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Miscellaneous Document No. 34

COMMUNITY FORESTRY DEVELOPMENT IN ILAM FOREST DISTRICT

1984 - 1985

Volume I - TEXT

By

Cathrien H. de Pater

FAO Associate Expert

HMG/UNDP/FAO

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NEPAL

FOREWORD

The purpose of the HMG/UNDP/FAO Community Forestry Development Project is to provide technical assistance to the community forestry development component of the HMG/World Bank Community Forestry Development and Training Project. This component assists during a five-year period village panchayats in 29 Hill Districts of Nepal with the establishment of 12,000 ha of Panchayat Forest, the management of 40,000 ha of Panchayat Protected Forest and the distribution of 900,000 seedlings for private planting. At the national, district and village level the project is concerned with motivation and education activities to encourage people's interest and participation in community forestry. In addition, research and development of more efficient woodfuel using stoves is expected to lead to the introduction of 15,000 improved stoves.

In the 21 Forest Divisions, which cover the 29 districts, the implementation of the field programme is carried out by the District Forest Controllers (formerly called Divisional Forest Officers). Much responsibility and authority is delegated to them from the centre. They are often assisted by an FAO associate expert or bilaterally funded volunteer, who has the particular task of introducing the new concept of community forestry to villagers and junior staff of the District.

Associate Expert, Ms. Catharina H. de Pater was attached to Ilam District in Eastern Nepal from July 83 to July 85. Ms. Catharina H. de Pater was preceded in this district by three other Associate Experts, Mr. Jerker Thunberg and Ms. Marit Werner from early 1980 to August 1981 and Mr. H. B. Olsson from early 1982 to August 1983. This report by Ms. Catharina H. de Pater and the two earlier reports by the other three Associate Experts describe the project activities over a full 5 year period. They amply illustrate the development of the project from small beginnings and pioneer efforts, to the expanded efforts which finally reflect project

activities as they are today, from ten participating panchayats with 10 nurseries in 1981 to 20 participating panchayats in 1983 to 22 participating panahcyats or 45% (Project Average 27%) of the total panchayats in 1985. The earlier work has been finally consolidated to some extent during the last two years with the commencement of the most difficult task of organizing Forest Committees and preparation of Management Plans. This leaves an equally difficult task ahead, of executing the Management Plans already prepared and preparing management plans for other panchayat areas and involving panchayats which have so far refrained from project participation. However, one of the limitations is the availability of adequate land.

After describing the activities carried out by her, Ms. Catharina H. de Pater has attempted an impact study of project activities for the whole district. In addition she describes the Stove Programme carried out within the last two years with specific proposals for the future.

The chronological development of project activities to the level witnessed today has been made possible, due to the dedication and enthusiasm of District Forest Controllers, their senior staff and the Community Forestry Assistants who have been the main link with panchayat members. In these efforts Ms. Catharina H. de Pater has also worked closely with the HMG Staff and the Panchayat members. We are grateful Ms. Catharina H. de Pater, for her commitment to duties relating to project activities which are described in the text of this report.

M.S. Ranatunga
Chief Technical Adviser
NEP/80/030

SUMMARY

Community Forestry in Ilam Forest District was started in 1979/80. Since then it has steadily grown into a widespread and generally successful programme. Achievements until now are the following: Construction and operation of 28 nurseries; handing-over of 986.5 ha of PFs and 2164.1 ha of PPF; establishment of 1024.1 ha of plantation; administration of 127 PF/PPF sites; distribution of 367,000 seedlings for private planting; preparation of 24 forest management plans; formation of 15 Forest Committees; organization of four PFF/PFW training courses; organisation of three District Seminars, and the introduction of over 300 wood-saving cookstoves. Extension and motivation formed an integrated part of the work.

During the last two years, progress was especially made on the part of management plans, Forest Committees, and stove introduction. Also a school nursery was constructed with technical assistance of the project. Surveys held in the last year revealed an average survival percentage of 63% for panchayat plantations, and 51% for private planting. Stoves were found to be used for 50-75% after one year or more.

The main problems encountered were the scarcity of available plantable land for PFs, and as a consequence, low quality of the sites allocated, as well as pressure on existing plantations in the form of land claims and encroachments. Technical and administrative impediments provided other constraints but they have been gradually decreased. Logistic difficulties were mainly found in the stove programme.

In order to evaluate the impact of the project until now, the percentage of fuelwood consumption fulfilled by Community Forestry production was estimated. For fodder and timber, no quantitative data were available. Under conservative assumptions, it was calculated that the project could meet 12% of the demand for fuelwood in the next 15 years.

It was further estimated that if the project continued in the same way as at present, another 8% could be added making a total of 20%. If, however, the land problem would be solved by encouraging and improving private plantations, this percentage would be much higher. Private planting, including village-level training, should therefore receive major attention in future.

Forest management implementation which is about to start, is further considered important. Future experience will indicate to what degree it can fulfil the demand of forest products in the future.

As for the stove programme which is well received by the population, further experiments will have to prove whether it is a viable strategy in Ilam.

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LIST OF ABBREVIATIONS AND TERMS

CFA	Community Forestry Assistant
CFAD	Community Forestry and Afforestation Division
CFDP	Community Forestry Development Project
DFC	District Forest Controller
DFO	District Forest Office
DN	District Nursery
HMG	His Majesty's Government
MFTW	Ministry of Forests, Training Wing
MPLD	Ministry of Panchayats and Local Development
NP	Nagar (Town) Panchayat
PCRW	Production Credit for Rural Women (Project)
PF	Panchayat Forest
PFW	Panchayat Forest Watcher
PPF	Panchayat Protected Forest
RN	Range Nursery
UNICEF	United Nations Children's Fund
WDO	Women's Development Office

Use of Terms in this Report

banheralo	the common Nepali name for PFW
District	District Forest Office, (according to the new terminology, District Forest Section) of Ilam
district	the geographical area of Ilam Forest District
naike	the common Nepali name for PFF
Panchayat	Village (political/organisational sense)
panchayat	Village (geographical sense)
Range Officer, Range Nurseries	These terms have been retained since the new terms, Area Officer/Nurseries, were not used in the period described by this report

INTRODUCTION

This is the third report about Community Forestry in Ilam. The first one, by Thunberg and Werner (1981b), reflects the District's efforts to introduce and establish the project in the first two years. The second period, described by Olsson (1983), was mainly devoted to expansion and consolidation of the programme, especially by strengthening the technical quality of the work.

When I arrived, the project was already widely known, and afforestation activities had grown into a well established routine. It was considered to be my task not only to assist in further silvicultural improvements, but also, and even more so, to develop forest management practices and introduce fuel saving cookstoves, activities which were already initiated before.

