



IMPLEMENTATION
OF
SOCIAL FORESTRY EXTENSION ACTIVITIES

FROM
1987/88
TO
1989/90



C.N. ONG'WEYA
O. EDAZAWA

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KENYA/JAPAN SOCIAL FORESTRY TRAINING PROJECT

PILOT FOREST SUB-PROJECT

PROJECT WORKING PAPER NO. 7-1

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1. INTRODUCTION

The main phase of the Kenya/Japan Social Forestry Training Project has started in November 1987 after the Preparatory Phase of two years.

Objective of the project is to conduct training in social forestry at the national and regional levels and to implement the Pilot forest Scheme combined with training at the regional level and thus contributing to the development of capabilities for social forestry training in Kenya.

The project has two Sub-projects, one is "Training Sub-Project" which is located in Muguga and Kitui, and the other, "Pilot Forest Sub-Project"

"Pilot Forest Sub-Project" is located in Yatta B2 location of Central Division, Kitui District, which is in the semi-arid area (See Map 1).

The aim of the Pilot Forest Sub-Project is to achieve technical development and improvement of afforestation for social forestry in semi-arid area through establishing the pilot forest.

The Pilot Forest Sub-Project has been carrying out three groups of activities namely; (1) Nursery, (2) Trial Plantation, and (3) Forestry Extension.

The aim of "Forestry Extension" group is to find out, together with training activities of the Kitui Social Forestry Training Center, more suitable ways of social forestry extension work for the people at the grass-roots' level in semi-arid area through establishing the model area. It is hoped that the appropriate ways of social forestry developed and improved by the project would then be disseminated to the other semi-arid areas of Kenya through the activities of Training Sub-Project.

2. ORGANISATION

"Forestry Extension" group consists of one forester from KEFRI (Kenya Forestry Research Institute), one Japanese expert from JICA (Japan International Cooperation Agency), one supporting staff, two head foremen and some more foremen assigned as staff.

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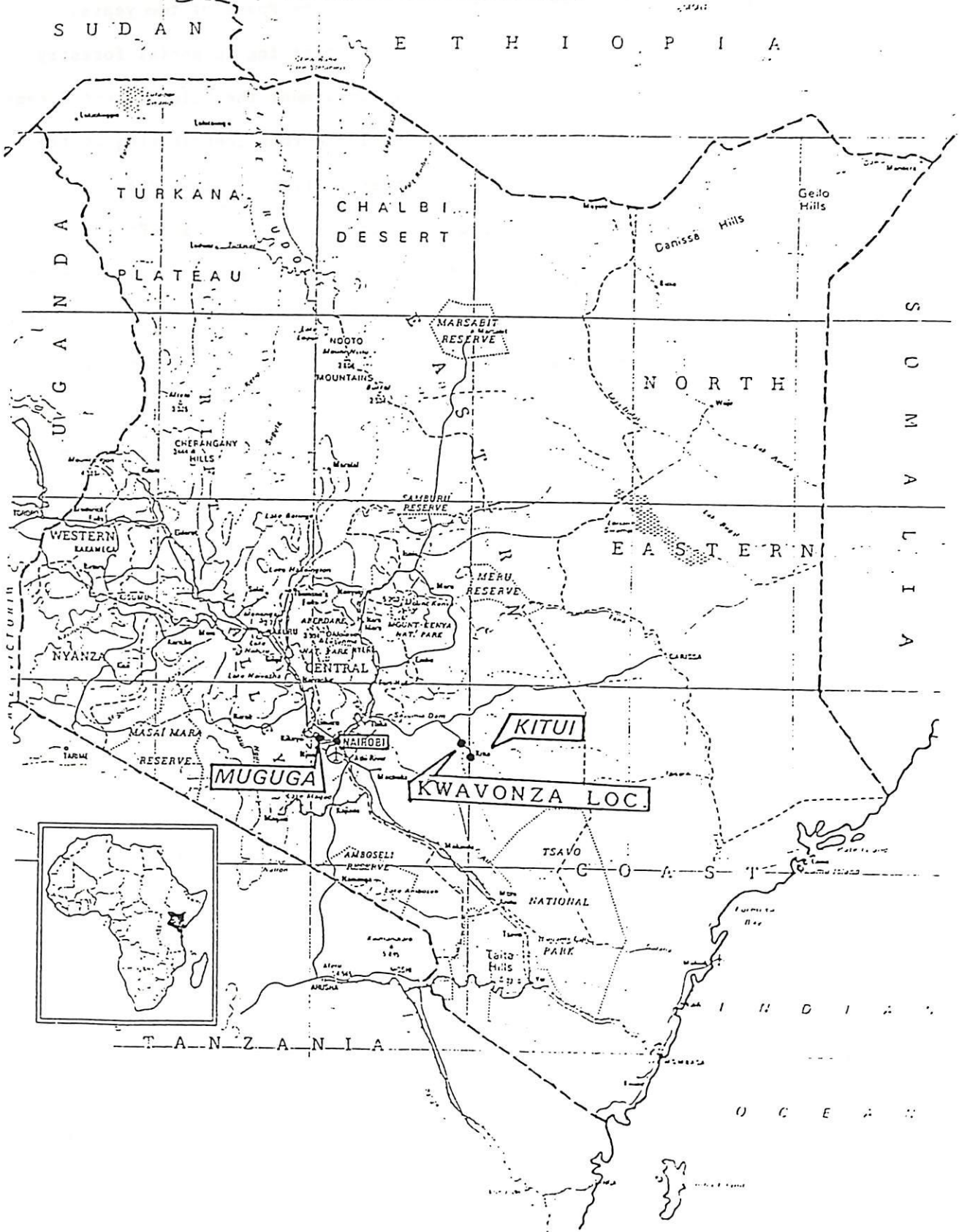
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Map 1

