Participatory Rapid Rural Appraisal in Wollo, Ethiopia

Peasant Association Planning for Natural Resource Management

IIED
INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT

SUSTAINABLE AGRICULTURE PROGRAMME

ETHIOPIAN RED CROSS SOCIETY
UMCC — DPP

Participatory Rapid Rural Appraisal in Wollo:

Peasant Association Planning for Natural Resource Management

by

Ethiopian Red Cross Society UMCC-DPP (Upper Mille and Cheleka Catchments Disaster Prevention Programme) and International Institute for Environment and Development

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GLOSSARY

Belg	Short rainy season
CHW	Community Health Worker
DA	Development Agent, extension worker
ERCS	Ethiopian Red Cross Society
FFW	Food For Work
IIED	International Institute for Environment and Development
Kiremt	Long rainy season
PA	Peasant Association
PC	Producers Cooperative
PHC	Primary Health Care
RRA	Rapid Rural Appraisal
UMCC-DPP	Upper Mille & Cheleka Catchment Disaster Prevention Programme
WA	Women's Association

1. INTRODUCTION

This report is the result of a Rapid Rural Appraisal (RRA) exercise carried out in Ethiopian Red Cross Upper Mille and Cheleka Catchments Project (UMCC-DPP) in Wollo Province between 29 May and 6 June 1989. This exercise was a follow-up to an earlier ERCS/IIED training activity held in 1988 (ERCS, 1988).

The general aims of the RRA training exercise were to:

- Further explore the possibilities of incorporating the RRA approach into Ethiopian Red Cross/MoA activities in the project area

- Test RRA techniques for participatory planning of natural resource management projects

- Train staff of the MoA and ERCS involved in the UMCC-DPP project in the use of RRA techniques, with a focus on Development Assistants (DAs) and awraja technical staff

- Investigate the issues surrounding hillside closure and tree/woodland management in two contrasting Peasant Associations (PAs).

This exercise was carried out at the request of the Ethiopian Red Cross Society in cooperation with the Swedish Red Cross Society. The Swedish International Development Authority provided funding for training under a contract to the International Institute for Environment and Development (IIED), London.

This report has been written jointly by the participants (see Appendix 1 for a list of authors). The report has been compiled by Ian Scoones and Jennifer McCracken (Sustainable Agriculture Programme, IIED).

The report is divided into nine sections. Following an introduction to RRA methods and the approach taken in the training workshop, the information derived from the RRA in two PAs (Graramba and Bededo) is presented. A general profile of each PA is given followed by a summary of attitudes of different groups within the PA to issues of natural resource management, water, health, etc. This information, derived from the use of a range of RRA techniques, is then used to generate a list of 'Problems and Opportunities' in the PA. These give rise to a series of 'Best Bets' for development which are formulated in a preliminary way and then taken back to the community, tested and revised in a series of group discussions. The finalised 'Best Bets' then are the basis for further practical action - from policy review, to research to project implementation. Within nine days of field and workshop work the RRA teams, in consultation with a range of groups within the community, came up with a series of practical options for future action. These are presented in the report on coloured paper and are supported by information derived for the environmental, agricultural and attitudinal profiles of the PAs.

The final sections of the report provide a comparison of outputs between the two PAs, a list of recommendations for immediate follow-up and a review and evaluation of the training workshop by the participants.

2. BACKGROUND

2.1 Background to the Methodology

Rapid Rural Appraisal has been developed over the last ten years in response to concerns over the commonly encountered pitfalls to conventional approaches for rural research and development. The term RRA has now come to refer to a wide range of techniques and methods. Indeed not all RRAs are rapid, not all are restricted to rural situations, and not all are appraisals. There are several principles that illustrate the key features of Rapid Rural Appraisal. RRA should not be thought of as a pre-set methodology in package form - instead it comprises a series of **CHOICES** for any given situation. Investigators can thus select from a "basket of choices" according to their needs and experience. The process is **ITERATIVE** and is modified by the team as information is progressively revealed. Insights arise because of the **MULTIDISCIPLINARY** nature of the investigatory team. RRAs encourage team members to be **INVENTIVE**, and thus there is no standard procedure. The procedure is systematic and **SEMI-STRUCTURED**, whilst maintaining flexibility and adaptability. Accuracy is achieved through **TRIANGULATION**, which involves the use of diverse methods and information sources rather than statistical replicability. Unnecessary detail is avoided through **OPTIMAL IGNORANCE**, and the key trade offs between precision - breadth - depth - timeliness are made explicit through **APPROPRIATE IMPRECISION**. Finally it is recognised that investigators interfere, and RRAs thus attempt to make **BIASES EXPLICIT**.

Rapid Appraisals can be carried out in order to provide **EXPLORATORY** information about an area, or be focussed on a particular **TOPIC**. A central principle of RRAs is that they are **PARTICIPATORY**. That is they attempt to develop a dialogue with local people during the research process and that they encourage local people to be involved in the **PROCESS** of research and project planning. RRAs are therefore best carried out by and with **LOCAL PEOPLE**. (See Sections 4, 5 and Appendix 2 for more detail on the characteristics of the RRA methodology).

2.2 Background to the Issues

The concern for the protection and management of natural resources in Wollo is central to the Ethiopian government's strategy in the highland areas. The Ethiopian Highland Reclamation study that was carried out following the 1984/5 famine claimed that vast areas of the highlands will be lost for cultivation and grazing due to accelerated soil erosion (FAO, 1985).

The study recommended an approach to land rehabilitation that went beyond tree planting and physical soil conservation measures to an integrated approach that increased agricultural production,

balanced livestock numbers and feed resources and took measures to meet fuel needs. These activities needed to planned with the genuine participation of the peasants. The FAO investment centre studies that followed recommended:

> "the involvement of the people in identifying priorities and planning the development of their area" (FAO/IC (1985), quoted by Hultin, 1988).

The UMCC-DPP project was established following the disastrous drought of 1984/5. It is based on a series of detailed resource surveys and socio-economic studies in the Upper Mille and Cheleka Catchments (ERCS, 1986). The aim is to:

> "achieve a community-oriented improved self-reliance within a short period of time - a minimum of five years - food production, water harvesting, conservation of natural resources and basic health should be the main components of disaster prevention" (ERCS, 1986; p 6).

The approach to disaster prevention taken by the ERCS has been centred on micro-catchment development combining natural resource conservation with improvements in agricultural production.

Attempts at natural resource management at the local level have to be seen in the context of the government strategy for rural transformation. This has three components:

- The progressive establishment of Producer's Cooperatives within the PAs.

- Villagisation and the consolidation of villages in order to provide services, extension support, security control and planned land-use in the PAs. This programme has increased in Wollo since 1986.

- Resettlement of people away from areas with high population and perceived land degradation, such as Wollo, to areas in the south and west. This was particularly evident in the period between 1984 and 1986.

Each of these policies for rural transformation have significant impacts on the incentives for and organisation of natural resource management initiatives.

Since 1974 there has been a strong encouragement of community forestry projects in Ethiopia. This has increased during the last decade, particularly with the support of Food for Work programmes supported by the World Food Programme and other agencies. In 1985 the Community Forests and Soil Conservation Development Department was formed within the MoA. This aimed to increase afforestation activities both in terms of plantation and protected forestry. The focus is on provision of fuel and pole species through large planting efforts, and ambitious targets are set for seedlings planted (Poschen-Eicher, 1987).

Trees exist in five different categories of land. These have different ownership and tenure relations according to government proclamation (see Box 1).

Box 1: Relevant section of Proclamation 192 of 1980 for the development of forest and wildlife of Ethiopia

Types of forest ownership

According to the proclamation there are three types of forest:

1. Trees in the compound of each peasant
2. The state forest
3. The peasant association or community forest

1. Trees in the compound

Trees planted in the compound of a peasant on the margin of his land and in the gully of his own farm land by himself or given to him by the Peasant Association are known as individual trees. A peasant can use his tree after it reaches maturity, so long as he asks permission for technical aid.

2. The state forest

These are defined as forests which are the property of the state and include:

- protected forest of proclamation 225, 1965
- protected forest of proclamation 227, 1965 and protected forest designated by the Authority in accordance with article 21 of the proclamation
- forests, planted or natural, that are designated by the Authority

3. The peasant association/community forest

These are defined as either forest developed by the peasant association in the locality, designated by the authority or forest within the locality of the peasant association, not designated as forest by the authority. There is no need to ask permission of the authority for the utilisation of the forest products by the association. However, to sell the Kebele forest products permission is needed from the authority.