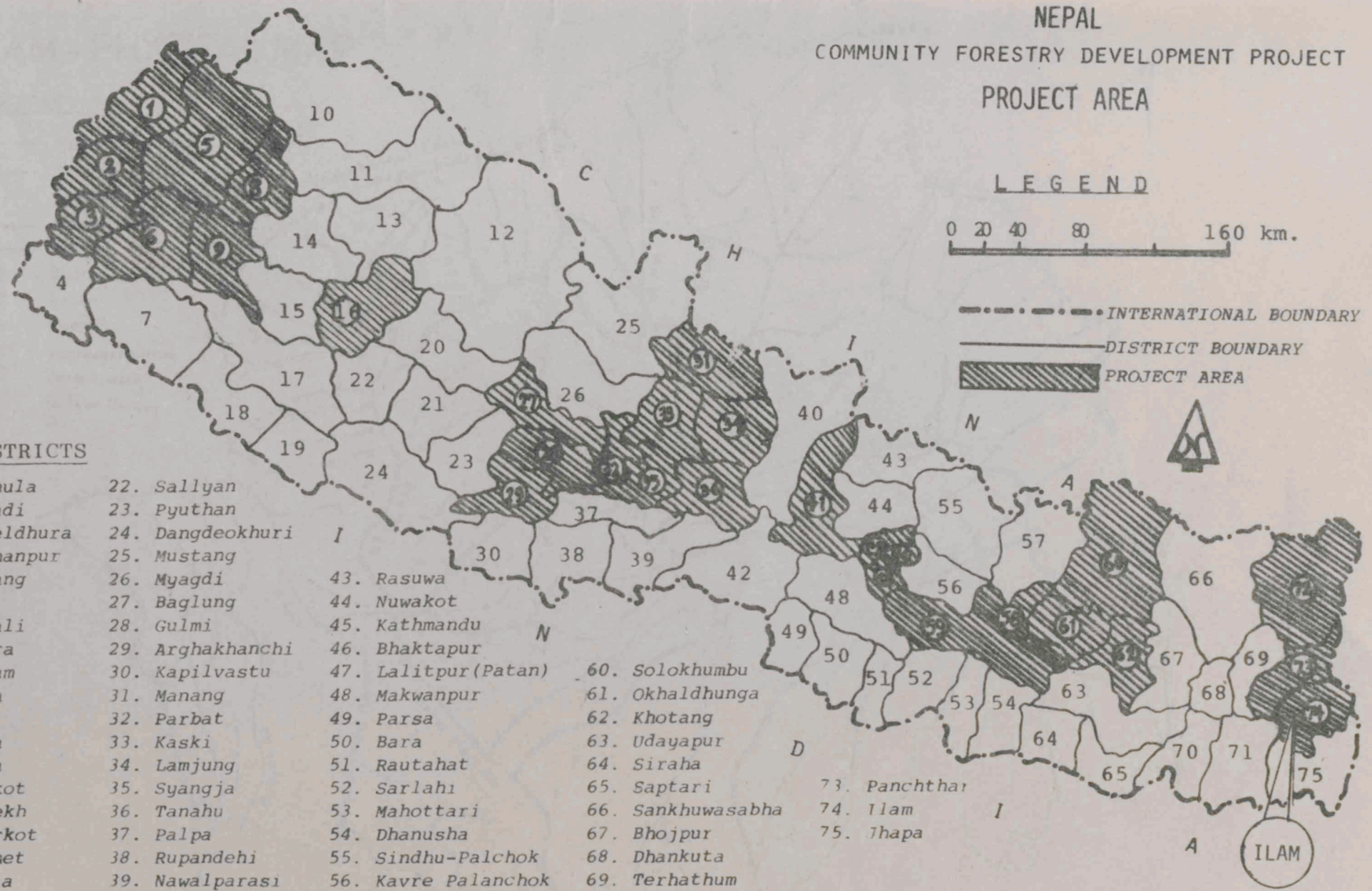
This report describes the results so far achieved. It further tries to evaluate the eventual significance of the last five years' work. The main text concentrates on points emerging from the work which have a bearing to the project as a whole. The Annexes deal with problems spefically related to the District and its Panchayats. I very much regret that I had to leave just before a new and vital stage of Community Forestry work would start: that of management plan implementation.

However, I fully trust that the District staff and village people will carry out this responsible task satisfactorily, and with the same dedication as they showed before. It is mainly through their efforts that the achievements of CFDP in Ilam have been reached. I will remember them with great (sympathy), admiration and thankfulness for their hospitality. A special word of thank goes to the two successive DFCs, Mr. M.P. Ghimire and Mr. M.R. Maharjan, who carried out the CFAD programme with great enthusiasm and active interest during my stay. To the latter, who is charged with the task to continue the success of the project, I dedicate my best wishes for the future.

NEPAL

COMMUNITY FORESTRY DEVELOPMENT PROJECT

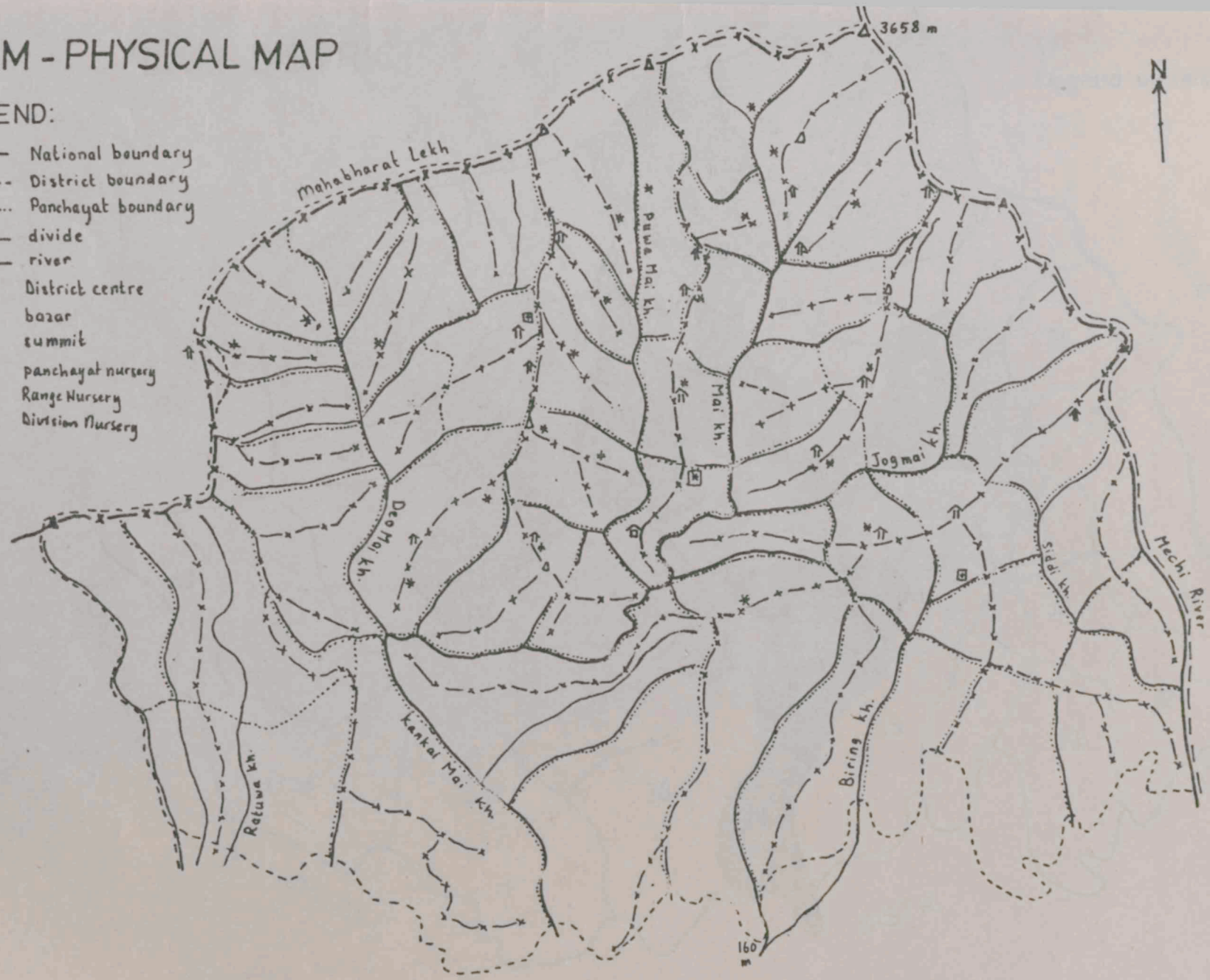
PROJECT AREA



DISTRICTS

1. Darchula
2. Baitadi
3. Dandeldhura
4. Kanchanpur
5. Bajhang
6. Doti
7. Kailali
8. Bajura
9. Achaam
10. Humla
11. Mugu
12. Dolpa
13. Jumla
14. Kalikot
15. Dailekh
16. Jajarkot
17. Surkhet
18. Bardia
19. Banke
20. Rukum
21. Rolpa
22. Sallyan
23. Pyuthan
24. Dangdeokhuri
25. Mustang
26. Myagdi
27. Baglung
28. Gulmi
29. Arghakhanchi
30. Kapilvastu
31. Manang
32. Parbat
33. Kaski
34. Lamjung
35. Syangja
36. Tanahu
37. Palpa
38. Rupandehi
39. Nawalparasi
40. Gorkha
41. Dhading
42. Chitwan
43. Rasuwa
44. Nuwakot
45. Kathmandu
46. Bhaktapur
47. Lalitpur(Patan)
48. Makwanpur
49. Parsa
50. Bara
51. Rautahat
52. Sarlahi
53. Mahottari
54. Dhanusha
55. Sindhu-Palchok
56. Kavre Palanchok
57. Dolakha
58. Ramechhap
59. Sindhuli
60. Solokhumbu
61. Okhaldhunga
62. Khotang
63. Udayapur
64. Siraha
65. Saptari
66. Sankhuwasabha
67. Bhojpur
68. Dhankuta
69. Terhathum
70. Sunsari
71. Morang
72. Taplejung
73. Panchthar
74. Ilam
75. Jhapa