KENYA

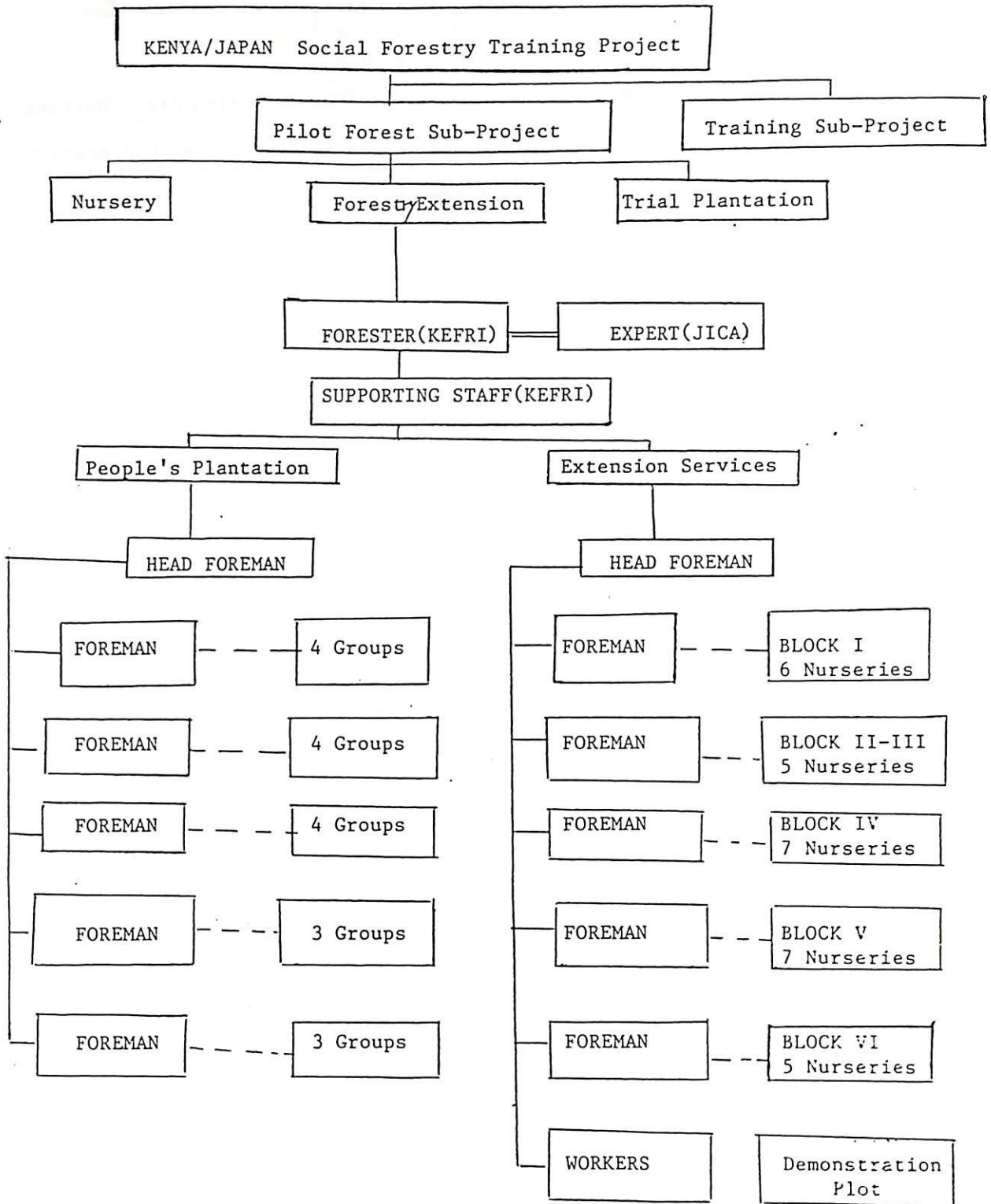


The organisation of the group is as follows (See figure 1).

The staff meeting, named "The Extension Staff Meeting" is held once a month in principle so as to discuss daily operation, progress of work, arising matters etc.



Figure 1 Organisation of the Forestry Extension group



3. IMPLEMENTATION

3.1 People's Plantation

3.1.1 Survey on Mwethya groups in Yatta B2 location

(A) Purpose

The project expects that the women's voluntary groups in the area called "Mwethya Group" can play a substantive role in social forestry extension by including tree planting in their group activities.

The project would carry out surveys in order to know how many Mwethya groups there were in Yatta B2 location, what kinds of activities they were doing and if they were interested in tree planting activity and so on.

(B) Method

The survey was carried out from November 1987 to January 1988 in cooperation with the Chief of Yatta B2 location. The extension staff visited the chairpersons of Mwethya groups and interviewed them with a questionnaire (See Annex 1).

(C) Results

The survey results showed that;

- i) There are a total of 45 active Mwethya groups in the location
- ii) They carry out group activities including soil conservation (terrace construction), goat raising, bee keeping, basket making or to help each other in their life etc.
- iii) The groups have two types of members, i.e. "working members" and "non-working members," Working members carry out group activities by themselves and non-working members are to pay money instead of carrying out group activities personally.

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iv) The number of group members of each group ranges from six to 34 persons, an average being 17, while that of working members is between six and 26, an average of 13.

v) Almost all the groups do not have experience in tree planting as group activities (only two groups have), but all 45 groups answered that they were interested in tree planting activities.

A summary of the survey results is shown in Table 1 and the locations of the groups are indicated on Map 2.

Some new Mwethya groups have been established for these several years so that the total number of the groups in location might have increased.

Table 1 Mwethya groups in Yatta B2 Location


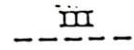





No.	Block	Name	Year of establishment	No. of members			experience in tree related activities	interest in tree planting	remarks
				Total	working	non-working			
1	I	Ikinya Cut-off	1979	20	17	3	No	Yes	
2	I	Isaalala	1979	13	10	3	No	Yes	
3	I	Kavingo	1975	15	15	0	No	Yes	
4	I	Manyanzaani	1980	18	15	3	No	Yes	
5	I	Mukilye (1)	1986	15	8	7	No	Yes	
6	I	Mukwa	1976	26	26	0	No	Yes	
7	I	Top	1982	21	19	2	Yes	Yes	
8	II	Kaliluni	1985	17	9	8	No	Yes	
9	II	Kamulu	1982	13	13	0	No	Yes	
10	II	Kaumoni	1977	13	11	2	No	Yes	
11	II	Kilulini	1976	12	7	5	No	Yes	
12	II	Kyanduu	1980	21	14	7	No	Yes	
13	II	Masola	1986	17	10	7	No	Yes	
14	II	Muli	1987	22	10	12	No	Yes	
15	II	Uthethyo Wa Kavisuni	1982	20	12	8	No	Yes	
16	III	Ithyoa Ngingo	1977	17	8	9	No	Yes	
17	III	Kataka	1977	15	14	1	No	Yes	
18	III	Kathita Mũũ	1977	12	10	2	No	Yes	
19	III	Maithya	1977	15	10	5	No	Yes	
20	III	Masimbari	1986	34	25	9	No	Yes	
21	III	Mbũvũũni	1977	25	20	5	No	Yes	
22	III	Metho	1978	17	10	7	No	Yes	
23	III	Mutwota	1984	28	16	10	No	Yes	
24	III	Uthetyee Wa Asee	1985	8	8	0	No	Yes	Men's group
25	IV	Ituka Tene	1985	14	10	4	No	Yes	
26	IV	Kiwuni	1977	20	15	5	No	Yes	
27	IV	Kuweta	1977	17	13	4	No	Yes	