The five areas are:

- State forest
- Community forest sites
- Protected forest areas (eg hillside closures)
- Natural communal woodland
- Individual plantations around homes and farms

Different incentives clearly exist for participation in planting and managing of trees in each of these forest types. Ezra and Berhanu (1988) carried out a study to evaluate the achievements of the community forestry programme in Ethiopia. They found an impressive expansion of the numbers of seedlings planted and the numbers of nurseries available (53 in Wollo), yet mixed success in actual implementation. The major reason for failure was thought to be poor site selection for community forestry projects, along with drought, pests and inappropriate species choice.

The study found generally a greater enthusiasm amongst PA members for individual private planting over community afforestation. This they attribute to:

- the absence of tangible benefits of community forestry projects due to the short time since planting.

- the absence of clear cut decisions regarding future usage and uncertainty about appropriation of tree products by the state.

In some areas the physical success of the community forestry programme is attributed to incentives provided by FFW. They comment that results from Ambassel in Wollo show that: "had it not been for the incentive people would not have participated in the programme without coercion". Dejene (1988) recommends a "clear legal mandate that empowers peasant associations to manage and utilise community forests." His study concludes that:

> "members and leaders of PAs believe that community forests, in the final analysis, belong to the government and the PA will not benefit from them. This negative sentiment is due mainly to the lack of peasant participation in community forestry projects." (p. 50).

Dejene (1988) finds similar drawbacks with the policy of hillside closures which has increased in Wollo since 1984. The study found that surprisingly few members of PAs were aware of the existence of the closures in their areas and few perceived them to realise direct benefits for the PA. Lack of involvement in planning resulted in the closure being seen as a government programme, or at worst, as an appropriation by the state. Again the conclusion was reached that:

> "the greatest constraints limiting the effectiveness of area closure as a mechanism to rehabilitate degraded land, is

lack of popular participation in its implementation and management from the peasantry. As a result most peasants perceive area closure as another government intrusion in their lives and are resentful of the programme".

Considerable numbers of trees are planted by individuals in parts of Ethiopia. There is a long tradition of tree management around homes and farms (Poschen-Eicher, 1987). Ezra and Berhanu calculate from their questionnaire returns that 18.5 trees are planted each year by households in Wollo (p.44).

However there are constraints felt by peasants to planting trees. Ezra and Berhanu (1987) list a series of concerns expressed by peasants. These are echoed in the findings of Hultin (1988, 1989) and Dejene (1988), both working in Wollo.

- The atmosphere of uncertainty over the use of private woodlots by individuals due to the absence of clear cut rules over tenure rights.

- The fear of confiscation of private trees without compensation for community use.

- Uncertainty over whether home sites will be retained and the benefits of tree investment reaped due to the intensification of villagisation and cooperativisation.

- A shortage of land around the homestead for planting trees.

- The lack of attention paid by development programmes to private planting activities as against the community forestry programme.

The experience of community forestry, hillside closure and other natural resource management projects in Wollo over the last decade has generated the conclusion that there is an increased need to involve the peasantry in participatory planning. This conclusion is reflected in the Ethiopian Red Cross thinking. UMCC-DPP project planning documents state that:

> "the PA will be directly involved in planning the details of projects (ERCS, 1986).

A number of recent initiatives within the project have taken place that have brought this debate to the fore:

- The Rapid Rural Appraisal exercise in 1988 (ERCS, 1988), that investigated with peasant farmers issues of diversification in production systems and produced a series of "best bet" options for project implementation.

- The workshop on participation held in Dessie in December 1988, for DAs. The objectives of the workshop were to assess community participation in natural resource conservation and other rural development projects in the

UMCC-DPP, to discuss problems encountered by the DAs in initiating community based programmes and to plan how to involve the community in eventually taking over the development projects (ERCS, March 1989).

- The ongoing work on hillside closure and natural resource management (Bendz et al., 1988, 1989). The most recent study began to experiment with participatory planning of hillside closure management regimes at one site and recommended further exploration of such approaches within the project area.

The RRA exercise reported here is therefore a result of both the wider policy debate and the specific requirements of the project in relation to natural resource management issues. However, from the beginning, it was recognised that tree management and hillside closure cannot be seen in isolation from other activities and local concerns. The aim of the RRA training was therefore to focus on the topic of natural resource management and systems for participatory planning and management, but not exclude other issues. The central aims were to:

- provide UMCC-DPP with information on how the environmental problems connected with deforestation and soil erosion in the PAs are related to and affected by the decision-making processes within the PAs

- formulate with the PAs, mechanisms for improved forestry and soil conservation activities and improved management and distribution of benefits from these activities

- evaluate the potential further applications of the RRA methodology in UMCC-DPP.

The full Terms of Reference are provided as Appendix 2.

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3. OBJECTIVES AND FOCUS OF THE WORKSHOP

3.1 Objectives

The RRA group had a brainstorming session on the first day of the course to establish personal and group objectives for the training exercise. The following list was produced:

Training objectives

Personal learning; gaining field experience; evaluation and observation of local situation; increasing participation; testing the RRA approach for the project.

Course outputs

Identify research and development areas for the future; start thinking about the management of hillside closures; development of guidelines for future application; reflect the voice of the beneficiaries in the project.

Long term expectations

Land rehabilitation and improved production; extract benefits of closures for PA farmers; increase PA income.

3.2 Focus on Participation

The project staff with MoA participants had held a workshop on participation in the project in December 1988 (ERCS, March 1989). There was a general consensus of the need to incorporate local involvement and PA level planning in project activities. The RRA training exercise was seen as one step towards this objective with an exploration of participatory research and local planning techniques. At the beginning of the workshop it was necessary for the RRA group to discuss "What is meant by participation and what is its value?". Two brainstorm sessions were held and the following diagrams summarise the ideas generated (see Figures 1 and 2).

3.3 Focus on Trees

Hillside closure and tree planting have been central to the policy debate on natural resource management in the Ethiopian highlands (see Section 2.2). These concerns have been reflected in the UMCC-DPP project. A series of consultancy reports have focussed on the issues of tree management (Bendez, 1988a; 1988b; 1989) and suggested future direction for hillside closure management. A central question has been: what should be the key components of a hillside closure management strategy within the PAs? The need to develop mechanisms for local level planning of management systems has been a major concern. This provided the main rationale for the RRA exercise's focus on trees (see Figure 3).

Within the project area there are a diverse range of environments from the lowland areas of Kalu to the highlands of Ambassel. Each locality has a different set of resource endowments and requirements for natural resource management. A fine-tuned approach to planning at the PA level is needed, as blanket recommendations are inadequate. This is why the RRA exercise focussed on two PAs from highly contrasting areas. Graramba PA is situated in the lowland area with low rainfall, poor soils and low population density compared to the highland PA of Bededo (see Figures 4 and 5). A comparative investigation then acted to highlight the range of possible options for natural resource management.

Although the RRA focus was on trees, other components of the livelihood system were not ignored. Special attention was paid to the linkages within and outside the system. Issues of agricultural production, water resources and health also were central to the RRA exercise.

3.4 Issues of Famine Vulnerability

The Wollo project area has been subject to serious droughts in 1973 and 1984. This background has resulted in the support of local communities through food aid and Food for Work support. It is the aim of the UMCC-DPP to work from relief to development, enabling local communities to support themselves. Natural resources are the basis of local livelihoods and successful management is central to reducing famine vulnerability.

The linkages between natural resources, rural livelihood strategies and drought coping strategies are central to the analysis of the RRA. Best bets, evolved through discussion at the PA level, offer routes to addressing the issues of famine vulnerability, putting local priorities first.