ILAM - PHYSICAL MAP



ILAM DISTRICT

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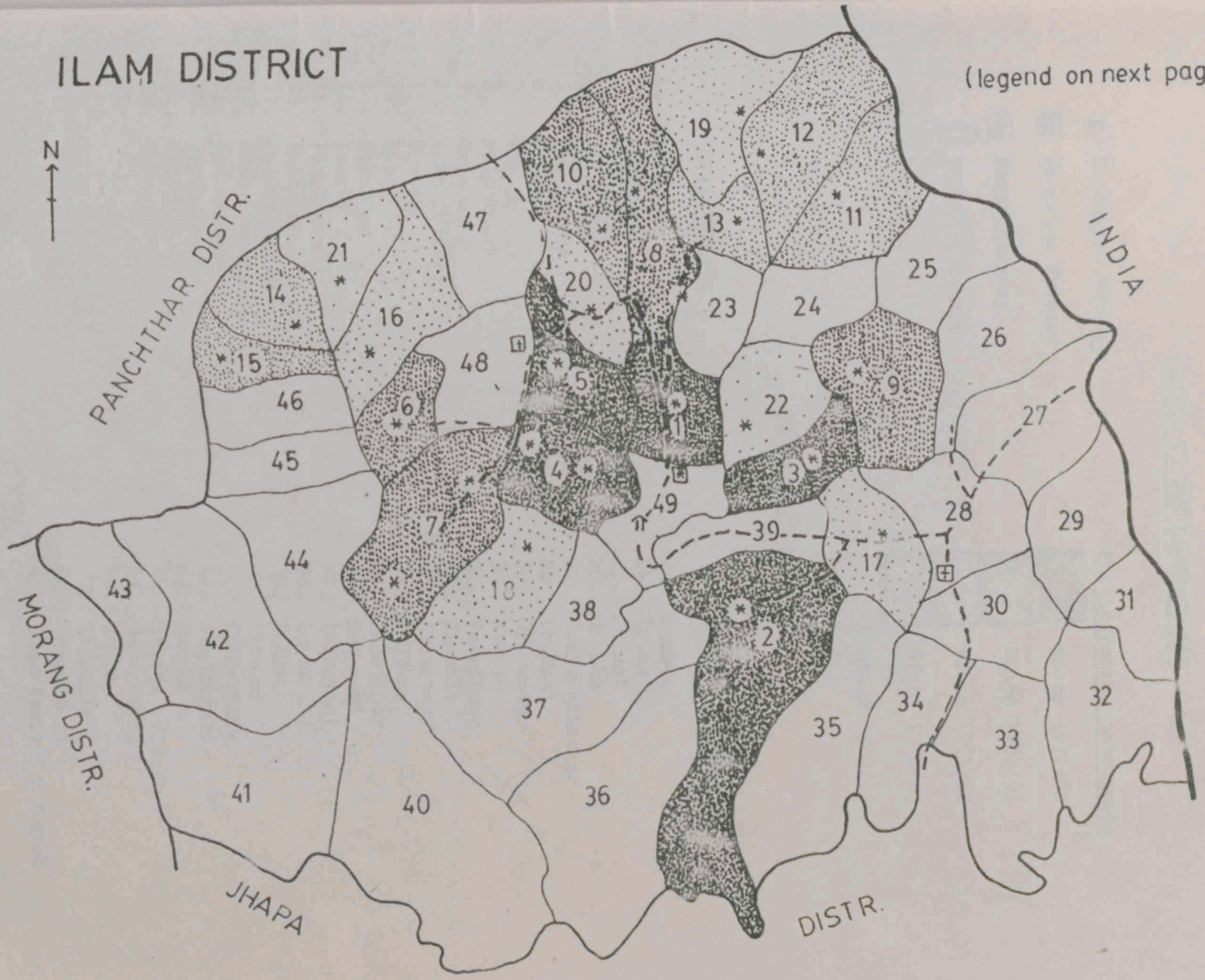

LEGEND TO THE DISTRICT MAP

- Panchayat Nursery
- Division Nursery
- Range Nursery
- District Centre
- Car Road

Participating panchayats:

- Since 1979/80
- Since 1980/81
- Since 1981/82
- Since 1982/83
- Since 1984/85

Names of Panchayats

Participating

1. Barbote
2. Laxmipur
3. Namsaling
4. Sangrumba
5. Shantidada
6. Dhuseni
7. Jitpur
8. Maipokhari
9. Nayabazar
10. Puwa Majhuwa
11. Jamuna
12. Mabu
13. Sulubung
14. Amchok
15. Phuetappa
16. Ekatappa
17. Pancha Kanya
18. Siddhithumka
19. Mai Majhuwa
20. Sakhejung
21. Phakphok
22. Soyang

Not participating

23. Sumbek
24. Pyang
25. Jogmai
26. Gorkhe
27. Pashupatinagar
28. Phikkal
29. Sri Antu
30. Kanyam
31. Samalbung
32. Jirmale
33. Irauntar
34. Kolbung
35. Shantipur
36. Danawari
37. Chisapani
38. Soyak
39. Godak
40. Mahamai
41. Chulachula
42. Banjhogaun
43. Sakphara
44. Ibhang
45. Gazurmukhi
46. Lumde
47. Chamaita
48. Mangalbari
49. Ilam Nagar Panchayat

1. GENERAL DESCRIPTION

1.1 General Features

Ilam Forest District is situated in east Nepal and covers an area of 1703 km^2.[1/] It contains 49 panchayats including Ilam Nagar Panchayat. The altitude of the District ranges from 160 to 3700 m a.s.l. The topography of Ilam is shown on the physical map (page). The prevailing climate is subtropical to temperate; rainfall varies from 1500 to 3000 mm and falls mainly from May till October. Monthly temperatures are highest in August (25°C) and lowest in December (7°C) (National Planning Commission, 1984).

Population numbered 178,356 in 1981 (National Planning Commission, 1984). As the growth rate is 1.64%, the population in 1985 will be around 189,000 people. More than 90% of them are engaged in agriculture. The greatest concentration occurs between 900 and 3000 m altitude, where most cultivable land, appr . 560 km^2, is found. Especially in this range, pressure on land is increasingly high.

The effects on soil and forest resources are obvious and have already been discussed by Thunberg and Werner (1981b) and Olsson (1983). These authors also describe the general features of Ilam District in detail, for which I may refer to them.

1.2 Development Since 1983

The number of development activities and projects has greatly increased during the past two years. A brief summary of those with a bearing on Community Forestry follows here:

1/ Figure from the National Planning Commission (1984) and checked with recent maps. It more or less tallies with the figure given by Aryal et. al., (1982) but not with the 990 km^2 in Thunberg & Werner (1981b) and Olsson (1983).

1. The road network has been extended considerably, so that a number of nurseries and plantations can now be reached by car for a great part of the year. In places, road construction has led to erosion and landslides.

2. The number of credits and bank loans to small farmers through several banking programmes has been rapidly increasing. A great part of these are used for purchasing cows and buffaloes, and for small dairies. Milk production is further stimulated by a new chilling centre in Phikkal connected with the milk factory in Biratnagar. To what extent the fodder resources are strained by the increasing animal population is still unknown, but the people's eagerness to establish fodder (tree) plantations indicates that they foresee a shortage in the future.

3. A Women's Development Office (WDO) has been established in Phikkal in 1984. Under the Production Credit for Rural Women (PCRW) project, they engage in a great number of activities, amongst which are tree planting and stove improvement. Especially for the latter, they work in close cooperation with the District Forest Office (see Chapter 6).

4. A fourth tea estate is being established at Chilingkot, Danawari. Kanyam Tea Factory, the third tea factory in the district, was recently opened. For Chilingkot, 500 ha of forest was cleared; another 500 ha was allocated to Soktim Tea Estate for fuelwood production. A small farmer's tea programme has been established in Phikkal. It is foreseen that expansion of the tea area in Ilam - which is in accordance with a recent HMG declaration - will take more forest land in future, while fuelwood requirements for tea processing will be higher.