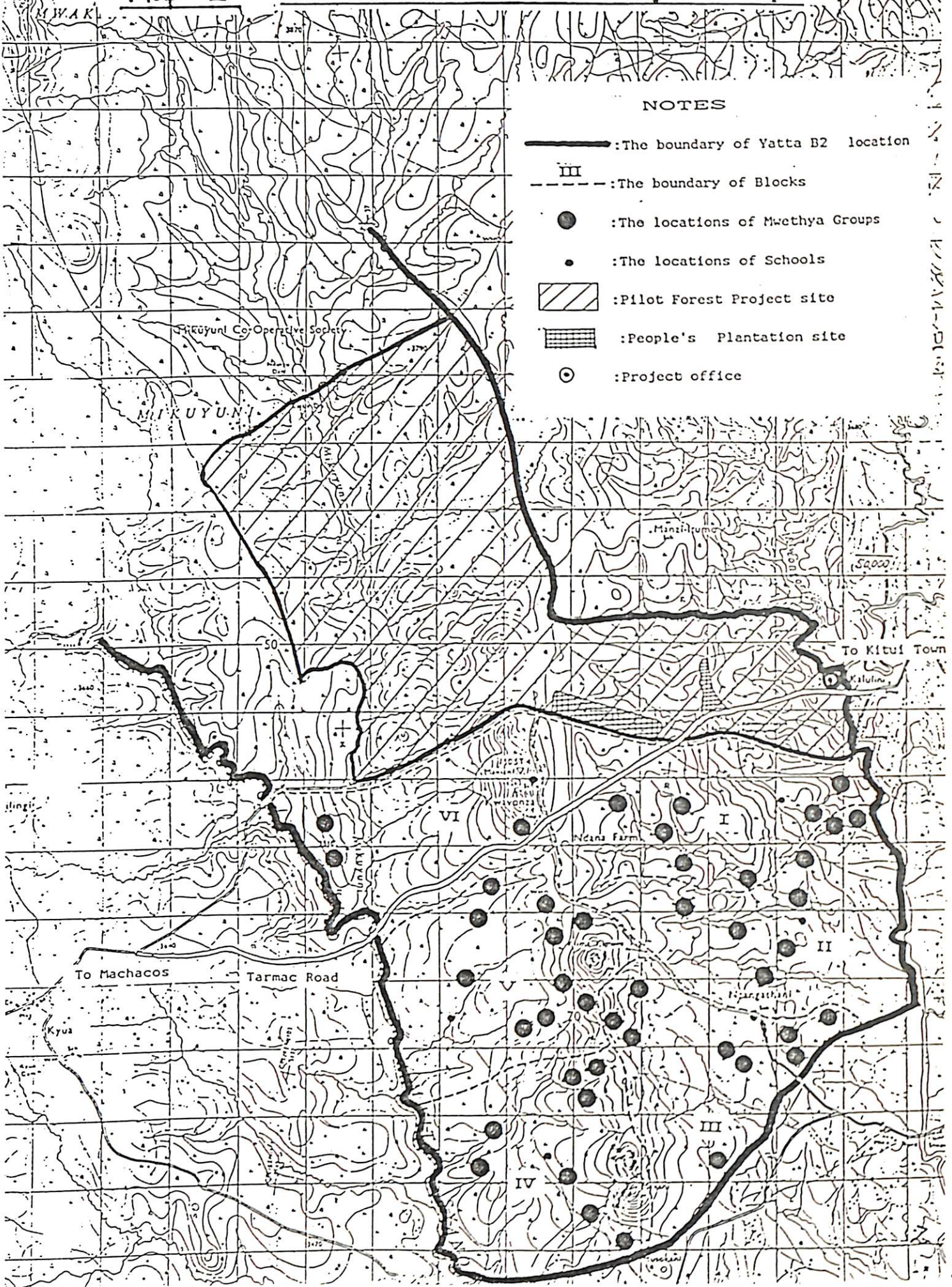
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No.	Block	Name	Year of establishment	No. of members			experience in tree related activities	interest in tree planting	remarks
				Total	working	non-working			
28	IV	Kyeni	1977	14	10	4	No	Yes	
29	IV	Mathuva	1982	19	9	10	No	Yes	
30	IV	Mutethya	1977	6	6	0	No	Yes	
31	IV	Mweu	1984	20	12	8	No	Yes	
32	IV	Vinya Wa Masaani	1985	16	13	3	No	Yes	Men's group
33	V	Itambya Ya Mbee	1975	24	21	3	No	Yes	
34	V	Kamanze	1987	15	8	7	No	Yes	
35	V	Kavongoka ^{lo}	1977	10	9	1	No	Yes	
36	V	Kiima Kimwe	1984	10	7	3	No	Yes	
37	V	Mukilye (V)	1968	12	12	0	No	Yes	
38	V	Mutile	1984	18	18	0	No	Yes	
39	V	Mwende	1984	18	17	1	No	Yes	
40	V	Ngamyone	1977	13	13	0	No	Yes	
41	V	Ngengi White	1985	15	11	4	No	Yes	
42	V	Vinya Wa Anake	1985	12	12	0	Yes	Yes	Men's group
43	VI	Kasuu Kakya	1984	18	18	0	No	Yes	
44	VI	Umanyi	1984	25	12	13	No	Yes	
45	VI	Wimano Wa Mikuyuni	1983	18	18	0	No	Yes	
TOTAL				768	583	185	Yes 2 No. 43	Yes 45 No. 0	
AVERAGE				17	13	4			

Map 2 The locations of Mwethya Groups

NOTES

-  :The boundary of Yatta B2 location
-  :The boundary of Blocks
-  :The locations of Mwethya Groups
-  :The locations of Schools
-  :Pilot Forest Project site
-  :People's Plantation site
-  :Project office



3.1.2 Trial plantation by two pioneer groups in 1987/88

(A) General

During "Preparatory Phase" of the project, it was decided that the project (represented by Director KEFRI) would lease a portion of the project land free of charge to the Mwethya groups and help them to plant trees on that portion of land by providing them with free seedlings, technical advice and working tools etc. The seedlings which were planted by group members belong to them.

The purposes of this approach are;

- i) To find out if the Mwethya Groups can include tree planting in their group activities and if the groups can play a substantive role in social forestry extension by doing so.
- ii) To spread the improved techniques on tree planting to other farmers in the location; through their participation in "People's Plantation" at the project site.

In 1987/88, two active Mwethya groups, namely Muli group and top group were chosen from Yatta B2 location and assisted by the project as pioneer groups.

Muli group from Block II had 22 members out of whom 10 members (all female) were working members, while Top group from Block I had 21 members out of whom 19 (17 female and 2 male) were working members. The location of both groups were near the project site.

These two groups were allocated lands in the project site in October 1987.

(B) Field work

a) Clearing (Site preparation)

The groups started clearing at the end of October 1987 and finished it in early November. They cleared all the bushes in the plantation site apart from standing trees.

Muli group carried out clearing of 0.40 ha (1 acre) and Top group 0.16 ha (0.4 acre). The reason why Top group could not clear more than a small area was presumably because that the average age of the working members was relatively high.

Pangas were used for clearing.

b) Fencing

Actually, making a fence surrounding plantation area is very important work in this area for keeping away animals, such as cows, goats and sheeps etc., from entering the plantation site. The groups fenced along the road with bush which they cleared for plantation. In the fence, small gates were made so that people could pass through.

c) Pitting

Pitting (digging holes for plantation) was done in the middle of November. Jembes and Mattocks were used for pitting.

The spacing of the holes was 3.3 m x 3.3m, this meant that the planting density was 1,000 seedlings per hectare.

Muli group dug 400 holes by employing workers who were paid 1 Ksh per hole by the group, while Top group dug 160 holes by themselves because they did not have enough money to employ workers.

The size of holes were 45 cm diameter x 45 cm depth.

d) Refilling soil

the soil was refilled on 18 and 20 November after the holes had got enough moisture. At the same time, micro-catchments were made for collecting of the rain (See Figure 2).

e) Planting

The seedlings were planted on 24 November during the rains. Muli group planted 400 seedling while Top group planted 160 seedlings.

The polythene bags were first removed and small holes were made in the center of the holes refilled with the soil with pangas. Then, seedlings were put into the small holes and covered with soil being pressed.

The species of the seedlings planted were of their own choice from the project nursery.

