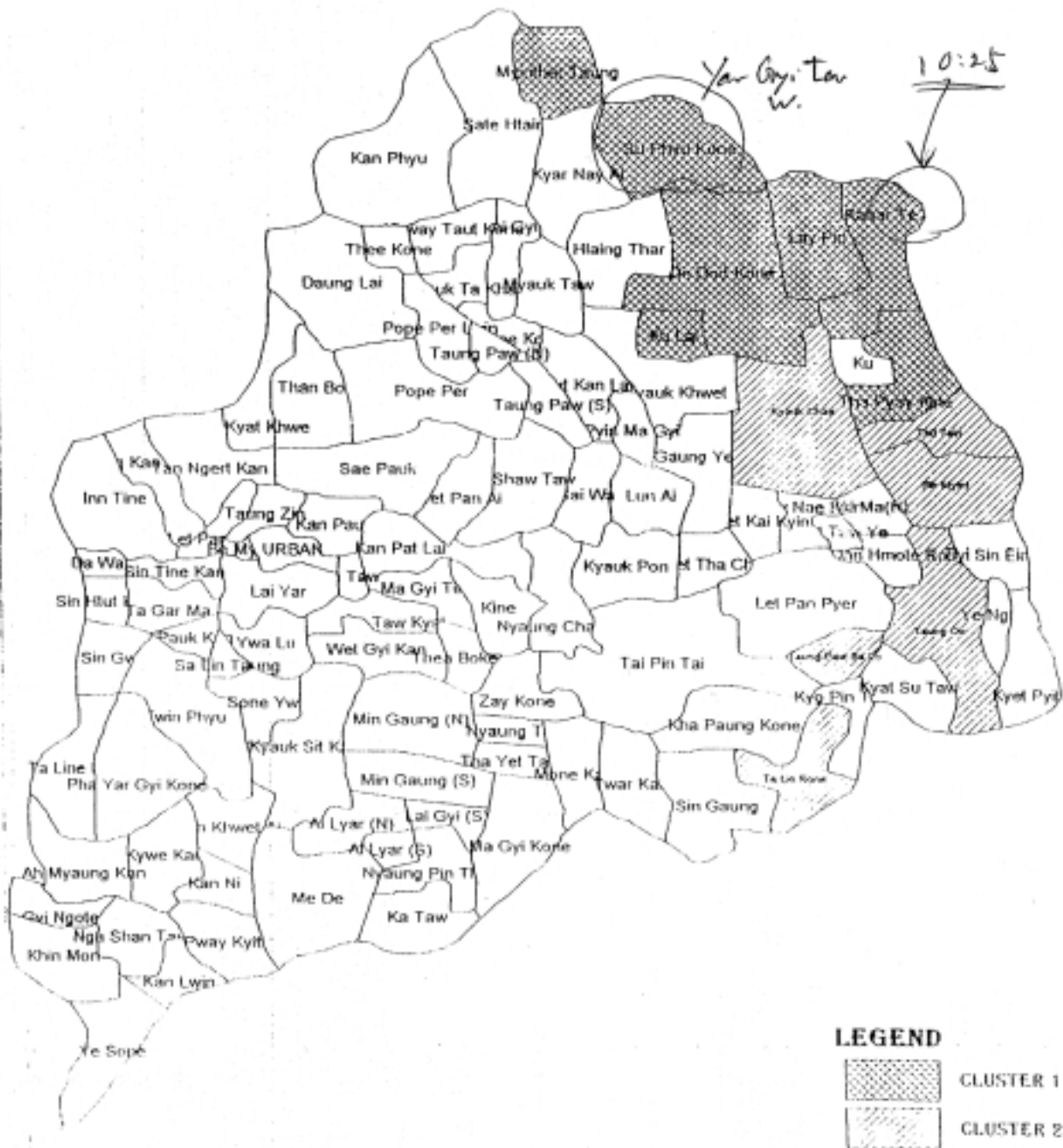
**Village road upgrading is essential for improving accessibility to the market, health and education etc.....