5. A sericulture project including the plantation of mulberry trees (Morus macroura) has been started in Bhanjyang, Ilam NP,

by the Women's Development Association. (assisted by the Lutheran World Service).

6. The MPLD Drinking Water Supply Project has now completed 29 water systems in 19 panchayats. Some panchayat nurseries get their water from these systems. The need of source protection through forest maintenance or establishment is now recognised.

1.4 Maps

The following maps were used for project work in the district:

- A Panchayat map (scale 1:125,000) provided by the District Survey Office, indicating the latest administrative boundaries and basic topographic features.

- Survey of India maps (scale 1:50,000), edition 1960. These were used for field orientation and location of project sites.

Of all 22 participating panchayats, maps were traced from the 1:50,000 maps, with indication of nurseries, PFs and PPFs. These are now available in the District as master copies for management plans.

Land use maps (scale 1:50,000) prepared by the Land Resources Mapping project have recently become available. Copies were ordered by the District, but have not arrived until date.

2. COMMUNITY FORESTRY ACTIVITIES, AUGUST 1983 - JULY 1985

2.1 Participating Panchayats

Two new panchayats, Phakphok and Soyang, joined the programme in 1984/85, bringing the total of participating panchayats to 22. In 1983/84, no new panchayats were included, but activities in the existing panchayats were consolidated instead.

A description of all panchayats is given in Annex 1. Their location is indicated on the District map (page xiv).

2.2 Nursery Construction

Aside from the 20 already existing nurseries, five new nurseries were constructed in 1984/85. Two of these were built in new panchayats, and three nurseries were established in panchayats where the remoteness of plantation areas justified second nurseries.

In two other panchayats, Shantidada and Dhuseni, the old nurseries were transferred because of decreasing water supplies. The new Dhuseni nursery was constructed on the naike's own land.

The total of nurseries, together with one Division Nursery and two Range Nurseries, is now 28. Their location is indicated on the District map (page).

2.3 Nursery Operations

A total of 698,000 seedlings was produced for the planting season of 1983/84, of which 501,500 were raised in Panchayat Nurseries. The rest came from the two Range Nurseries and the Division Nursery. In 1984/85, 1,384,000 seedlings were produced, of which 1,176,000

were raised in Panchayat Nurseries. Nursery Operations Plans have been prepared for both years. In 1984/85, four nurseries failed to have their plans ready in time. Although their preparation has become a regular habit, the plans are still not optimally used.

2.4 Demarcation and Handing-Over

In total, there are now 73 PF sites (1261.1 ha) and 54 PPF sites (2268.0 ha) in Ilam District. Their areas, status and plantation records are specified in Tables A3.1 and A3.2, Annex 3.

Demarcation is almost entirely up to date. In 1983/84, 94.4 km was demarcated, and in 1984/85, 107.1 km. Nineteen PFs and 16 PPFs (312.7 resp. 570.7 ha) were handed over in 1983/84. In 1984/85, 15 PFs and 13 PPFs were handed over covering 246.2 resp. 923.9 ha. Eleven more sites are expected to be handed over before the end of this fiscal year.

2.5 Panchayat Forests

220.5 ha of PF area was planted in 1984, and 288.7 ha in 1985. The total area of PFs planted during the life of the project is 850.3 ha.

The gross afforested area of some PFs is larger than the sum of the planted areas, due to patches of old forest within their boundaries. On the other hand, areas have occasionally been destroyed by landslides, fire or destruction by people (63.2 ha). All this being taken into account, the total area of fully afforested PFs is 878.3 ha.

The plantation results are summarised in Table 1.

2.6 Panchayat Protected Forests

Enrichment planting of PPFs was carried out on 38.5 ha in 1984 and 80.8 ha in 1985. The total area planted over the years is 194 ha, or 9% of the total PPF area. For a summary of results, see Table 1.

2.7 Survival and Replacement

According to surveys carried out in 1985, the average weighted survival for plantations was 63%. Maximum survival per site was 95% and minimum survival 36%.

It is clear that there is scope for improvement, especially since the average survival is below the national average of 65% (Monitoring and Evaluation Unit, 1984).

Replacement has been carried out with 94,145 seedlings in 1984 and on 310 ha (about 187,000 seedlings) in 1985.

Table 1 PF and PPF Sites and Plantations in Ilam 1980-85[1/]

	PFs	PPFs	Total
Total No. of sites	73	54	127
Total area	1261.1	2268.0	3529.1
Areas planted			
1980	23	0	23
1981	55	0	55
1982	85.2	23	108.2
1983	177.9	41.4	219.3
1984	220.5	38.5	259.0
1985	288.7	80.8	369.5
Total	850.3	173.7	1024.0
Total area afforested or under forest	878.3	2268.0	3146.3
Replacement			
1984 (seedlings)			94145
1985 (ha)	203	25	228

1/ Areas are calculated with, resp. checked on demarcation and computer data.

2.8 Private Planting

Private planting is becoming increasingly popular in Ilam: in 1984, 111,000 seedlings were distributed to private planters. This was 86,000 seedlings in 1983. In 1985, 141,800 seedlings were already distributed before mid-July. Over the years, over 500,000 seedlings in total have been distributed. Table 2 shows the achievements per pear.

A private planting survey was carried out in 1984/85 indicating an average survival of 51%. Although this figures is rather low, it means that a total of 157,000 trees (if calculated by year) have survived on private land.

Table 2 Summary of Private Planting Distribution, 1981-84

Year	No. of Receivers	No. of Plants
1981	n.a	73,304
1982	n.a	97,584
1983	1452	85,895
1984	1856	110,687
1985 (till mid-July)	1801	141,824
Total		509,294

N.B: These figures may differ from other reports, since they are per season, not per Fiscal Year.

2.9 Forest Committees

Thirteen new Forest Committees have been established, eight in 1984 and five in 1985. The total number of Committees is now 15. Membership varies from 11 to 77 persons. All Forest Committees are chaired by Pradhan Panchas. In four Forest Committees, the CFA is a registered member. The participation of women is very low; only four Forest Committees have one female member each.

About the functioning of Forest Committees, see 4.3.

2.10 Forest Management Plans

A total of 24 management plans have been prepared to date, 10 of which were made in 1984 and 12 in 1985. They cover 13 PFs and 11 PPFs, or in total 811.1 ha. Table 3 sums up achievements.

None of the plans drawn up before 1985, including the two first plans of 1983, have been approved or implemented. Recently, however, some necessary adjustments were made, after which all 24 plans were approved. They will become operational from mid-July 1985 on.

Table 3 Management Plans 1983-85

	1983		1984		1985		Total	
	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)
PFs	1	30	5	109	7	133.5	13	272.5
PPFs	1	4.5	5	91.6	5	442.5	11	538.6
Total	2	34.5	10	200.6	12	576.0	24	811.1

2.11 Trial Plots

The two trial plots established in 1983 were regularly measured and evaluated. So far the main findings are the following:

The Khote Salla (Pinus roxburghii) trial planted under optimum conditions has failed almost completely after two years. Obviously this species which does not occur naturally in Ilam is ecologically unadaptable to this district.

Bare rooted seedlings of Dhupi Salla (Cryptomeria japonica) perform better than seedlings raised in polythene bags. This conclusion is only valid for optimum conditions of transport and care.

Winter planting is not likely to be successful in Ilam. However, a definite conclusion on this should be drawn later on when comparable summer planting results become available.

2.12 Training

Two PFF/PFW training courses were given: one on 21-27 May 1984 (7 days) to 14 newly appointed banheralos, and one on 20-25 January 1985 (6 days), with 27 naikes and 27 banheralos, i.e. almost all the village personnel of Ilam participating. The total number of training courses held in the District is four. The highest number of courses received by one PFF/PFWs is three. Table 4 expresses the level of training in Ilam. It shows that 80% of the PFF/PFWs has received more than one training course, and 22% has received three courses.

Table 4 Number of Training Courses Received per PFF/PFW

	Number of courses received				Total
	3	2	1	0	
No. of PFFs	11	12	4	1	28
No. of PFWs	1	20	6	0	27
Total	12	32	10	1	55

As for CFAs, three of them have never followed any MFTW course, while a fourth CFA has only had one course.

No study tours were allocated to Ilam in the last two years. However, the District received six groups of CFAs, forestry students and Pradhan Panchas from other places.