The seedlings planted by both groups consisted of the following species and number (Table 2).
See
^

Figure 2 Water micro-catchment method

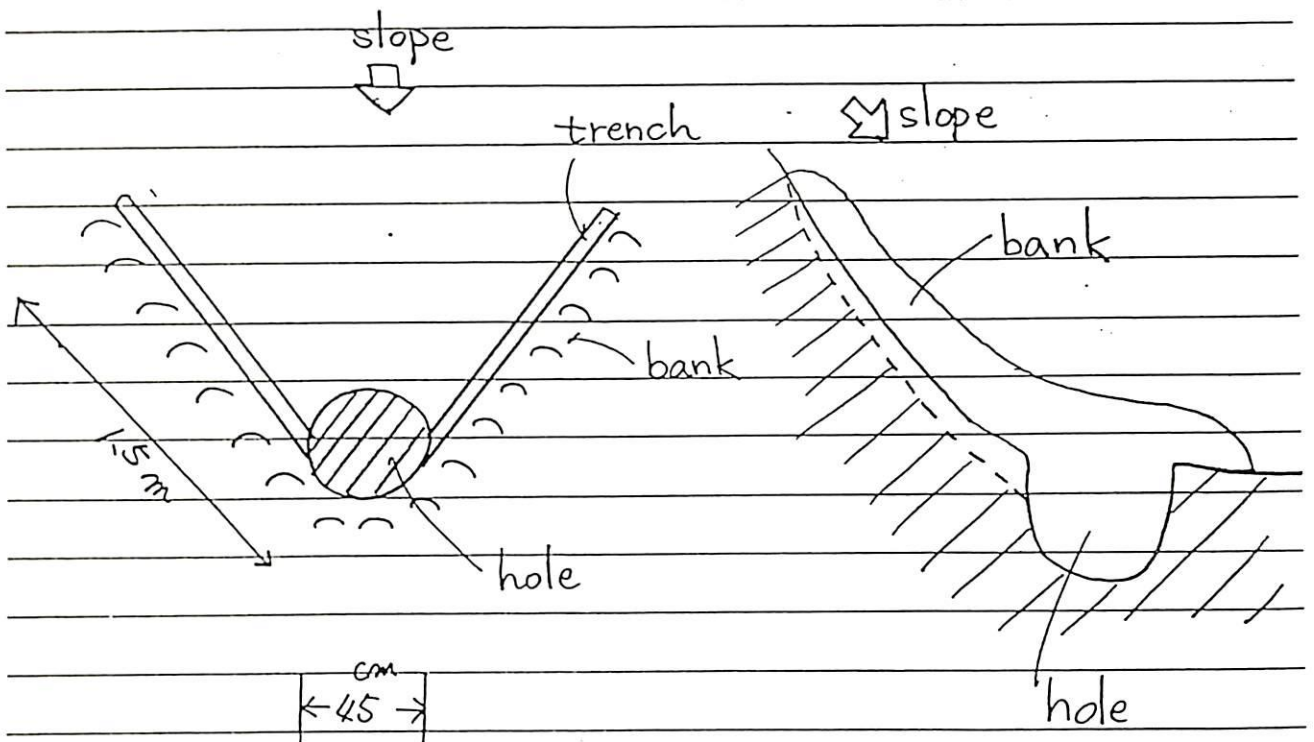


Table 2: Species and No. of seedlings planted in 1987

(unit: seedling)

Species	Muli group	Top group	Total
Acacia polyacantha	-	15	15
Azadirachta indica	50	35	85
Cassia siamea	-	20	20
Eucalyptus camuldulensis	50	25	75
Eucalyptus tereticornis	50	-	50
Melia volkensii	25	25	50
Parkinsonia aculeata	50	-	50
Prosopis juliflora	50	10	60
Tamarindus indica	125	30	155
TOTAL	400	160	560

Table 3: Survival percentange of seedlings

(Unit:%)

Species	Muli group	Top group	In Total
Acacia poly ^a acantha	-	26.7	26.7
Azadirachta indica	44.0	37.1	41.2
Cassia siamea	-	100.0	100.0
Eucalyptus camaldulensis	0.0	48.0	16.0
Eucalyptus tereticornis	8.0	-	8.0
Melia volkensii	56.0	84.0	70.0
Parkinsonia aculeata	94.0	-	94.0
Prosopis juliflora	80.0	50.0	75.0
Tamarindus indica	93.6	100.0	94.8
In Total	61.0	65.6	62.3

f) Tending

In general, the necessary tending operations, i.e. beating up, weeding and watering were carried out in time by the group members. Watering the seedlings planted in the plots was done from December 1987 upto March 1988 once a week with the help of the project in carrying water from the river using the lorry. Amount of water was 5 litres per seedling per week.

(C) Survival

Survival percentage was surveyed on 31 March 1988, 4 months after the planting date. The results were as in Table 3.

From the survival figures per species, Parkinsonia aculeata and Tamarindus indica seemed to be the best for Muli group and Cassia siamea and Tamarindus indica for Top group. The species Eucalyptus camaldulensis and E. tereticornis did not seem to be suitable in the people's plantation site as almost all of them were eaten up by wild animals (dik-dik) in the plantation.

(D) Evaluation

Through the trial plantation activities by two pioneer Mwethya groups in 1987, it was found that the groups could carry out tree planting as one of the group activities and also they could play a substantive role in social forestry extension in raising awareness on importance of tree planting and transferring from the project ^{planting and tending techniques} to the communities to which the groups belong.

Therefore, it was decided to invite more Mwethya groups to participate in People's Plantation activities in the following year 1988/89.

3.1.3 Plantation by 18 groups in 1988/89

(A) General

For the year 1988/89, the project decided to involve more Mwethya groups than the year before.

a) Site allocation

A possible site for plantation by the groups was looked for in February and March 1988. Two blocks were set up along the provincial roads which is the boundary between the project site and private land. The site is also the nearest place from the groups' locations.

The site is ^{the} a thin stand dominated by commiphora species about 5m height.

Two blocks were named "BlockA" and "BlockB", the former including the planting sites of two pioneer groups, Muli and Top (See Map 3).

b) Demarcation of sites

The site was divided into small plots so that each group would be allocated a portion. Block A was divided into four plots each with an area ranging from 3.30 ha to 3.88 ha, while Block B was divided into 14 plots each with an area ranging from 2.46 ha to 4.59 ha (See Map 4).


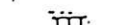





c) Meetings with group members

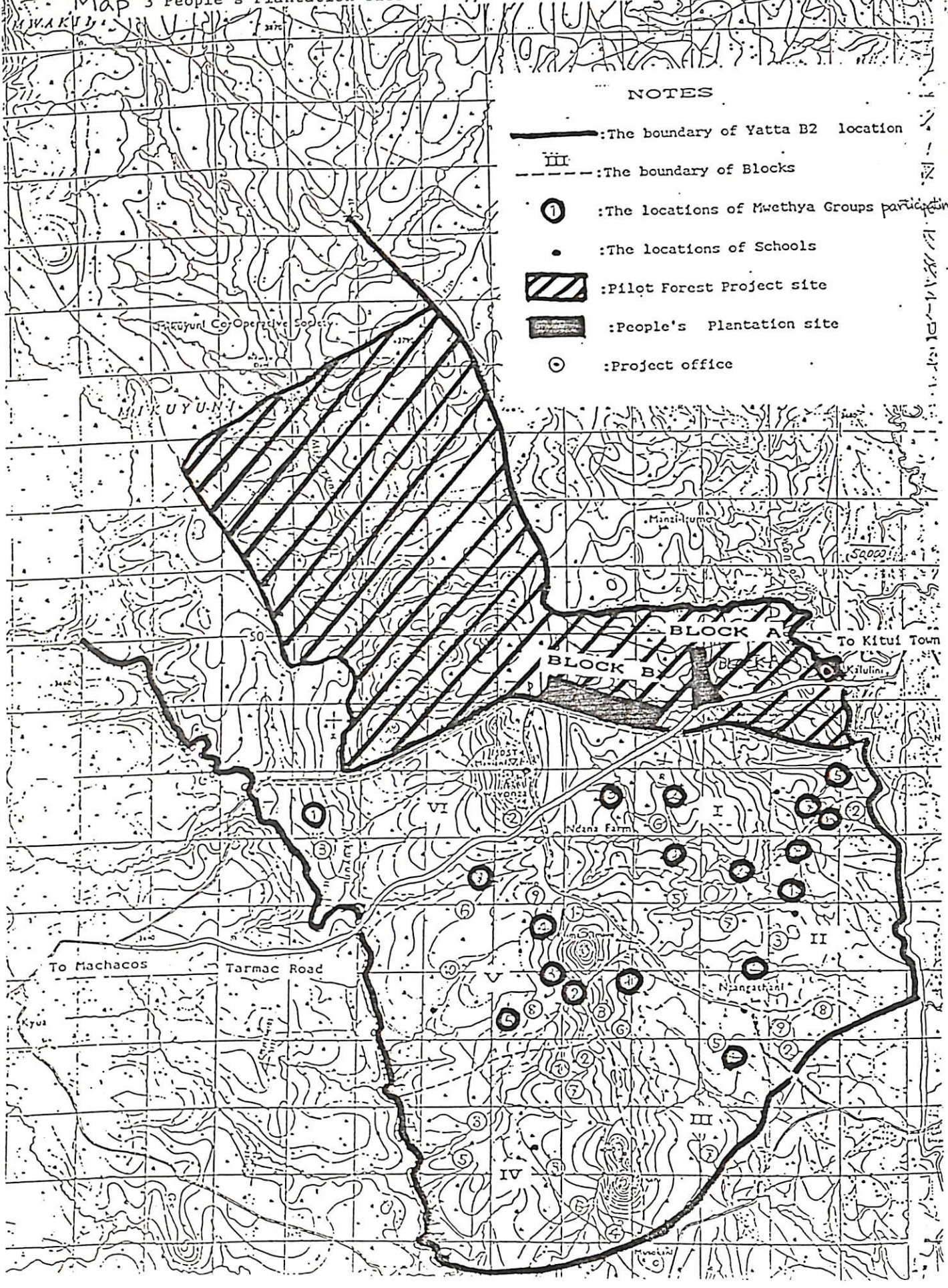
Two most important meetings were held at the beginning. The first one was held at Kwa-vonza chief's office on ²⁶ April 1988 and second one was held at the project site on 14 May 1988. The project called all the groups in Yatta B2 location which were interested in this activity.