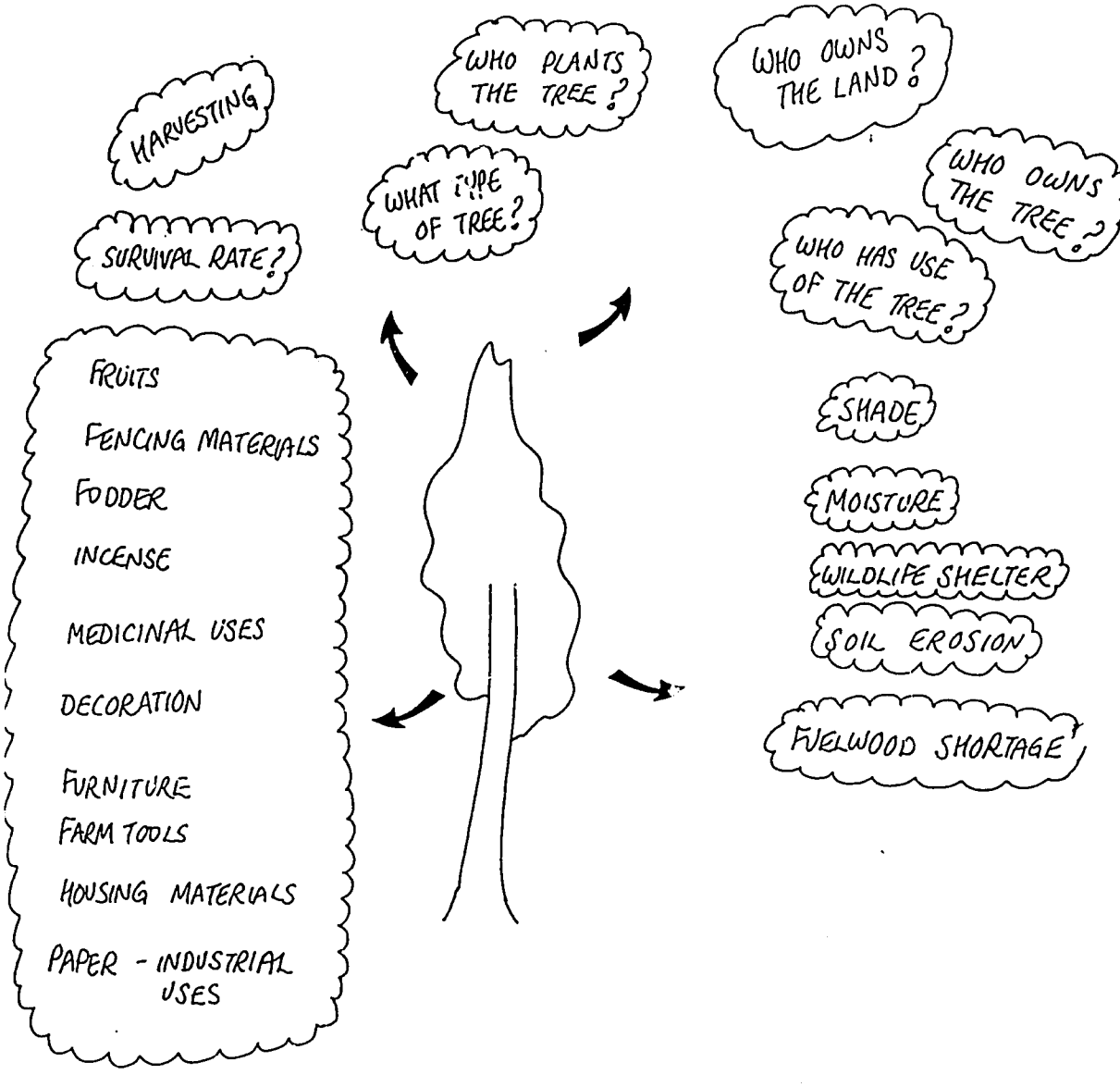

Figure 3. Brainstorm session - tree issues

Figure 1. Brainstorm session - What is participation?

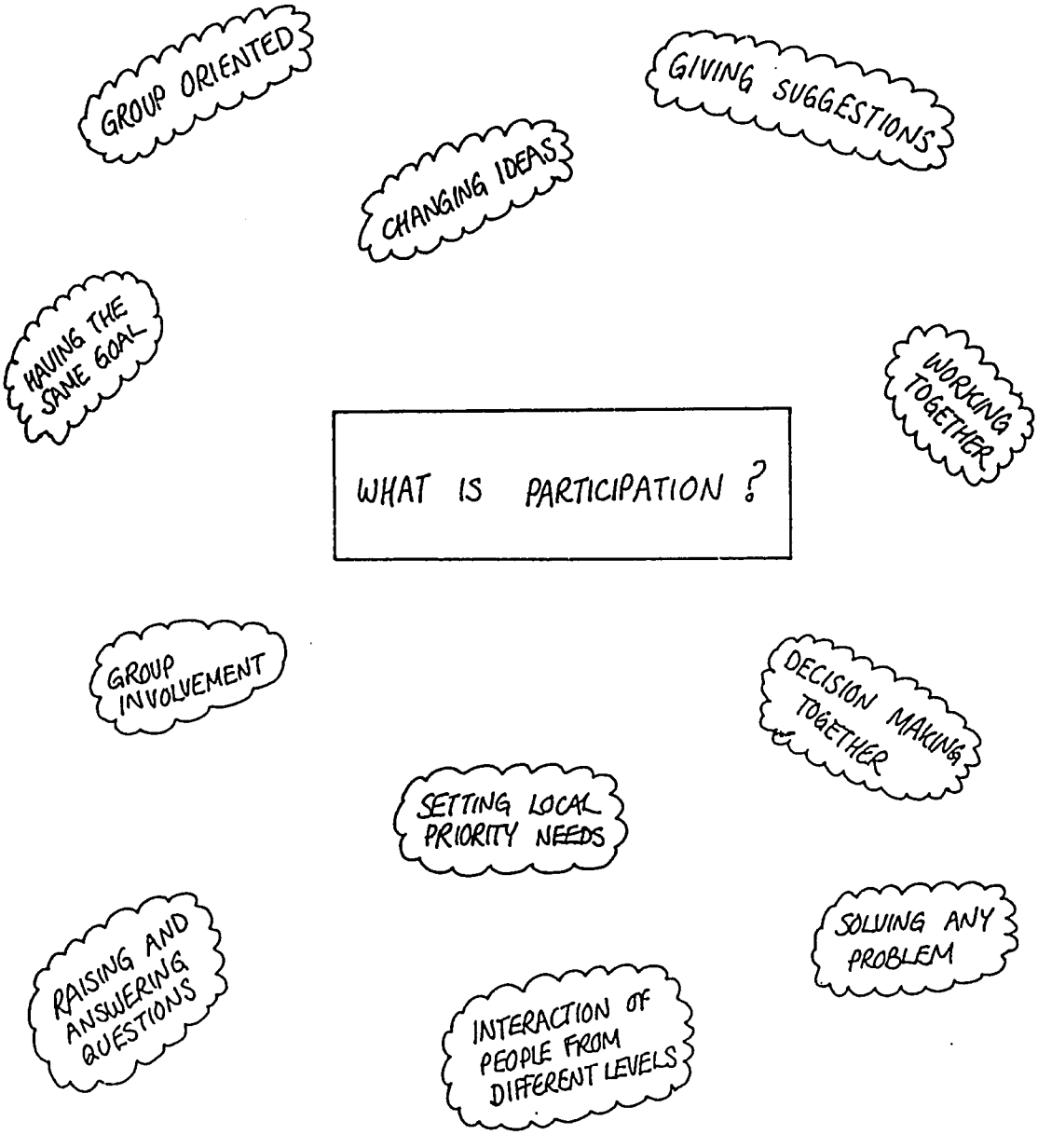

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Figure 2. Brainstorm session - the value of participation