2.13 Extension

Informal extension forms an integral part of the activities of CFAs, naikes and banheralos. The project is by now widely known over the District. The nature of extension has in the course of years

shifted from more advertisement of the programme to technical advices accompanied by seedlings distribution. The popularity of private planting has already been mentioned.

More specifically, extension activities carried out are the following:

- Meetings. Meetings were held to establish Forest Committees, to discuss problems arisen with plantations, and to discuss the preparation of management plans.

- Distribution of Extension Material. Posters, booklets, logos and school wall charts continued to be distributed regularly. Calendars proved to be extremely popular.

- District Seminar. One District seminar was held on 18-20 March 1985. There were 22 participants, most of them Pradhan Panchas. Conclusions are discussed in 3.6.

- Arbour Days. Arbour Day ceremonials were held both in 1984 and in 1985.

- Signboards. Signboards were distributed to all nurseries which had none before. Some old signboards, however, still need to be replaced.

2.14 School Nursery

Assistance was given to Karphok Secondary High School, Pancha Kanya Panchayat, which established its own private school nursery. The naike of this nursery attended the latest PFF/PFW training course with good results. The nursery has a capacity of 10,000 seedlings. See also 4.5.

2.15 Stove Improvement

In total, 324 stoves have been introduced during the last four years. 85 stoves were distributed in 1984, and 176 in 1985. These stoves were all produced in Jhapa. More than half of the stoves were installed in Ilam; the rest was distributed over three neighbouring panchayats, and the second largest bazar in the District, Phikkal. In the latter panchayat, stoves were distributed and installed in cooperation with the Women's Development Office, and the two banks in Phikkal. Table 5 shows a breakdown of stoves distributed per year and per panchayat.

In 1984, two installers were trained besides the two who were trained before. Of these four, only the one who was trained in Kathmandu in 1983 continued to work regularly. In 1985, 12 installers were trained (1 in Ilam, 11 in Phikkal, among which 4 women).

Stove surveys were carried out both in 1984 and 1985. The latter survey showed that 85% of the previously installed stoves are still used to date. For details on stove improvement, see Chapter 6.

Table 5 Numbers of Stoves Introduced, 1982-85

	1981/82		1982/83		1983/84		1984/85		Total	
	Dist.	Inst.	Dist.	Inst.	Dist.	Inst.	Dist.	Inst.	Dist.	Inst.
Panchayat										
Ilam NP	4	4	31	24	76	72	68	68	179	168
Barbote	0	0	12	4	0	0	0	0	12	4
Sangrumba	0	0	13	13	0	0	26	26	39	39
Namsaling	0	0	2	2	9	9	7	7	18	18
Phikkal	0	0	0	0	0	0	75	n.a.[3]	75	n.a.[3]
- Women's Dev.Off.							(29)			
- RBB[1]							(15)			
- ADB[2]							(31)			
Total	4	4	58	43	85	81	176	101+[3]	324	229+[3]

Notes:

1. Rastriya Banija Bank.

2. Agricultural Development Bank

3. Distribution and installation through the 3 institutions in Phikkal is still in progress at the time of preparing this report. If all 75 stove sets are installed the total of stoves installed in Ilam in 1985 will be 176, and the total over all years will be 304.

3. THE LAND PROBLEM

3.1 General Situation

A number of technical problems encountered in the work arise directly or indirectly from the main socio-economic problem in Ilam: scarcity of suitable land. This will therefore be discussed first.

Reliable information on land use in Ilam is not available. Thunberg & Werner (1981b) give estimates, but these are based on the old district area (994 km^2) and have not been updated. The recently prepared land use maps by the LRMP have not yet reached the District, although they have been ordered.

In practice, however, the effects of land scarcity are more and more sharply felt; many panchayats run out of land or at least, out of Government-owned land. As a consequence, they tend to allocate unsuitable land for PFs, namely:

1. technically unsuitable sites for planting (too steep, stoney, etc.).

2. too densely forested sites; they are reluctant to apply for them as PPFs.

3. land of uncertain ownership status, upon which land claim disputes arise.

At the latest District Seminar, a number of decisions were taken to solve these problems, or their effects. First of all, the Panchayat leaders promised to allocate more lands for PFs. Further,

re 1. Suitable sites only would be selected for PFs.

re 2. Densely forested sites would no longer be applied for as PFs.

3.2 Land Claims and Encroachment

A number of cases of land claims and encroachments occurred in the last few years. Most of them are boundary disputes which arose after demarcation, and concern small areas. A few big cases arose: in Amchok, where a complete forest was claimed as private land, and in Ekatappa, where all previously established PFs and PPFs were recently claimed by a group of Limbus. While the second category of cases seems to be more inspired by political motives than by land scarcity, the numerous other cases are more directly related to the land problem.

The District Seminar participants decided that:

- Lands which were registered as private under the Cadastral Survey of 2029 (1970) would not be eligible for PFs.
- Unregistered land (Government wastelands) would be eligible for PFs.
- If at the time of demarcation any confusion emerged between Government and private land, the Survey and Maintenance Office would be requested to send a surveyor.
- Publid meetings would be held by the Panchayats before application.

3.3 Conclusion

Although these decisions will help to clarify procedures, it is inevitable that once, if the project succeeds, all plantable Government land will be afforested. It was therefore also agreed that private planting should be stimulated and technically, improved. This might well become one of the most important aspects of the project in the future (see Chapter 8).

4. PEOPLE'S MOTIVATION AND PARTICIPATION

4.1 The effect of Extension on People's Motivation

The message of Community Forestry which reached the population originally by word of mouth and later in the form of posters, booklets etc, is already well established. The project is by now well known in the villages. Nurseries, plantations and seedlings distribution are the main realities perceivedby the people. Posters and calendars are highly appreciated for their ornamental value - especially the later.

Less clearly perceived are the necessity of managing forests by the people's own efforts and the role of Forest Committees in this (see 4.3).

Although in general, goodwill towards the project has been generated by extension, it has also failed in places. In cases where land problems occurred, extension alone proved to be insufficient to convince people. As a result, plantations were sometimes badly protected, demarcation pillars destroyed, etc. At the District Seminar, Panchayat leaders promised to encourage people's motivation but they also recognised that land problems had to be solved first (see Chapter 3).

4.2 District Seminar

The aforementioned problems and many others were extensively discussed at the latest District Seminar. The participating Panchayat leaders showed great interest in the project and declared themselves prepared to take a more active part, namely in seed collection, protection, people's motivation, management plan implementation, administration of field work, and control of private

forest harvesting. The District Forest Office was requested to improve the technical quality of plantations, increase the budget allocation for seed collection, improve stove design, solve the fuelwood problem, and to cooperate with the Panchayats in the issuing of permits.

The decisions taken on the land issue have been discussed in Chapter 3.

The total text was reported to CFAD in Nepali. An English translation can be found in the CFAD District files.

4.3 Forest Committees

The position and role of Forest Committees was explained and discussed at the District Seminar. Before this, their importance, though explained at meetings, was generally not very clear. This was partly due to a lack of explanatory documents and partly to the non-implementation of management plans so far.

At the District Seminar, copies were distributed of the relevant parts of the Draft Guidelines for Management Plans (HMG/UNDP/FAO, 1983) on the status and terms of reference of Forest Committees.

As a result of the discussions, the following recommendations were made:

- Forest Committees should be formed in all panchayats where they have not yet been established. They will regulate the harvesting of forest products from PF/PPFs according to management plans.

- The Forest Committees should hold regular meetings in the presence of the concerned FFAs.

- Forest management plans should be implemented soonest possible.

In Ilam, all Forest Committees so far established are chaired by Pradhan Panchas. Ward leaders are also strongly represented. As a consequence, Community Forestry is very much linked with Panchayat affairs. This can work out positively or negatively, according to the interests of the prevailing political group. Where Forest Committees have not yet been formed, this is mostly due to disinterest or even opposition from the village leaders. The scarcity of women members may also be explained by this political character of Forest Committees, politics being a predominantly male affair.

In the future, therefore, efforts should be made to limit this political influence and to emphasise the original concept of the Forest Committee as a user group. To support this, the aforementioned explanatory texts from the Draft Guidelines should be made available in print on a large scale.