During the first meeting, the Project Manager explained the role of the project, aim of people's plantation activity and also the contents of the Draft Agreement on lease of the

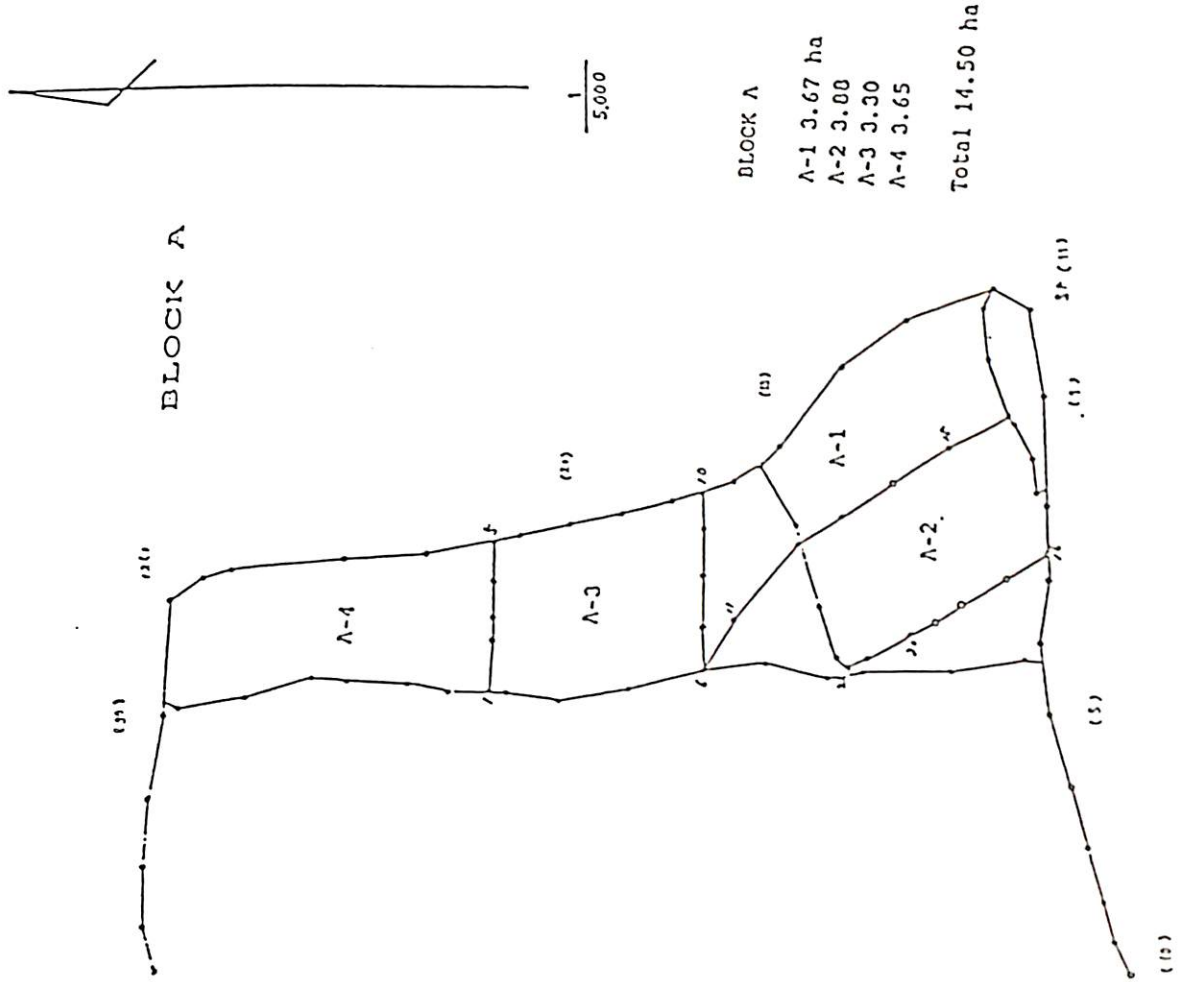
Map 3 People's Plantation Site

NOTES

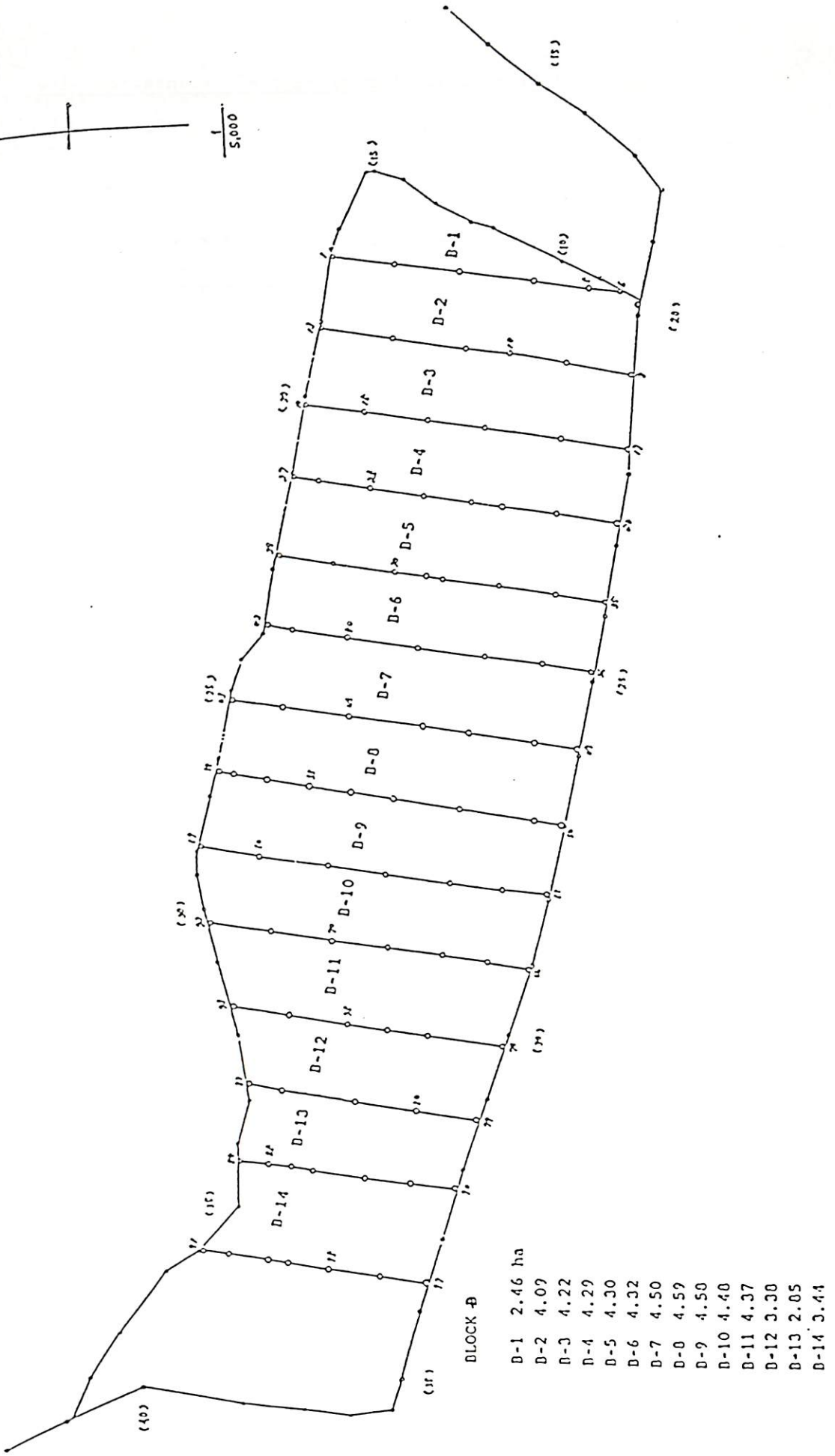
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Map 4, A Demarcation Map of People's Plantation Site



BLOCK B



BLOCK B

D-1	2.46 ha
D-2	4.07
D-3	4.22
D-4	4.29
D-5	4.30
D-6	4.32
D-7	4.50
D-8	4.59
D-9	4.50
D-10	4.40
D-11	4.37
D-12	3.30
D-13	2.05
D-14	3.44

Total 55.07 ha

project land between the groups and KEFRI (Kenya Forestry Research Institute).

In the second meeting, the people's plantation site, project nursery and trial plantation site etc., were shown to the group members.

d) Selection of the participating groups

In May and June 1988, a survey was carried out to identify the interested groups through the help of the local leaders including the locational chief of Yatta B2 and out of many the project selected additional sixteen groups in 1988, thus increasing the number of the participating Mwethya groups in the site to 18. All the 18 groups were from Yatta B2 location.

Several factors were considered in the above selection process and the following were the five main factors considered;

- i) The group should have a strong interest in tree planting activities.
- ii) The group should be an active group.
- iii) The group should have a reasonable number of working members (more than about 10 working members).
- iv) The group's location from the project site should be within a walking distance.
- v) The group should be of non-political nature.

The names of the Mwethya groups involved and the area of lands allocated to the respective groups are shown in Table 4.

No group was from Block IV because it was not within a walking distance.

e) Requests made by group members

After the selection of the groups, the project attended the

(Table 4)

The list of groups participating in 1988/89

PLOT NO.	AREA (HA)	NAME OF GROUP	BLOCK	NUMBER OF MEMBERS		
				WORKING	OTHERS	TOTAL
A-1	3.67	Muli	II	12	9	21
A-2	3.88	Top	I	18	1	19
A-3	3.30	Ithyoa Ngingo	III	9	-	9
A-4	3.65	Kavongoloka	V	9	-	9
B-1	2.46	Kiima Kimwe	V	18	3	21
B-2	4.09	Maithya	III	16	4	20
B-3	4.22	Masola	II	12	6	18
B-4	4.29	Mukilye (I)	I	8	2	10
B-5	4.30	Kaumoni	II	15	4	19
B-6	4.32	Mukilye (V)	V	12	-	12
B-7	4.50	Ikinya Cut-Off	I	17	4	21
B-8	4.59	Mwende	V	18	1	19
B-9	4.58	Kasau Kanya	VI	18	-	18
B-10	4.48	Manyanzaani	I	16	3	19
B-11	4.37	Kavingo	I	19	-	19
B-12	3.38	Isaalala	I	13	6	19
B-13	2.85	Ikungu	I	18	-	18
B-14	3.44	Kamanze	v	8	7	15
Total	70.37			256	50	306