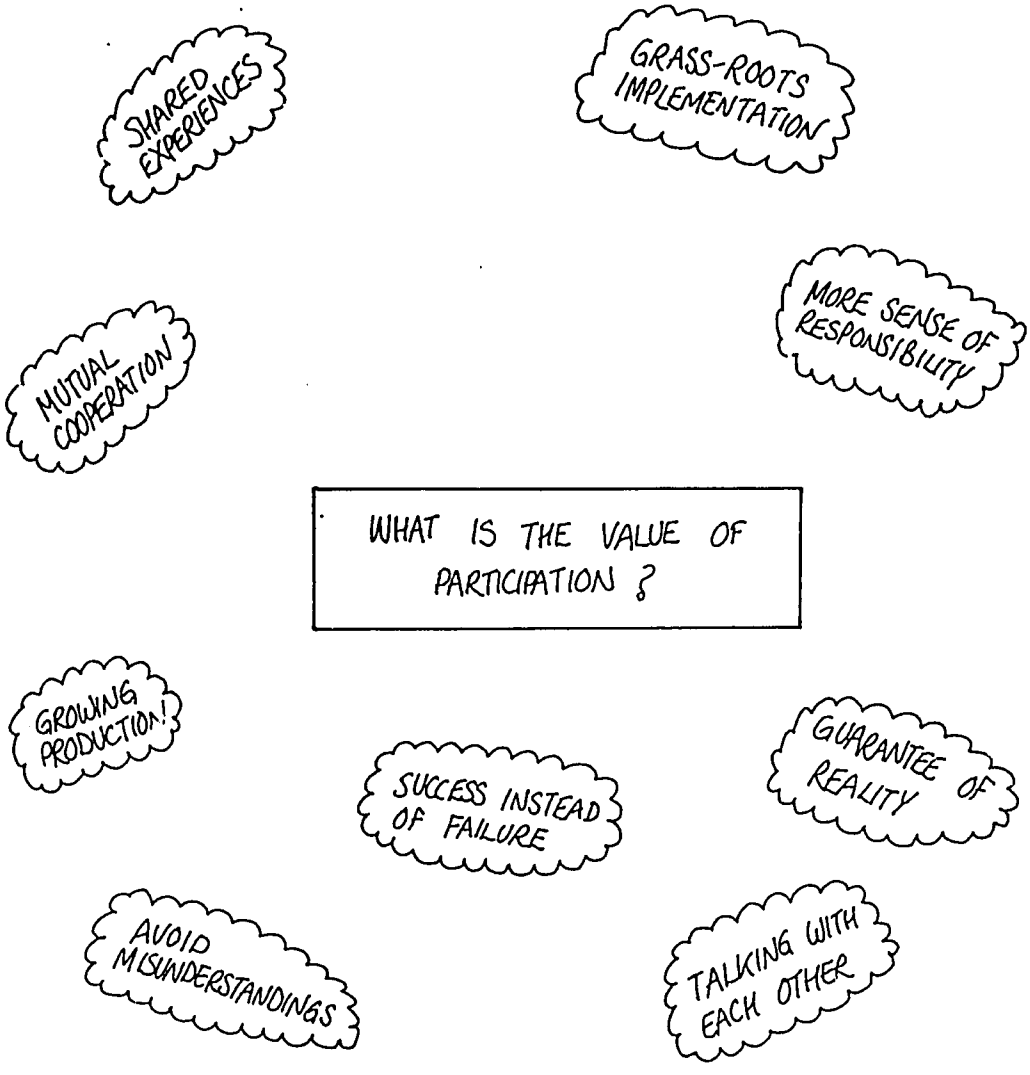
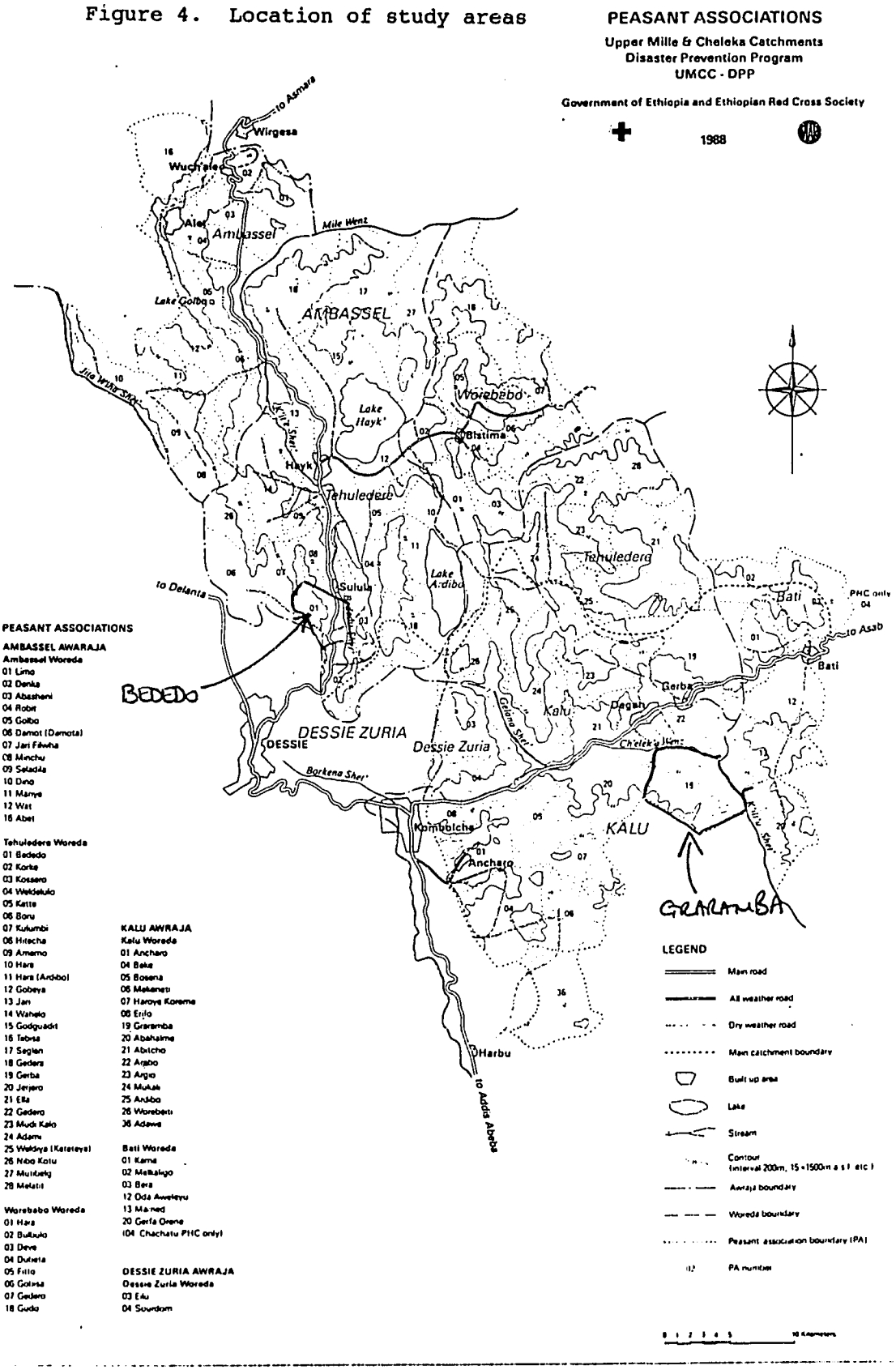


Figure 4. Location of study areas



PEASANT ASSOCIATIONS

AMBASSEL AWRAJA

Ambassel Woreda

01 Limo
02 Denka
03 Abasheni
04 Robit
05 Golboa
06 Damot (Damota)
07 Jari Fawha
08 Minchu
09 Seladia
10 Dino
11 Manye
12 Wat
16 Abet

Tehuledere Woreda

01 Bededo
02 Korke
03 Kossero
04 Weldelulo
05 Ketto
06 Boru
07 Kukumbi
08 Hitecha
09 Amamo
10 Hara
11 Hara (Ardibo)
12 Gobeya
13 Jari
14 Wahelo
15 Godguadri
16 Tebesa
17 Seglan
18 Gedera
19 Gerba
20 Jerjero
21 Ella
22 Gedero
23 Mudi Kalo
24 Adami
25 Weldiya (Kataleya)
26 Nibo Kotu
27 Muktelg
28 Melatti

Worebabo Woreda

01 Hara
02 Bullulo
03 Deve
04 Duheta
05 Fitto
06 Golosa
07 Gedero
18 Gudo

KALU AWRAJA

Kalu Woreda

01 Ancharo
04 Beke
05 Bosena
06 Mekeneti
07 Haroye Koreme
08 Erilo
19 Granamba
20 Abahaime
21 Abicho
22 Arabo
23 Argio
24 Mukah
25 Ankbo
26 Worebeti
36 Adawe