4.4 The Role of Women

The formal role of women in the project is limited. Only four out of fifteen Forest Committees have women members, and then still only one each. There are no female naikes or banheralos. The field staff is all male. Only the District Forest Office and one Range Office have one female clerk each. When the job of stove promotor was advertised in 1982, one woman applied but she was not prepared to travel alone in the field. However, recently four ladies connected with WDO/PCRW in Phikkal were trained as stove installers (see 2.15).

Women in the villages are to a varying degree involved in project activities. Naike's wives do a lot of work in the nurseries and often replace their husbands. For plantation work, women now get the same wages as men. It is striking, however, that the majority of seedlings collected for private planting were men. Further, since women (and children) are often cowherds, their role in

protection should not be overlooked. It is therefore significant that livestock damage was the main cause of mortality in private as well as Panchayat plantations. Apparently, although the message of Community Forestry must have reached most of the women, it has not induced them to take the necessary care. The cause must be sought in a lack of alternatives rather than a lack of interest: it may even be related to a shortage of grazing land.

To sum up, the conclusion by Stewart (1984) that the project's impact on women is limited by their low status in society, is valid for Ilam. Efforts to include women in the project should continue. Also, further cooperation with the WDO would be beneficial for both women and the project.

4.5 Involvement of Schools

Seedlings for private planting are often distributed to schools. The result varies greatly and depends on accompanying training, education, discipline and protection measures taken. The performance of Jitpur High School was outstandingly good, but many other schools failed to gain results.

The school nursery at Karphok High School (see 2.14) was established for the following purposes:

1. Education of students

2. Planting of unproductive land on school premises

3. Producing seedlings for sale (to the District or other interested parties).

This school was selected for District assistance on the following grounds:

1. Proven interest in the past: it had already established some Dhupi Salla (Cryptomeria japonica) plantations

2. Availability of a good nursery site

3. Availability of plantable land

4. Good access.

These factors should be considered when other schools are selected later on.

5. MANAGEMENT PLANS

5.1 Objectives of Forest Management

Although the texts in the management plans almost invariably contain the four "standard" objectives, like production of fuelwood, timber, fodder, and soil conservation, the greatest interest of the population was in timber production, directly followed by fodder.[1/]

5.2 Forest Types

Most of the concerned forests were of the middle-hill Chilaune-Katus (Schima wallichii- Castanopsis spp.) forest type, in various degrees of degradation. Some of these forest had only invaluable species left, such as Kharaney and Jhingane (both Symplocus spp), "Pipire", "Beppare" and others. Three forests at lower altitudes consisted of mixed broad-leaved species related to the Sal (Shorea robusta) forest type, and two forest at higher altitudes contained oaks and rhodedendrons, respectively Chutro (Berberis sp.) brush.

5.3 Management Systems

A coppice system as suggested by Troensegaard (1984) could only be applied to those forests which have enough valuable trees or stumps per ha. In fact, it has been tried when plantations were established in brushland. Where enough valuable species were available, it was successful, if perhaps not on the part of the plantation. Where only "weed trees" were available, the result was a forest of low value. In the latter case, strip clearing along contours (erosion), planting and intensive weeding might be the only solution to restore productivity.

1/ N.B.: This is for PPFs. For private planting, fodder scores highest.

For high forests (PPFs), the general lack of growth data hampered the determination of optimal management systems. They were therefore confined to limited extraction of forest products.

5.4 Demarcation and Maps

Copies of demarcation maps, when available, were used in the field during inventories. The quality of these maps varied greatly, and most of them could do with improvements (see Chapter 10).

When they were available, computer maps were used for the management plan forms.

5.5 Inventory

Inventories were carried out by CFAs and teams of naikes and banheralos. The technical execution, after some training, did not provide any problems, but the difficulty lay in the mathematics before and afterwards. Although the CFAs understood the Draft Guidelines (1983) they were not able to apply them independently, e.g. for the calculation of sample plots. Simplifying the survey as Troensegaard (1984) suggested, would not improve this. It needs a Diploma level officer (Attached Officer) to supervise the calculations. PFs were also inventoried when they contained substantial amounts of old wood (for fuelwood). The estimated volume of fuelwood was calculated in one PF (Bhalu Kateri), which contained stumps of a fairly limited number of species.

5.6 Product Distribution

In all plans a conservative approach was followed. Restrictions on forest product collection were made in terms of time, quality, beneficial wards, and finance. In some cases the villagers wanted

more than a reasonably safe amount, but after discussions with the Forest Committees acceptable settlements were reached.

5.7 Protection and Enforcement

Forest watchers and firelines were planned in almost all PF/PPFs. The necessity and nature of enforcement caused a lot of discussion in several Forest Committees. A reluctance to formulate penalties had often to be overcome first. It is here that their role as active executioners of the plans became most clear.

5.8 Concluding Remarks

All 24 plans were approved by July 1985. Their implementation will start on Saaun 1, 2042 (16 July 1985).

The recommendations made by de Pater (1984) on management plans in general are also valid for Ilam.

6. STOVE IMPROVEMENT

6.1 Production

Although improved stoves are extremely popular in Ilam and the results until now seem satisfactory, the programme has met serious obstacles. The main constraints were already mentioned by Olsson (1983):

- Good clay is not available in the district

- Potters are scarce, and not very interested in stove production in spite of repeated training.

To overcome these problems there are the following options:

1. Production of stoves in the Terai with subsequent transport to Ilam.

2. Production of stoves in Naxalbari, India, with subsequent transport to Ilam.

3. Transporting clay to Ilam and arranging for potters either from the Terai or from Kathmandu valley to produce stoves in Ilam.

Option 1 has been tried for the last two years. The stoves, made by potters in Danawari, Jhapa District, were of good quality. The price per set was Rs. 80 in 1984 and Rs. 82 in 1985. However, the following problems encountered make it doubtful if this option is viable in the future:

- Breakage during transport is excessively high; the budget does not allow production of enough extra stoves for compensation.

- Transport costs are extremely high, and cannot be fully supported by the budget. Since the District vehicle is not available (see 7.3), trucks have to be hired against local prices which are higher than the established HMG rates.

- The procedure of public tender, required for the sums involved, cannot be applied because the potters are not registered. Unlike Kathmandu, there is no Cottage Industries Board in Ilam to arrange this matter. Payments higher than Rs. 5,000/- have therefore to be made in parts, each of which requiring a separate trip to the Terai by the stove promotor.

- The travels of the stove promotor to the Terai are costly and were at first not fully foreseen in the budget. Although his travel costs are now being reimbursed, his daily subsistance allowance is still in consideration.

- There is much pressure on the potters of Jhapa to make stoves; since they are the only ones in the area, they are approached by other programmes too: UNICEF - Biratnagar has placed an order for 2000 stoves for next year, which will consume their whole capacity.

Option 2 was investigated, but not applied. Although the quality of pottery in Naxalbari is superior to that in Jhapa, and prices are slightly lower, the fact that the place lies across the border, be it near Ilam, makes it undesirable.

Further all the above mentioned constraints apply here too. However, this option might still be considered for a case of emergency.

Option 3 requires some organisation, but it might prove to be the most viable one if tried. It has the following advantages:

- No breakage during transport.
- Less transport costs if the clay can be brought up in one trip.
- Almost no cumbersome travels to the Terai (except for clay).
- Less travel costs for the stove promotor.
- Better quality control.

On the other hand there are the following points to be looked into:

- Potters have to be found who are interested in stove production and willing to stay in Ilam for some time.
- A workplace with sufficient water and space, as well as lodging has to be arranged in the Nagar Panchayat, and perhaps in Phikkal too.
- Travel costs and subsistence allowance have to be considered.
- The price of the stoves has to be settled anew.

As for the first point, a group of 12 potters was found in Ekatappa Panchayat. At present, they produce raksi pots etc., but out of inferior clay. They have not yet been approached for stove production. Other possibilities for recruitment are Naxalbari, and Kathmandu (Thimi).

6.2 Distribution and Installation

In 1984, due to transport problems, most stoves arrived late in the season (end May). Distribution was done according to namelists of

applicants provided by the Pradhan Panchas. It was found, though, that once the stoves were available, people were slow in collecting them. Also, since the planting season set in, the installers had difficulties finding people at home or prepared to help with installation. In 1985, this situation was improved by a more timely start.

Locally trained stove installers often disappeared soon after their training. This is understandable since their work is only temporary and paid at piece rate. The Kathmandu trained installer did most of the work around Ilam.