Locational Development Committee Meeting on 24 June 1988, and held two more meetings, i.e. the third meeting (5 July 1988) and the fourth meeting (16 July 1988) with the members of the selected groups to prepare for the start of the activities.

Through these meetings, the following requests were made by the groups;

- i) 25 Kshs. to be paid for every member per day they come to work on the site.
- ii) If this is impossible, 10kg of maize should be provided for every member for the day they come to work on the site.
- iii) Agroforestry practices on the site should be allowed.

For these requests, the project answered that the project could neither pay any wages nor provide food. The project tried again to explain that the benefits each group would get from the operation would be the following;

- i) They get free seedlings and tools from the project.
- ii) They acquire technical knowledge in tree planting.
- iii) They improve their environment by growing trees.
- iv) They raise their standard of livings by planting trees.
- v) The products from their trees are theirs.
- vi) Tree planting has a long-term benefits.

And the project decided to give them the followings as incentives;

- i) Right to practice agroforestry
- ii) Tools i.e. pangas, shovels, jembes, muttocks and slashers to be kept by them.
- iii) Five improved jikos for each group and five more jikos every

year until each member will have obtained one each.

At the fourth meeting, the Mwethya groups accepted the incentives offered by the project. They also accepted to come and work without any wage payment or food.

(B) Agreement

The agreements between KEFRI and the participating Mwethya groups on tree planting in the Pilot Forest area were signed by the representatives of both parties on 1 December 1988. The project had been explaining about the contents of the agreement in detail in the several meetings described before.

The main articles are as follows;

- i) KEFRI leases a portion of land to the group for ten years, this period being extendible.
- ii) The group shall utilise the portion of land purely for the purpose of planting and growing trees and the promotion of afforestation.
- iii) The group shall protect, tend or otherwise take care of the planted trees.
- iv) The trees planted and grown by the group shall become the property of the group.
- v) KEFRI shall give the group such technical guidance and assistance as necessary.

The following people also signed on the agreements as witnesses from the Locational Development Committee.

- i) Chief Yatta B2 location
- ii) Councillor Yatta B2 location
- iii) KANU chairman Yatta B2 location

At the same time, memoranda of understanding for 1988/89 plantation were signed.

The format agreement and memorandum are attached herewith as ANNEX 2.