Bati Woreda

01 Kame
02 Melkaigo
03 Bera
12 Oda Aweleyu
13 Mahed
20 Gerfa Orene
(04 Chachatu PHC only)

DESSIE ZURIA AWRAJA

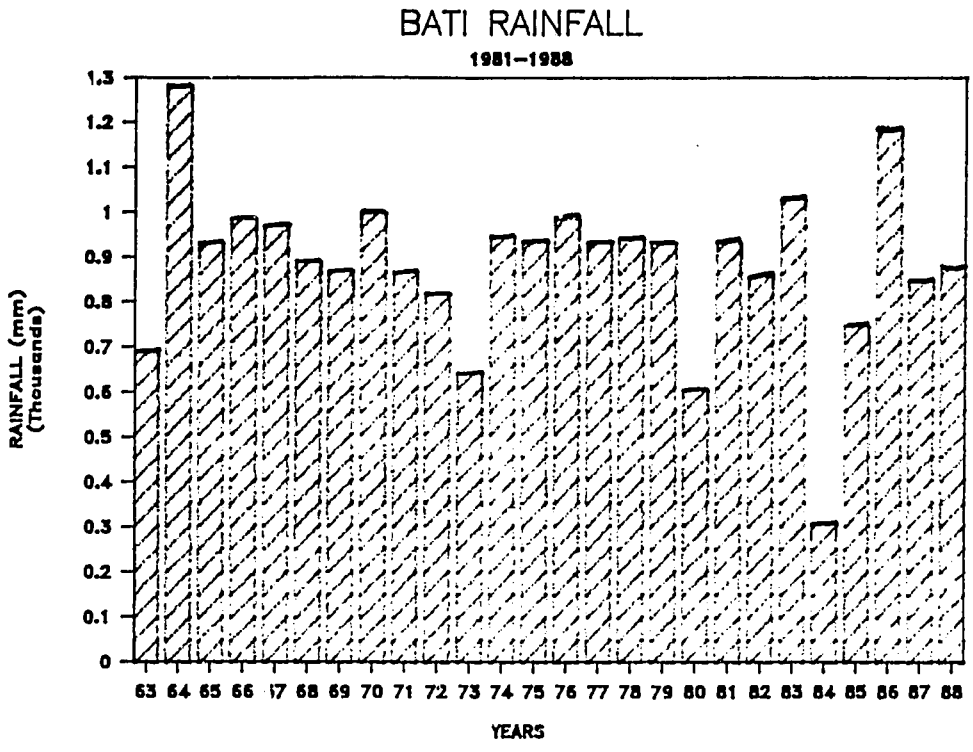
Dessie Zuria Woreda

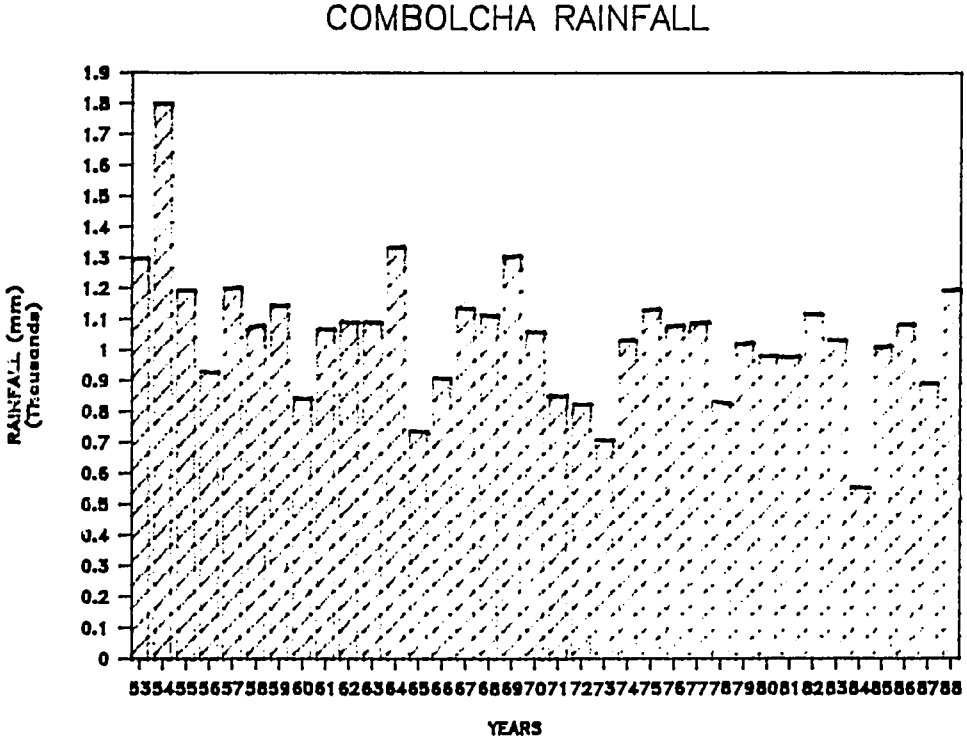
03 Edu
04 Sourdom

GRANAMBA

11/12

Figure 5. Rainfall in Kalu and Ambassel





3.5 Preliminary Checklist of Issues

The group also held a brainstorming session to identify the issues which they felt should be investigated. These then formed the checklist for the fieldwork and interviews.

General Questions

What species are present/planted?
What management systems are used?
Who is involved in decision-making?
Where are trees planted?

1. Hillside Closures

* What encourages?
What are the available technologies for hillside closure?
Is the manpower available?
Is there sufficient area available to allow closure?
What incentives (e.g. FFW) exist to encourage local involvement?

* What discourages?
How does climatic variation affect the availability of grass and the acceptance of closures?
What gaps in knowledge and misunderstandings hinder closure success?
Who owns the products of the closure; how are they used and distributed?
What are the limitations of existing extension?
Are there seasonal labour shortages that affect closure management?

* Positive effects
What is the impact on soil conservation?
Is a cut and carry system operating?
Does the closure encourage wildlife?
Has the fodder situation improved?
What are the long term prospects for fuel sources?

* Negative effects
Has the closure resulted in grazing land shortages?
Has the closure resulted in farm land shortages?
Has the closure resulted in short term fuel shortages?
What has been the impact of moving home/field sites?
Has the closure resulted in increased wildlife pests?

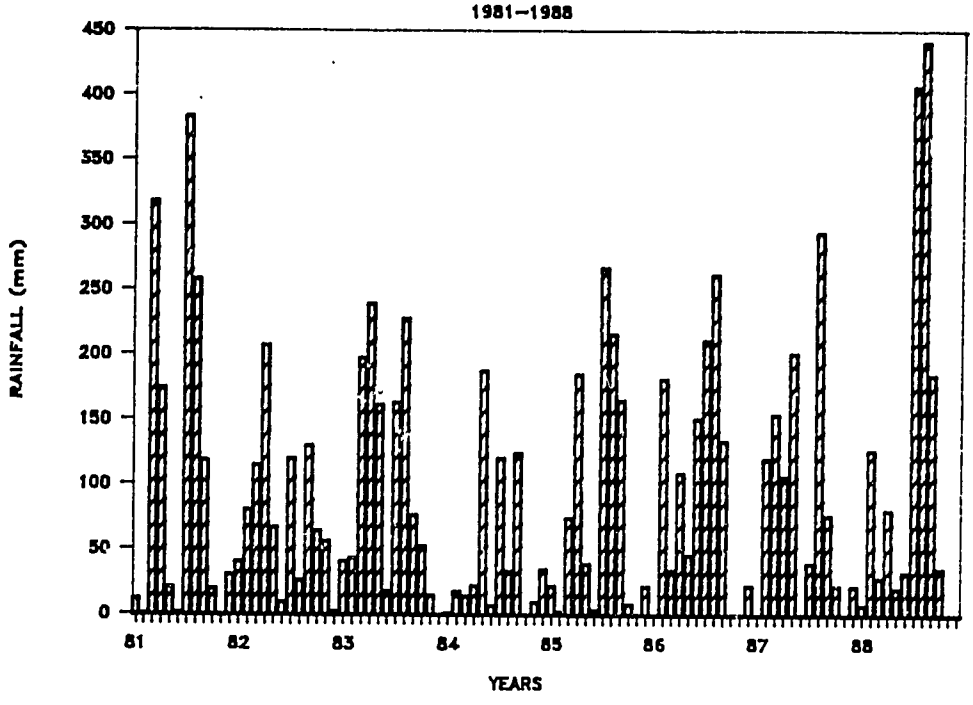
2. Tree Planting on communal land

* What encourages?
Are there local shortages of fuel wood, farm tools, construction materials, animal feed etc.?
Is communal planting a route to local income generation?

* What discourages?
Is there a shortage of communal land for tree planting?

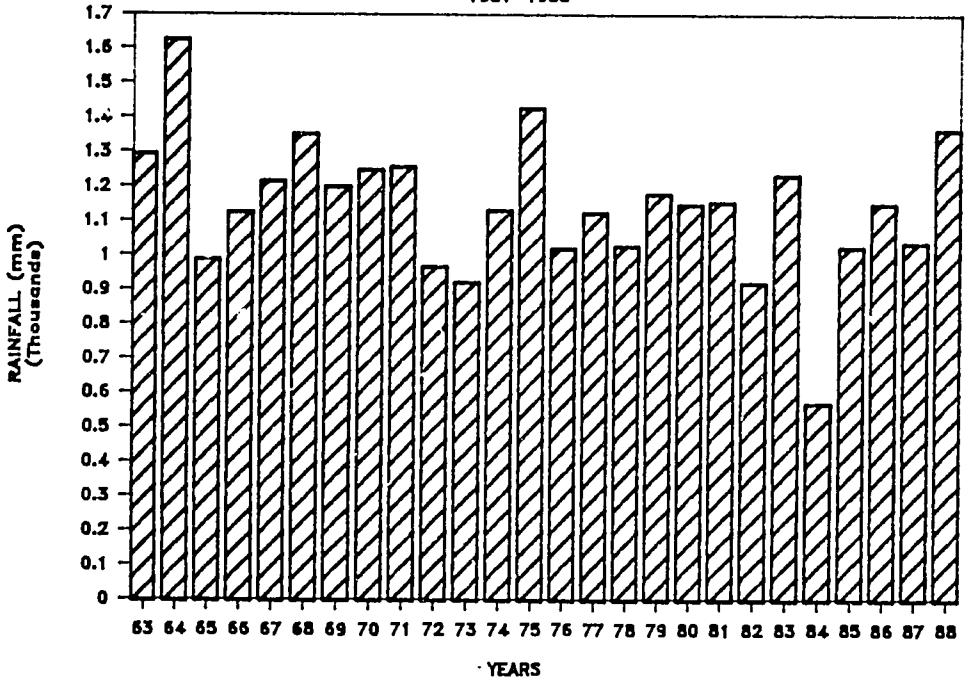
HAIK MONTHLY RAINFALL

1981–1988



HAIK RAINFALL

1981–1988



ISA

What is the local understanding of communal forest use?
What are the land quality limitations?
What is the establishment success for communal planting?
Is labour shortage a constraint to tree planting/management?