6.3 Use of the Stoves

A "Second Stove Survey" (see Bhattarai & Campbell, 1984) was carried out in the two last years. The results of the latest survey (around January 1985) are shown in Table 6. It appears that the stoves of 1983 were still for 75% in use, and those of 1984 for 96%. The former were produced in Ilam NP, and were of clearly inferior quality than the latter ones from Jhapa. Complaints concentrated on the following:

- The stoves were too small, and therefore slow in cooking.
- The mouthpiece was too narrow, so that only very small bits of wood could be used.
- The insert chambers broke easily.

Table 6: Results Stove Survey 1985

Year/Panchayat	Total installed	No. of stoves in survey		% Used
		Total	Used	
1981/82 total:	4	4	2	50
- Ilam NP	4	4	2	50
1982/83 total:	43	20	15	75
- Ilam NP	24	19	14	74
- Namsaling	2	1	1	100
- Barbote	4	0	0	n.a.
- Sangrumba	13	0	0	n.a.
1983/84 total:	81	73	70	96
- Ilam	72	65	62	95
- Namsaling	9	8	8	100
Total 1982-84	128	97	87	90

Although the Jhapa stoves were to some extent improved on these points, the problems remains that only one design is used in the programme which does not serve large families and teashops etc, and so limits the selection of users. The design is also not accepted by traditional Rais and Linbus who require a three-stone fire place on religious grounds. Improvement of the design was recommended at the District Seminar.

6.4 Maintenance and Repair

A great deal of the promotor's time apart from surveys, was spent on checking installation and teaching people how to clean the stoves. The posters for this purpose were widely distributed.

Often after sometime repairs were needed requiring spare parts. The non-availability of these is a problem. They are not, as was originally envisaged, available on the market, even though most stove users are prepared to pay for them.

6.5 People's Motivation for Stoves

According to motivation, the stove receivers of Ilam can be divided into two groups: those who are really interested in using the stoves, and those who regard them as a cheaply obtained showpiece. The latter tend to have the stoves installed in an inconvenient place, often without consulting the cook. They are also less inclined to contribute any efforts of their own to installation or cleaning. Fortunately, the group of real users is the greatest. Still it is felt that people's motivation could be increased if a contribution in terms of money was required. This would rule out a great part of the 'fancy users' while, if the price is reasonable, it would be no serious impediment for the really interested, the programme being concentrated on the more urbanised panchayats where cash circulation is common.

6.6 Cooperation with the WDO/PCRW

The WDO who think along the abovementioned lines are now trying out an intermediate procedure: receivers pay the installation fee (Rs. 20) directly to the installers. The latter deposit half of this into the Treasury Fund of the Women's Welfare Committee at the RBB, and keep the rest as a salary. All stoves are afterwards checked and surveyed by the District's stove promotor. At the moment WDO are also collecting data on fuelwood savings.

Stove introduction in Ilam benefitted greatly from the cooperation between the District and WDO. It is hoped that this cooperation will be continued in the future.

7. ADMINISTRATIVE AND LOGISTIC ISSUES

7.1 District Staffing

The proportion of vacancies is highest in the officers' and other high categories. The places for Attached Officers, one of whom would be entirely assigned to Community Forestry, have never been filled. A Senior Accountant worked in the DFO until his transfer in July 1984, after which his post remained vacant. Needless to say that this lack of higher educated expert manpower impeded the work of the rest of the staff. The Range Offices suffer from a shortage of Rangers and Assistant Rangers. Since these offices are involved in some of the practical aspects of Community Forestry, this shortage has an impact on the programme too.

7.2 Attendance Registration of PFF/PFWs

In 1984/85, the rule was made that naikes and banheralos should have their daily attendance registered with the Pradhan Panchas and CFAs as a pre-condition for their payments. Since daily registration at Panchayat offices was impractical, signatures on attendance lists were obtained at the end of each month. At the District Seminar a more complex procedure was introduced involving daily registration at ward leader's houses and weekly reporting to Panchayat offices.

Although this rule has the merit of a better control over the movements of naikes and banheralos, it has also caused problems in the past when the necessary officials were absent. It should be applied with wise consideration and the ultimate judgement should be based on the quality of the work performed.

7.3 Transport

A landcruiser was assigned to the District for Community Forestry work in autumn 1983. Since then it has been on duty for HMG in Kathmandu.

As a great number of sites can be reached partly or totally by motor, a vehicle would save much time. The stove programme, too, would have benefitted from improved transportation. For the future, the allocation of a vehicle to the District is strongly recommended. Alternatively, motorbicycles might be considered.

7.4 Record Keeping

Until last year record keeping and filling has been a weak point in the District administration. The following factors hampered good documentation:

- The great number of register and reports: information on one PF/PPF is spread over at least three registers, and that of one panchayat over nine or more.

- The great number of sites (127 at the moment) which is still growing.

- Transfers of DFC and CFAs, and thereby loss of information which was left to memory, or mis-filed.

- The lack of facilities for systematic filing.

- The filing system per Fiscal Year instead of per panchayat and site.

- Consequently, loss of especially earlier information.

As a result, cross-checking was difficult and inconsistencies and hiatuses were not easily recognised.

During the last year, the District has improved its recording system considerably. Further improvements could be made if they were provided with modern filing cabinets in which all information could be stored systematically. They should also be supported in their plans to summarise information on each PF/PPF site on summary sheets like the ones used for Government plantations.

8. THE IMPACT OF COMMUNITY FORESTRY ON ILAM DISTRICT

Now that the first five years of project operation have come to an end, the question should be raised whether and to what degree the work was successful: how far has the project contributed to fulfilling the people's needs for forest products? The answer to this may lead to conclusions as to how to continue the project in the next period.

Achievements have already been summed up before: 22 participating panchayats, 28 nurseries, establishment of 1261 ha of PFs, of which 9865 ha has been handed over, 1024 ha of plantation, 2164 ha of PPF handed over, and over 500,000 seedlings distributed for private planting. How much will these plantations produce and what part of the demand will they fulfill?

We can only answer this question to some extent on the part of fuelwood. For fodder, timber and other products, though no less important, elementary data are lacking. A quantitative evaluation of these is therefore hardly possible. A qualitative description has already been given by Thunberg and Werner (1981b), and Olsson (1983).

The fuelwood situation has been studied by Thunberg & Werner (1981b) and by Ghimire (1985). The latter calculated the fuelwood consumption of Ilam for the period of 1988-2002 (15 years) at 2,413,999 tons. At a fresh weight density of 960 kg/m^3, this is 2,514,582 m^3.

For estimating the production of PF/PPF plantations, a rotation of 15 years and an annual increment of 8 m^3/ha/yr is assumed. The last figure is lower than the assumption of Thunberg and Werner (1981a) because stocking is generally only 60-70%. Production of

the present 1435 ha of PF/PPF plantations over 15 years will thus be:

$$1435 \times 8 \times 15 = 172{,}200 \text{ m}^3.$$

Annual growth of PPFs (existing forests (2268) excluding planted areas - 174) is difficult to estimate but might probably be around 4 m^3/ha/yr on the average. These areas (2268 ha including the ones still under application), will thus produce in 15 years:

$$(2268-174) \times 4 \times 15 = 125{,}640 \text{ m}^3.$$

Total production from the present PFs and PPFs in 15 years = 297,840 m^3.

Private plantations, although in the first place established for fodder, will also yield fuelwood. From the latest survey it can be learnt that around 157,000 trees must have survived. This is equivalent to around 90 ha of plantation (1700 trees/ha). Increment of such a forest will be lower than Thunberg & Werner's average of 12 m^3/ha/yr, because the trees are lopped and are also often not professionally treated otherwise. Therefore, 8 m^3/ha/yr is assumed, which leads to an additional production of

$$90 \times 8 \times 15 = 10{,}800 \text{ m}^3.$$

The total production from Community Forestry in 15 years is thus: 308,640 m^3 which is 12% of the total demand.

The rest of the demand is at present met from bamboo (appr. 33%), Utis-cardamom plantation (14% according to Ghimire, 1985), Government forest, single trees on cropland and grassland, and agricultural residues (together 41%).