Kyaukpadaung Township



Priority Village Tracts



MYA/96/006





4-6. 農業省普及局

ミャンマー国内の普及機関としては農業省のAgriculture Extension Service がその役割、歴史、組織力のすべてで先んじている。職員規模20,000人以上で全国に展開している。住民との接点にはVillage Manager を設定している。採用している普及アプローチとしては、

- 1) The General agriculture extension approach
technology transfer from central body organization to the rural people
- 2) The commodity specialized approach
the way to increase the production of particular crop
- 3) The training and visit approach
a two way flow of communication between researcher and extension unit as well as between extension staff and farmers
- 4) The agricultural extension participatory approach
farmers know very well about their land, crops, and environments but it is still necessary to bring some knowledge from outside world to improve their levels of living and productivity
- 5) The project approach
successful methods and techniques which are applied in the particular project can be replicated in other locations of the country
- 6) The farming systems development approach
to provide appropriate technology to extension personnel to meet the needs and interests of local farming conditions
- 7) The cost sharing approach
helping farmers learn those things they need to know for self-improvement and increase productivity
- 8) The education institution approach
active participation of agricultural schools, colleges and universities

などがあげられ、今後の林業普及においても学ぶべきところが多い。

4-7. NGO

ミャンマー国内の林業関連NGOとして以下の組織が考えられる。

4-6-1. Forest Resource Environment Development and Conservation Association (FREDA)

ミャンマー国内林業関連NGOとして存在する。概略は別添資料3のとおり。主に政府機関退職者により組織されている。日本国内のNGOとの接触も多いようだ。外国NGOの受入れ窓口となっている。

4-6-2. 読売ミャンマー植林プロジェクト

読売新聞が予算の支援をおこない、NyaungU Districtで実施している植林プロジェクト。実施期間は1996年から1999年までの4年間で最終年に入っている。薪炭林の造成とアグロフォレストリーを実施している。資料4参照。

4-6-3. JIFPRO友好の森プロジェクト

実施機関は乾燥地緑化局であるが、JIFPROが資金を提供して植林地の造成にあっている。上記読売の支援するプロジェクトと隣接した地区で実施されている。写真13：1997年に植林されたユーカリ。

BRIEF PROFILE OF FOREST RESOURCE ENVIRONMENT
DEVELOPMENT AND CONSERVATION ASSOCIATION (FREDA)

FREDA is a non-political and non-profit NGO in the forestry sector of Myanmar. Its primary objective is to promote and participate in all forms of activities related to sustainable forest management, natural environment and wildlife conservation, rational development of forest based industries, marketing of forest products, and livelihood security of local communities dwelling in and around the forests of Myanmar.

FREDA is composed of around (140) members, comprising various disciplines like foresters, botanists, agronomists, zoologists, veterinary scientists, engineers, timber businessmen, journalists and artists. It is operated by a (7) member Executive Committee, led by a group consisting of retired Director General of Forest, Professor of Forestry, Directors of Forest and other Specialists. It is recognised both nationally and internationally.

Currently, FREDA is engaged in activities such as socio-economic surveys at grassroot level for local community development, planning and demonstration for community collaboration in reforestation and forest conservation especially in areas dominated by slash and burn agriculture, review of shifting cultivation in Myanmar, overview of protected areas system in Myanmar, studies and planning for restoration of degraded mangrove ecosystem in the delta of Myanmar, wildlife conservation specific to Thamin (*Cervus eldi thamin*) and tiger, study on monitoring system for sustainable tropical forest management, drafting of guidelines for development of national criteria and indicators for sustainable management of forests. The studies and field activities are being implemented with the collaboration and support of the Japan Overseas Forestry Consultants Association (JOFCA), Japan Wildlife Research Centre (JWRC), Myanmar Industries of Nature Association (MINA), David Shepherd Conservation Foundation (DSCF) of UK, Global Survival Network (GSN) of U.S.A. and the Embassy of Japan, Myanmar.