* Positive effects
Does communal tree planting improve soil conservation?
Does communal tree planting improve pasture?
Does tree planting increase local rainfall/moisture?
Has planting helped with the availability of fuelwood; materials etc.?

* Negative effects
Is there disagreement on how to use the products?
Are the species used appropriate/locally preferred?
Does communal planting result in land shortages for private use?
Is the communal forest land managed by local people?

3. Trees on farm land or around homes

* What encourages?
Who owns the land on which trees are planted?
Who owns the trees?
Who benefits from the tree products?
What income is generated from tree products?
What species of tree do farmers choose to plant? Why?

* What discourages?
In what ways do tree compete with crops for nutrients, moisture and sunshine?

* Positive effects
How do trees improve soil fertility?
How do trees assist in soil conservation?
What fruits are produced? Are they sold?
Are trees planted for fodder production?
How are trees used for fencing?
What trees are used for shade?
What trees are planted for fuelwood supplies?
What management systems are used to encourage high survival rates?

* Negative effects
Do trees attract rodents, snakes, birds, insects?
Does tree planting on private land discourage involvement with communal tree planting?
What are the impacts of tree planting in fields on farm land availability for cropping?

4. RAPID RURAL APPRAISAL TECHNIQUES: THE "BASKET OF CHOICES"

There are a variety of categories for RRA techniques, methods or tools. These are as follows:

Secondary Data Review - secondary data and information are published or unpublished data acquired by other people at an earlier time that are relevant to the topic or system under study.

Direct Observation - this encompasses any direct observation of field objects, events, processes, relationships or people that are recorded by the team in note or diagrammatic form.

Map - bold and schematic to obtain an overview of the resources of all types in the PA.

Transect - a representation of spatial differences that includes the major distinguishing features, including soils, crops, trees, livestock, wildlife, tenure and institutional issues.

Seasonal Calendar - a single diagram containing between-season changes in related components of the system under study, including climate, crop sequences, pests and diseases, perennial and wild harvests, labour demand, prices, human diseases, social events, income/expenditure, consumption of food, etc.

Historical Profile - major events recalled by informants and obtained from the secondary data

Venn Diagrams - in which key institutions and individuals responsible for decisions are represented by circles with differing degrees of overlap in order to investigate local perceptions of institutional control and decision-making.

Other diagrams - other diagrammatic representations of flows or decisions can be useful for demonstrating hypotheses or summarising interview information.

Preference Rankings - pairwise comparisons to investigate decision-making criteria between various items eg. trees, crop varieties, fruits, vegetables.

Direct Matrix Rankings - in which the items under investigation are ranked by informants according to favourable and unfavourable characteristics

Wealth Rankings - in which the perceptions of informants are used to rank households within a village or portion of a village according to overall wealth.

Key Informant Interviews - in which informants with special knowledge or who hold a position of interest are identified and interviewed on these topics

Figure 6. Hillside and Settlement Map

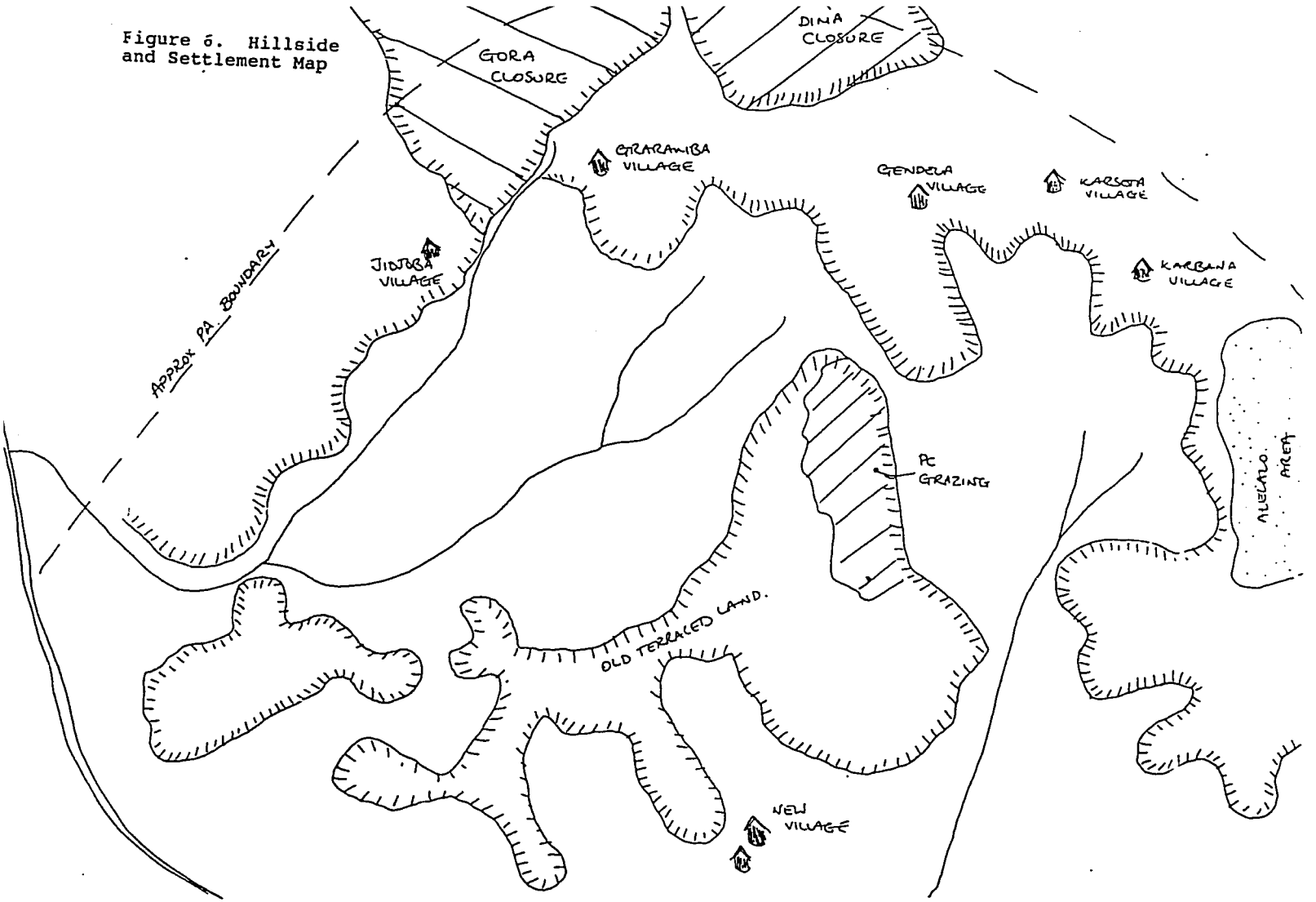
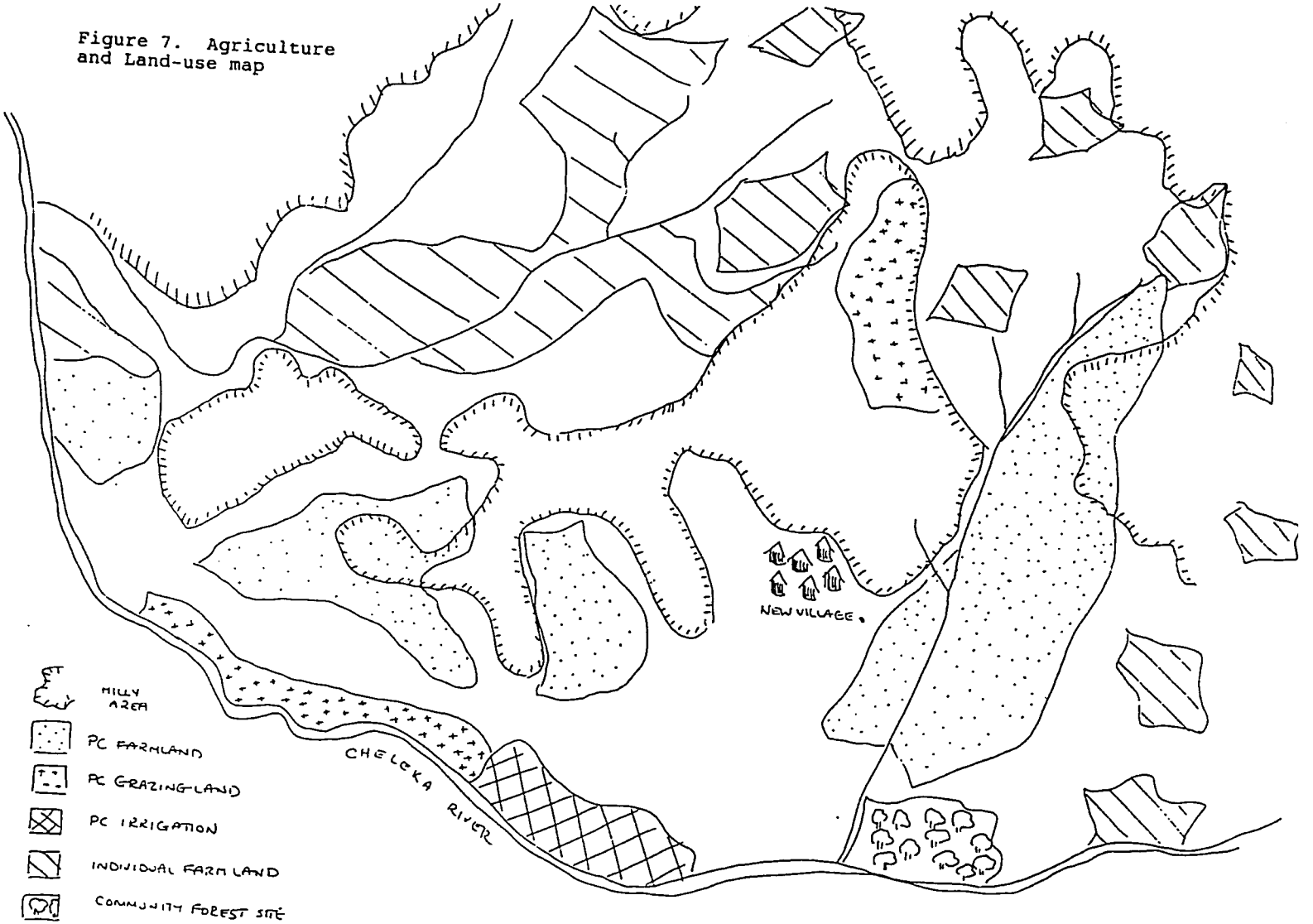