(C) Field Work

(a) Clearing (Site preparation)

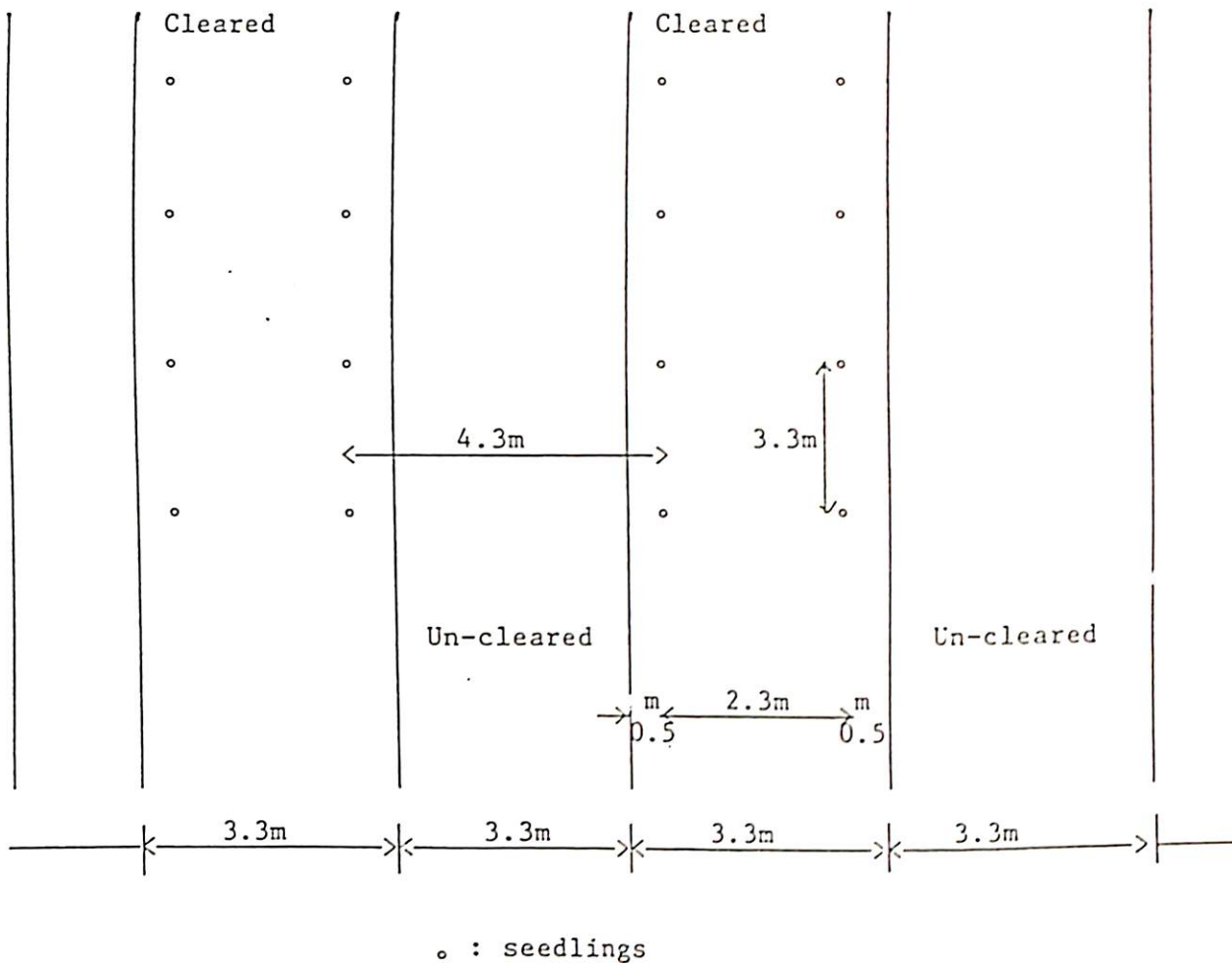
For the year 1988/89, target of 2.0 ha were set up by the project for each group's plantation, total 36 ha by 18 groups.

Some groups started clearing in June, but some other groups in September when it was so late.

Clearing was done in lines as shown by Figure 3 of which clearing method was different from that of previous year's plantation.

Actually, though the target was 2.0 ha for each group and 36 ha for 18 groups, the groups could clear only very small portion of land allocated, i.e. total 4.26 ha by 18 groups, it meant that each group cleared only 0.24 ha in average.

Figure 3 Line Clearing Method



b) Fencing

The fence for preventing from domestic animals was made along the provincial roads. The groups were assisted to make it stronger by the project.

c) Pitting

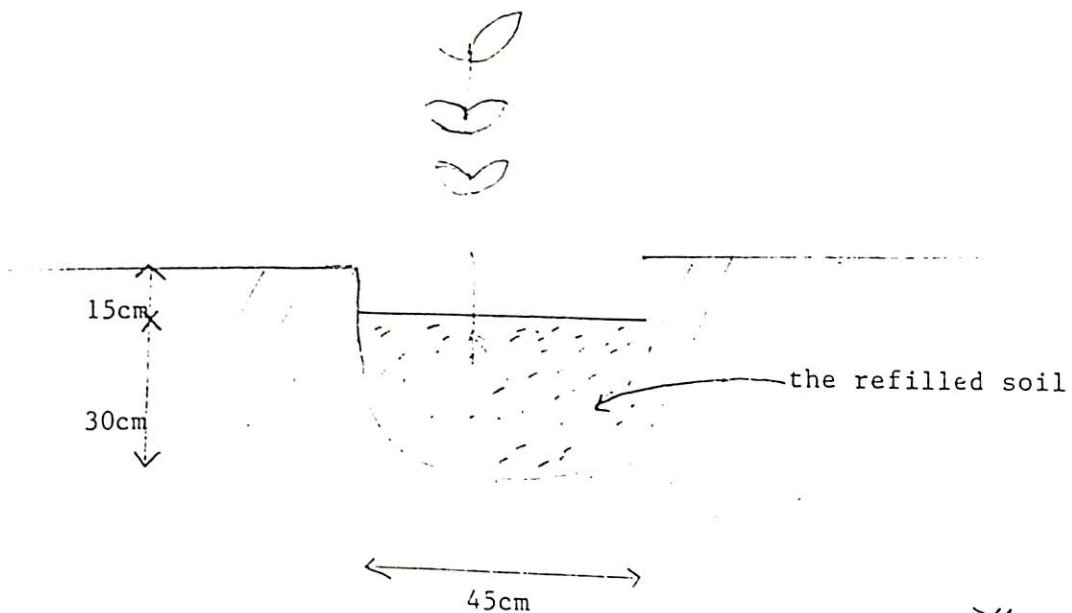
18 groups dug a total of 4,261 holes with the planting density of 1,000 seedlings per hectare. The size of hole was the same as that of previous year's plantation, i.e. 45cm diameter x 45 cm depth. Only two groups out of 18 groups employed workers in a few days for pitting.

d) Refilling of soil

The groups refilled the soil after initial rains in November, after the holes had stored enough water.

In 1988/89 plantation, the water micro-catchment method was ^{not} applied because the plantation site was quite flat. Instead of applying this method, the holes were not filled with the soil completely but filled upto 2/3 depth, and the seedlings were planted in the holes. (See Figure 4).

Figure 4 Planting method



e) Planting

The seedlings were planted waiting for another rain after refilling.

In total, 4,261 seedlings (4.26ha) were planted by 18 groups in 1988/89 plantation. This accounts for only 12% of the total number of seedlings planned.

Species planted included:

Tamarindus indica, Cassia siamea, Parkinsonia aculeata,
Prosopis juliflora, Azadirachta indica.

The number of seedlings for each species and area (ha) planted by each group are shown in Table 5.