FREDA office is located at 24 Yawmingyi Road, Dagon Township, Yangon, Myanmar. It may be communicated through tel: 95-01-243827, and fax 95-01-254074.

EXECUTIVE COMMITTEE OF FREDA

(1) U Sein Maung Wint ¹ , Former Director General Forest Department, Myanmar.	Chairman
(2) U Soe Kyi ² , Former Director General Forest Department, Myanmar.	Vice Chairman
(3) U Aung Than ³ , Former Deputy General Manager Myanma Timber Enterprise, Myanmar.	Honorary Auditor
(4) U Sein Win ⁴ , Former Director Forest Department, Myanmar.	Finance Secretary
(5) U Ohn ⁵ , Former Director Forest Department, Myanmar.	General Secretary
(6) U Than Htay ⁶ , Former Associate Professor Institute of Animal Husbandry and Veterinary Science, Myanmar.	Additional General Secretary
(7) U Myint Than ⁷ , Former General Manager Myanma Timber Enterprise, Myanmar.	Secretary Research and Development

-
1. Former Team Leader of Asia Pacific Forest Industries Development Group - A Regional Project sponsored by the United Nations Development Programme and Food and Agriculture Organization. The Project was based at Kuala Lumpur, Malaysia (1988-90). International travelling experience in 27 countries. Author of many professional papers.
 2. Former Professor of Forestry, Institute of Forestry, Yezin. (1983-89).
Former Project Director, National Forest Management & Inventory Project (1990-91).
 3. Former Project Director of East Pegu Yoma Project funded by IDA (1987-90).
 4. Former Chief Technical Adviser (CTA) of Regional Watershed Project - "Support to Watershed Management in Asia" covering 10 countries, funded by UNDP/FAO; Regional Watershed Training Project, funded by Netherlands Govt./FAO and Interregional Project for Participatory Upland Conservation and Development funded by Italy Govt./FAO. Retired Chief Technical Adviser, UN/FAO. Projects were based at Kathmandu and Gorkha, Nepal (1989-1994).
 5. Former Project Director of Kinda Pilot Watershed (1986-87) and National Forest Management and Inventory (1987-88) projects funded by UNDP/FAO. Member of Species Survival Commission (SSC) IUCN (1988-96) and Life Member of ISME (International Society for Mangrove Ecosystems), Okinawa, Japan. The author of a book titled "Plantation Forestry on a Par with the Natural Forests" January, 1995.
 6. Former Executive Committee Member of Board of Education and Board of Examiners in Technical, Agricultural and Vocational Department, Ministry of Education (1991-96).
 7. Former Secretary, Review Committee for Foreign Investments in Forestry Sector (Wood Based Industries). Author of the papers on "Integrated Industries for Value Adding to Teak" and "Policies and Plans for Sustainable Forestry Development in Myanmar". Designed and supervised construction of many sawmills with capacity ranging from 5000 to 12000 tons per year.

FREDA MESSAGES

1. FREDA aims to develop a conservation based land use system (s).
2. Conservation, however, should be compatible with the development.
3. Development should be sustainable and it should have a minimum disturbance to the natural environment.
4. Environment means a balanced eco-system (s) which will be a favourable habitat for diversified flora and fauna.
5. Concerted action on international, regional and national environmental issues such as global warming, rainforest destruction and species extinction should be addressed immediately, seriously and collectively.
6. Organization characteristics ---- flexibility, innovative ability, participatory approach and cost effectiveness are to be highly valued.
7. FREDA has seen decentralization becoming a force in economic enterprises.
8. FREDA also sees information-highway as an essential instrument to the development process.
9. FREDA has focused on active self-help, initiative and human development. It, in fact, is a vehicle for broader community development especially for the poor, youth, women and children.
10. FREDA will be happy to participate in reducing the wide gap between rich and poor and also the extinction of species or sub-species on this planet " Earth ".