As Thunberg & Werner (1981a) already pointed out, the increasing pressure on the existing forest may lead to depletion of the standing stock before long. Their estimates for demand were somewhat higher than those of Ghimire (1985) but even so their reasoning that a substantial amount of plantation would be needed to replace the old forest remains valid. If we take their rather optimistic growth rate of 15 m^3/ha/yr, the area needed would be 11,200 ha. If we assume a minimum figure of 8 m^3, it would be 21,000 ha. The reality will be somewhere in the middle (16,000 ha), which is close to the assumption of the District of 15,000 ha.

It is clear that this cannot all come from PFs. The scarcity of land for this purpose has already been pointed out (Chapter 3). Perhaps for the next 6 years of project life, 1200 ha could be made available (6 x 200). Applying the former assumptions, they would produce around 144,000 m^3 in 15 years. Further contributions must therefore come from well-managed PPFs, and private planting.

As for the latter, if another 100,000 trees per year is distributed in the next 6 years, this makes 600,000 trees, or over 350 ha equivalent. If average survival remains as low as 51%, their production in 15 years would be 21,420 m^3.

It is difficult to predict how many additional PPFs can be handed over and managed in the next six years. If the present target for management plans of 200 ha is maintained and half of it is taken up by PPFs, another 600 ha of PPF will be added to the managed forest. Their production over 15 years, assuming the same annual growth rate as before (4 m^3/ha), can be estimated at 36,000 m^3.

The total production generated by Community Forestry activities envisaged for the next 6 years will thus amount to 201,420 m^3, which is 8% of the total demand. The first and second phase of the

project together will therefore contribute 20%. However, further increases are possible when management of PPFs appears to be more favourable and especially, when more attention is paid to private planting. If landowners could be encouraged to plant private lands in the same way as plantations, and manage them scientifically, the problem of land shortage could be overcome. How much land would be available for this purpose is at the moment not known: the landuse data of Thunberg & Werner (1981a,b) are outdated, and new figures from LRMP are still awaited. Still, it is believed that the average of 300 ha per panchayat estimated by the same authors could be reached this way. But a pre-condition is that the private planters should get profound training and assistance to attain the same survival rates as PFs.

So far, the impact of the stove programme on the district in terms of fuelwood volume saved is negligible. The 304 stoves installed until now would save 0.15 - 0.32 m^3 per year when the estimates and presumptions of Campbell & Bhattarai (1984) are used. Of this, only half of it would come from public forest, i.e. 0.08 - 0.16 m^3 per year. For 15 years this means a saving of 1.1 - 2.4 m^3.

However, there is a monetary gain for the forest as a whole as well as for individual households. If the Ilam price of Rs. 10 per bhari, and Ghimire's estimate of 15.5 kg per bhari are applied, annual savings would range from Rs. 42,350/- to Rs. 106,700/-. Even the lowest sum represents more than the total cost of the programme until now, which is in itself a reason to continue it.

The savings per stove would be Rs. 279 to 702 per year which are considerable enough to make the stoves as popular as they are. The secondary benefits for the people as well as for the project (notably the propaganda aspect) should not be overlooked either.

As for future results, it is too early to speculate on them before the present technical and logistic problems are solved. Only when stoves are made available and used on a large scale, the programme can be considered successful.

To sum up, the impact of the project would reach much farther than the 20% calculated. If technical skills will become a common good among villagers, and if awareness of the forestry problem is translated by them into productivity-increasing activities, this may well contribute to decrease shortages, not only of fuelwood, but also of fodder, timber, and other products from the forest.

9. CONCLUSIONS AND GENERAL RECOMMENDATIONS

From the foregoing it is obvious that there is need and scope for continuing Community Forestry in Ilam. The present success, though, would be best continued with some alterations in policy. Since Government land for PFs is becoming scarce, private planting and management of existing forests should receive major attention in the future.

As for private planting, there are no great obstacles with regard to people's motivation and interest: productivity, however, could still be improved. Training and education at village level should therefore be emphasized. School nurseries should be further encouraged.

As for forest management, the basis for it has been laid by the 24 management plans prepared so far. Its ultimate objective is to attain the highest productivity possible for PF and PPFs. Experience will show how far this objective can be reached. The challenge here lays not only in reaching this technical goal, but also in creating maximum involvement of the forest-using people. The role of Forest Committees will be more profiled as management implementation proceeds. Technical training of Forest Committee members is recommended in this respect.

In all parts of the programme, the quality of production has been fairly satisfactory and showed an upward trend. This should be continued, and as far as possible improved in the future. Therefore, further training and motivation of PFF/PFWs, CFAs and other District staff involved should be realised.

During the last five years, the District staff has faced the problem of administrating an increasingly complex programme. Until now, in

spite of vacancies and other constraints they have done their best and proved to be able to cope with the growing number of activities. But when the programme will be further intensified, their number should be increased accordingly, if only for the sake of quality control. The appointment of Attached Officers on the two vacant posts and the assignment of one or two additional CFAs, are considered minimum requirements.

It is further obvious that budgetary and material constraints, which have for a great deal been removed in the past years, should not return in the future.

10. SPECIFIC RECOMMENDATIONS

1. Demarcation maps should be complete and consistent with reality; names, landmarks, orientation should be noted. Sketch maps made during demarcation would facilitate later drawing.

2. All demarcation maps and books should be checked with the computer at CFAD.

3. Seed collection could be improved if more budget for this purpose were made available to the District. Also, seed collection equipment should be provided and forest guards should be sent to the Tree Seed Unit in Kathmandu for training.

4. Nursery productivity should be further increased. Nursery Operations Plans should be frequently consulted and revised when necessary. The present quality of the necessary techniques should be maintained and where necessary, improved. The production of cuttings and fodder grasses should receive due attention. The poplar cuttings recently planted in the District Nursery should be distributed to the Panchayat nurseries for stools.

5. Species selection should concentrate on "high altitude" and wide-ranging species, especially for fodder and timber.

6. Planting of fodder grasses like Amliso (Thysonalaena maxima) under PPF forests should be tried. In appropriate places, cardamon might also be considered.

7. Forests with more than 30% of trees should be handed over as PPFs, not PFs. They should be managed according to their conditions, taking the possibilities of recoppicing into account.

8. Site description and classification as well as species selection should be included in the MFTW training courses for CFAs.

9. Land clearing before plantation should be done throughly. In erosion-prone areas, strip-clearing along the contours should be practised. Controlled burning may be carried out in heavily infested areas, e.g. Bammara (Eupatorium adenophorum) land or Chutro (Berberis sp.) brush, but of course only with utmost care.

10. Protection of plantations should be intensified, especially on the point of grazing. Firelines should have correct dimensions and tracing.

11. The recent insect infestation of Cryptomeria japonica should be further researched in order to take appropriate control measures.

12. Plantation registers and other records should be kept up to date and filled in correctly and completely.

13. Training courses for private planters should be organised in the panchayats. Naikes and banheralos should assist in these courses; they should also be encouraged to give individual instructions. For these purposes they should receive some training.

14. Administrative and financial constraints to the implementation of management plans should be removed.

15. All members of Forest Committees should receive their terms of reference and other relevant regulations in print. Active members from each committee should be trained in the basics of forest management.

16. Women should be more encouraged to participate in Forest committees and other Community Forestry activities.

17. Incentives for good work performance should be given at all levels, not excluding District Forest and Range Office staff.

18. T-shirts should be given to (outstanding) District Forest and Range Office staff and personnel.

19. Training of CFAs, especially those with no previous training, at the firstcoming MFTW Training Course is strongly recommended.

20. Study tours for CFAs, Pradhan Panchas and Forest Committee members should be allocated to Ilam.

21. More school nurseries should be included in the programme, but under condition that the schools provide their own nursery foremen and suitable sites for the nurseries. In addition, class lectures and other educational activities on forestry should be organised.

22. Private nurseries should be encouraged and assisted by the District.

23. The production of improved stoves in Ilam by potters from elsewhere and with imported clay should be tried out. Instead of free distribution, the charging of a nominal price might be considered in order to increase their value in the eyes of receivers. Cooperation with the WDO should continue.

24. The district should be provided with modern filing equipment for the systematic administration of project activities.

25. A vehicle or motorcycles should be made available to the District.

26. The vacancies in District staffing should be filled.

27. When the LRMP land use maps become available to the District, they should be evaluated in order to estimate the scope and limitations of Community Forestry in the district.

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