Table 5

NO. OF SEEDLING AND AREA (ha) PLANTED BY MWETHYA GROUPS IN 1988

No.	Plot No.	Plot Area (ha)	Name of Group	No. of seedlings planted					Total	Area Planted (ha)	
				Species 1	2	3	4	5			
1.	A-1	3.67	MULI	40	48	41	41	10	180	0.18	
2.	A-2	3.88	TOP	8	18	5	5	-	36	0.04	
3.	A-3	3.30	ITHYOA NGINGO	21	10	10	11	-	52	0.05	
4.	A-4	3.65	KAVONGOLOKA	10	10	8	10	10	48	0.05	
5.	B-1	2.46	KIIMA KIMWE	19	23	10	13	-	65	0.07	
6.	B-2	4.09	MAITHYA	50	50	43	39	-	182	0.18	
7.	B-3	4.22	MASOLA	38	40	30	12	-	120	0.12	
8.	B-4	4.29	MUKILYE (I)	104	105	19	25	6	259	0.26	
9.	B-5	4.30	KAUMONI	108	108	72	58	-	346	0.35	
10.	B-6	4.32	MUKILYE (v)	72	62	58	15	10	217	0.22	
11.	B-7	4.50	IKINYA CUT-OFF	200	281	75	132	-	688	0.69	
12.	B-8	4.59	MWENDE	65	115	58	114	-	352	0.35	
13.	B-9	4.58	KASAU KAKYA	50	28	33	14	6	131	0.13	
14.	B-10	4.48	MANYANZAANI	98	78	92	70	10	348	0.35	
15.	B-11	4.37	KAVINGO	71	71	35	20	10	207	0.21	
16.	B-12	3.38	ISAALALA	183	299	54	52	10	598	0.60	
17.	B-13	2.85	IKUNGU	64	62	22	43	10	201	0.20	
18.	B-14	3.44	KAMANZE	33	80	77	31	10	231	0.23	
TOTAL			70.37	TOTAL	1,234	1,488	742	705	92	4,261	4.26

Species

1. Tamarindus indica
2. Cassia siamea
3. Parkinsonia aculeata
4. Prosopis juliflora
5. Azadirachta indica

f) Tending

Weeding was done in time by the group members but watering was not carried out for 1988/89 planting.

g) Number of days worked and members who worked

Through the all field works, i.e. clearing, fencing, pitting, refilling of soil, planting and weeding, a total number of days worked by 18 groups was 265 days and a total number of members who worked for these works was 2,046 persons (See Table 6).

Species

1. Tamarindus indica
2. Cassia siamea
3. Parkinsonia aculeata
4. Prosopis juliflora
5. Azadirachta indica

f) Tending

Weeding was done in time by the group members but watering was not carried out for 1988/89 planting.

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Through the all field works, i.e. clearing, fencing, pitting, refilling of soil, planting and weeding, a total number of days worked by 18 groups was 265 days and a total number of members who worked for these works was 2,046 persons (See Table 6).

Table 6 Number of days and members worked from June 1988 to December 1988

Plot	Work Name	Clearing		Fencing		Pitting		Refilling of soil		Planting		Weeding		Total		No. of members/day
		day	member	day	member	day	member	day	member	day	member	day	member	day	member	
A-1	Muli	8	47	3	10	5	28	1	8	1	8	1	8	19	109	6
A-2	Top	3	26	2	16	1	4	1	7	2	17	2	12	11	82	7
A-3	Ithoya Ngingo	5	28	2	14	3	16	1	8	1	8	0	0	12	74	6
A-4	Kavongoloka	4	23	2	8	2	10	1	7	1	7	0	0	10	55	6
B-1	Kima-Kimwe	4	21	1	8	3	15	1	10	1	10	0	0	10	64	6
B-2	Maitya	4	20	2	13	2	6	1	8	1	8	0	0	10	55	6
B-3	Masola	4	21	2	14	3	14	1	1	1	6	0	0	11	56	5
B-4	Mukilye(l)	6	41	2	13	5	39	3	20	2	14	0	0	18	127	7
B-5	Kaumoni	5	51	2	18	11	92	1	13	1	13	1	10	21	197	9
B-6	Mukilye(v)	3	25	1	8	5	34	2	10	2	15	1	8	14	100	7
B-7	Ikinya Cut-off	7	80	1	14	11	117	1	15	1	12	1	11	22	249	11
B-8	Mwende	5	49	2	18	4	38	1	11	1	11	1	8	14	135	10
B-9	Kasau Kanya	3	41	1	9	4	39	1	8	1	8	0	0	10	105	11
B-10	Manyanzaani	4	27	1	13	10	59	2	12	1	8	0	0	18	119	7
B-11	Kavingo	2	23	1	10	2	22	1	9	2	18	2	18	10	100	10
B-12	Isaalala	9	77	1	8	9	48	2	18	2	15	3	20	26	186	7
B-13	Ikungu	2	7	3	17	7	28	2	23	1	13	1	16	16	104	7
B-14	Kamanze	3	29	2	19	4	37	1	13	2	24	1	7	13	129	10
	Total	81	636	31	230	91	646	24	201	24	215	14	118	263	2,046	8

NB: Excluding employee

Species

1. Tamarindus indica
2. Cassia siamea
3. Parkinsonia aculeata
4. Prosopis juliflora
5. Azadirachta indica

f) Tending

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Through the all field works, i.e. clearing, fencing, pitting, refilling of soil, planting and weeding, a total number of days worked by 18 groups was 265 days and a total number of members who worked for these works was 2,046 persons (See Table 6).

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Plot	Work Name	Clearing		Fencing		Pitting		Refilling of soil		Planting		Weeding		Total		No. of members/day
		day	member	day	member	day	member	day	member	day	member	day	member	day	member	
A-1	Muli	8	47	3	10	5	28	1	8	1	8	1	8	19	109	6
A-2	Top	3	26	2	16	1	4	1	7	2	17	2	12	11	82	7
A-3	Ithoya Ngingo	5	28	2	14	3	16	1	8	1	8	0	0	12	74	6
A-4	Kavongo-loka	4	23	2	8	2	10	1	7	1	7	0	0	10	55	6
B-1	Kima-Kimwe	4	21	1	8	3	15	1	10	1	10	0	0	10	64	6
B-2	Maitya	4	20	2	13	2	6	1	8	1	8	0	0	10	55	6
B-3	Masola	4	21	2	14	3	14	1	1	1	6	0	0	11	56	5
B-4	Mukilye(l)	6	41	2	13	5	39	3	20	2	14	0	0	18	127	7
B-5	Kaumoni	5	51	2	18	11	92	1	13	1	13	1	10	21	197	9
B-6	Mukilye(v)	3	25	1	8	5	34	2	10	2	15	1	8	14	100	7
B-7	Ikinya Cut-off	7	80	1	14	11	117	1	15	1	12	1	11	22	249	11
B-8	Mwende	5	49	2	18	4	38	1	11	1	11	1	8	14	135	10
B-9	Kasau Kakya	3	41	1	9	4	39	1	8	1	8	0	0	10	105	11
B-10	Manyanzaani	4	27	1	13	10	59	2	12	1	8	0	0	18	119	7
B-11	Kavingo	2	23	1	10	2	22	1	9	2	18	2	18	10	100	10
B-12	Isaalala	9	77	1	8	9	48	2	18	2	15	3	20	26	186	7
B-13	Ikungu	2	7	3	17	7	28	2	23	1	13	1	16	16	104	7
B-14	Kamanze	3	29	2	19	4	37	1	13	2	24	1	7	13	129	10
	Total	81	636	31	230	91	646	24	201	24	215	14	118	265	2,046	8

NB: Excluding employee