Figure 7. Agriculture and Land-use map



Focus Group Discussions - different groups in the community are gathered for open-ended discussion on key issues.

Community Workshops - open discussion sessions where research issues can be explored or results fed back to the community. Either managed with one group or with break-up into smaller discussion groups with plenary feedback.

Analytical Workshops - these are a means of bringing people together, including the field team and outsiders introduced for their skills and experience, to participate actively in reviewing, analysing and evaluating the information gathered. Workshops are typically fairly intensive, switching between plenary and group work, and aim to arrive at a consensus of opinion over priorities for action.

Any Rapid Rural Appraisal exercise uses a selection of these techniques to generate and cross-check information. The choice of techniques is dependent on the objectives of the exercise. RRAs combine short intensive periods of field work interspersed with analytical workshop sessions.

5. METHODS USED IN THE RAPID RURAL APPRAISAL

The RRA team split into two groups for the duration of the exercise. One group focussed on Graramba PA, the other on Bededo. Each group represented a range of disciplines and experiences. In the field sub-groups were formed for interviews and group discussions and the team came together again for discussion and analysis workshops. Presentations were given to the full group from both PAs during analytical workshops so that each group could assess and critique the progress of the other - suggesting new techniques and new avenues for exploration.

In this work a central theme was the use of **focus group interviews** and **community workshops** to investigate the different attitudes of interest groups within the PA. This was complemented by **mapping/transect** exercises with farmers, **ranking** games and with **interviews** with individuals.

The first day of the workshop included a brainstorming session that concluded with the construction of a list of possible focus groups. The aim was to cover the **range** of interests and opinions in the PA, rather than to formally stratify the population. The preliminary list included:

- PA leaders
- Producers Cooperative members
- Individual farmers
- Women
- Youth
- Site guards
- People living close to area closures
- Old men
- Old women
- Livestock owners
- Female headed households
- Immigrants

Each PA group chose a selection for focus group discussions. These discussions were centred on various themes. For instance the old people were encouraged to give a historical perspective to the current situation and the women to give attitudes according to their perceptions of the problems. Checklists of questions were prepared beforehand but the discussions were encouraged to flow freely. In some groups ranking games were used to discuss preferences and these assisted in generating heated debate amongst the group.

Working with a small group (between 3 and 15) allows an uninhibited discussion to develop and people generally spoke freely of their concerns. The difference in attitudes between groups is clearly illustrated in the summaries that are included in the following sections. In community level planning this diversity of opinions is important to take into account and the various interest groups in the PA given an opportunity to air their views.

The choice of participants for the group interviews was not carried out by the RRA team but was organised by the PA leaders. The same applied to the place where group discussions were held; generally a central spot near official PA buildings. The degree to which these factors included a bias in information collected remains unknown. Attempts were made to cross-check with other interviews with individuals encountered in other parts of the PA, but the possible biases should be made explicit and remain a concern if the approach adopted here is to become central to participatory planning within the PAs.

Following the series of focus group discussions, the individual interviews in the villages, the map and transect exercise and the ranking games a series of "best bet" options were drawn up by the team. These were of a preliminary nature and based on an analysis of the diagrams produced in the first fieldwork phase and the listing of problems and opportunities.

These "best bet" options generated a series of further questions and ideas which the RRA team then followed up with different groups and individuals in the PA during the next day and a half of fieldwork. These discussions served to refine the "best bet" ideas considerably.

The finalised "best bet" ideas were then taken to a final community meeting. This meeting was attended by representatives from each of the focus groups that had been involved in the discussion throughout the fieldwork. This proved a successful format as people who had been party to discussions at an earlier stage in the RRA felt confident to offer their ideas to the wider group. The discussion was therefore open and fluid. The two groups followed slightly different formats. In Bededo the discussion was left open-ended and people were left to discuss what were the "best bet" options without intervention from the RRA team. This generated a useful complement to the Best Bet list generated by the focus group discussions. In Graramba the team discussed each of the Best Bet options with presentations by team members and the use of the PA maps. The assembled group reviewed, criticised and altered the proposals with many interventions from all groups present. The final stage involved a ranking of the options and a prioritisation for project implementation.

Since people had been involved in the lead up to the final planning meeting, there was a sense of involvement in the discussion. Despite different attitudes and opinions, options were found that developed a consensus or a compromise between different interests.

6. GRARAMBA PEASANT ASSOCIATION

6.1 Profile of the PA

Setting

Graramba, or the Acacia plain, is situated close to the small market town of Degan and to the south of the road between Combolcha and Bati. The area is dry with an average rainfall in Bati of 887mm. This varies dramatically between years and the coefficient of variation is 20.5%. The altitude varies between 1500m along the Cheleka river area up to 1700m in the hills in the south of the PA (see Figures 6-8).