Union of Myanmar
Ministry of Forestry
Mandalay Division, Nyaung Oo District, Bagan- Nyaung Oo
Township Forest Department.

Myanmar - Yomiuri Afforestation Project.

1. Brief Description:

Myanmar Forest Department, with the blessing of our ministry, is authorized to under take this project to implement in 1200 acres fuelwood plantations in four years with the cooperation of Yomiuri, one of the N.G.Os from Japan.

The main objective of this small project was to preserve the environments and the participation of the grass root levels would be carried out by using Agro-forestry techniques.

2. Objectives

- (a) To address the fuelwood needs of the rural population.
- (b) To improve the environment by greening.
- (c) To improve the microclimates and production of agriculture crops.
- (d) To introduce sense of value and ownership of trees and woodlots by the village communities.
- (e) To promote self reliance in the preservation and management of the village woodlots.
- (f) To educate rural farmers on soil and water conservation knowledges through agro-forestry.

3. Background

Pyinma protected forest area (project area), located some 20 miles south-east of Bagan-Nyaung Oo, covers an area of 5189 acres of rolling country. As recently as 25 years ago, nearly the whole area had a dense plantations of Eucalyptus. And then more and more fire wood collection as well as increasing population caused to deforestation. Forest land encroachment and clearing for crop production has not been limited to poor landless farmers. Fringe dwellers cleared vast tracts of forestland for cash crops production especially of tomatoes and pigeon-pea.

4. Planned Period

The plan period for MYAP is from 1996 to 1999 (4 - years).

5. Area Selected:

Pyinma protected forest area , Bagan - Nyaung Oo Township,
Nyaung Oo District, Mandalay Division.

6. Budget Contribution

Myanmar Forest Department----- Ks 7.06 million .
Yomiuri ----- Yen 12.00 million .

7. Implementing Agency

Myanmar Forest Department.

8. Soil

Soil is usually badly eroded and denuded, highly leached, gravly to rocky. Normally this belt belongs to the tertiary sandstone geologically. There may be clay pans in the flat or depression areas-

(1) Soil texture	-----	Sandy loam or, sandy soil
(2) P ^H	-----	8
(3) N ₂	-----	0.04 %
(4) P	-----	0.0001 %
(5) K	-----	0.0004 %

9. Climate Conditions

Annual Mean Temperature	-----	80° F (Max 110° F, Min 70° F)
Precipitation	-----	24.6 inches (36 raining days)
R.H	-----	70 %

10. Spps Planted

Eucalyptus	-----	75 %
Fast growing NFT	-----	25 %

Myanmar-Yomiuri Afforestation Project
 Bagan-Nyaung Oo
 Pilot Operations of
 Community Forestry through Agro-forestry for 1996.

1. Projected Area	⇒	300 Acres
2. Number of User's group	⇒	6
3. Number of User's	⇒	61
4. Agro - forestry implementing Area	⇒	200 Acres
5. Varities of Crops		
(a) Pigeon Pea	-----	97 Acres
(b) Sesamum	-----	42.5 Acres
(c) Ground nut	-----	10 Acres
(d) Tomato	-----	45.5 Acres
(e) Bean	-----	5 Acres
		Total 200.0 Acres

Brief Socio-economic Conditions of Effective Area

Serial	Village	Household	Population	Agri-land	Toddypalm	Cattle
1	Sade	438	2585	1125	14500	1000
2	Htanaungwin	88	555	375	3850	326
3	Dahatkan	80	500	70	1003	450
4	Nyaungbinthar	24	154	144	1135	59
5 1996	Ngaminmai	275	1477	1101	3050	450
6 1996	Ngapi	100	619	400	1200	105
7	Dabauktaw	205	1158	800	2500	350
8	Kaungnyo	148	1192	440	3776	1458
9	Dahatsi	195	1171	805	25406	470
	Total	1553	9441	5260	56370	4668



写真14