Settlement patterns

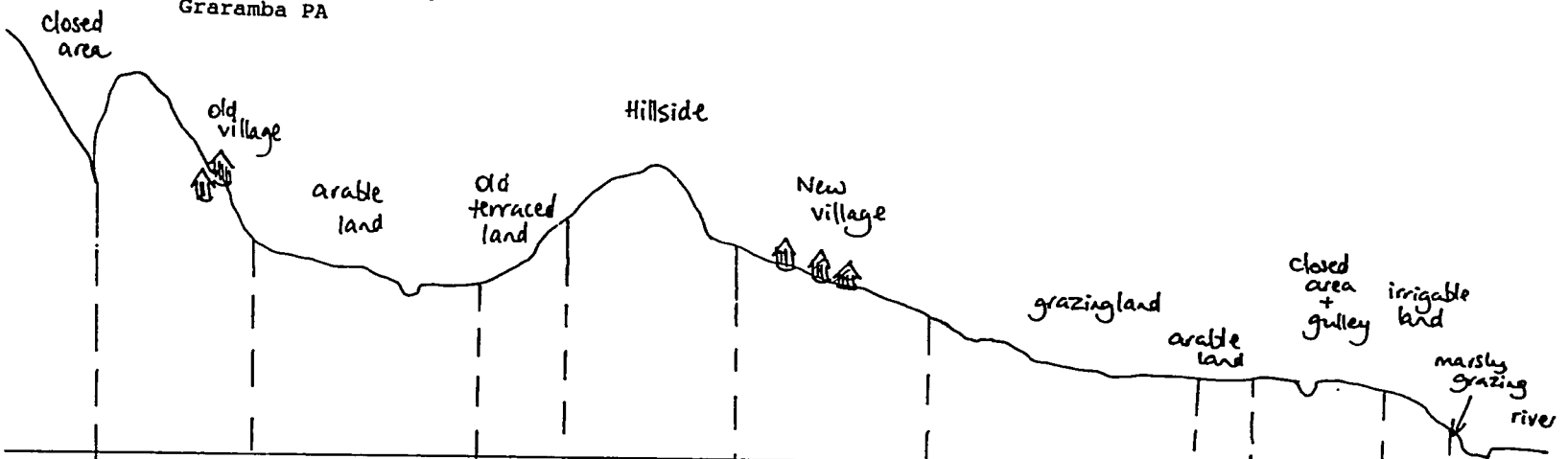
Prior to villagisation, settlements were scattered; clusters of houses were located on the hills throughout the PA area away from the malaria risk of low lying areas Homes were often located close to hillside springs and the fields were scattered nearby, with families often having a combination of hill and valley field areas. These plots had been allocated to people during the land redistribution following the revolution in 1974. In 1987 a consolidated village was formed and to date approximately 250 families have been moved to the new site. A few other settlements remain near springs in the south of the PA, but the villagisation plan envisages that these homes will also move to the new village. The new village has a health post and a collection of official PA buildings.

Water sources and Health

The new village is situated on a slightly elevated plateau away from the Cheleka river. This is the main source of water for the village. Women must collect water in the early hours before the river water becomes turbid through livestock and human activity. The round trip from the new village takes approximately two hours. The Cheleka river is also the source of water for the PC irrigation scheme which uses water diverted in a channel to irrigate 18ha of land. There are no springs in the vicinity of the new village; these are located on the other side of the PA and offer some potential for small scale irrigation. Water is otherwise scarce in the PA with only seasonally flowing streams and gullies (see Figure 9).

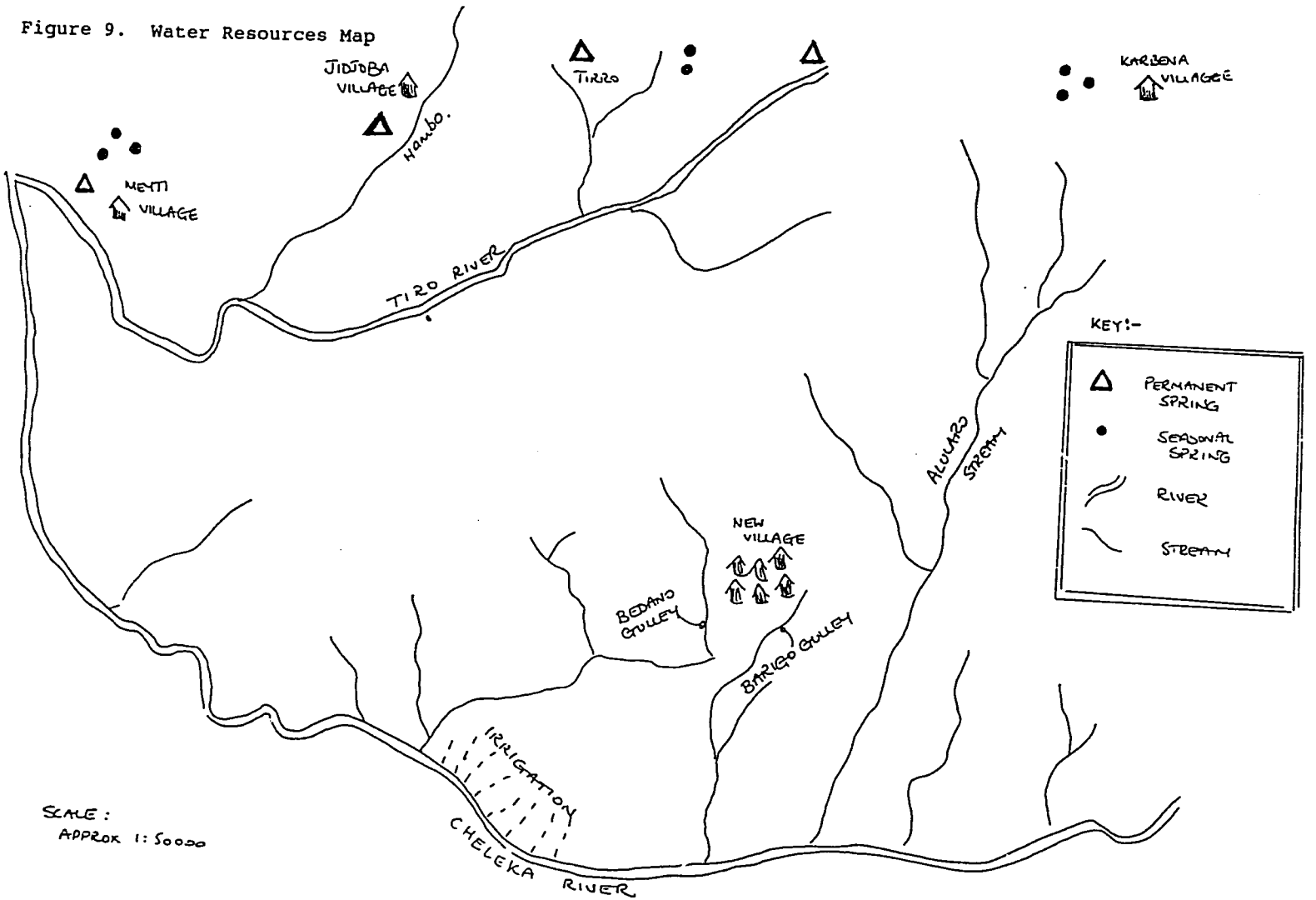
Discussions with various groups brought up the issue of water borne diseases and malaria. The incidence of these diseases is seasonally differentiated (see Figure 12) with peaks during the two rainy periods. The prevalence of these diseases was thought to be related to the reliance on the Cheleka river. Marshy areas close to the river breed mosquitos and the water quality is poor with the likelihood that water borne diseases are transmitted to the human population.

Figure 8. Transect
Graramba PA



LAND USE									
SOILS:	SHALLOW SOILS SANDY SILTY		SANDY LOAMS WITH BLACK SOILS	SANDY LOAM	LITTLE TOP SOIL, SANDY ROCKY		SANDY LOAM STONES	LOAM	LOAM	ALLUVIAL
TREES:	Weira Agame Sebobeda Eucalypt	Sibensa Kurkura Agame Dedecho	Wanza Shola Kurkura Besana	Sibensa, Atat, Agamp, Wolkahya, Dedecho, Woeta, Kurkura, Grar.		Grar Kurkura (Eucalypt)			Neechgrar Kurkura	FRUIT TREES
GRASS:	Sambalet Bila Sokake		Sardo Bila	Sardo Sambalet		Sardo	Sardo Bila		Sardo	Sardo Reeds
CROPS:		Maize Cowpea	Sorghum Sesame Maize Teff					Sorghum Maize Teff Chickpea		Pepper Sweetpot Veg. Bitkena Sugarcane
LIVESTOCK.		Goats, Donkey,	Cattle, Camel			Poultry	Goats, Cattle,	Donkey,	Camel	

Figure 9. Water Resources Map



Population

The population of Graramba is estimated at 416 households (see Table 1). Of these 96 have joined the Producers Cooperative. These people have privileged access to irrigated land and grazing land for the PC oxen.

Table 1:

	Family heads	Total numbers
Men	346	494
Women	70	892
Total	416	1386

Age structure:

	Men	Women
0-6	225	205
7-30	324	372
31-45	281	193
46+	10	192

Historical interviews indicated that the population has grown considerably over the last 40 years and old people consider that the present natural resource management problems are a consequence of this sharp increase in local demands. The demographic structure of the population indicates that it is still growing. Losses from the local population occurred during the catastrophic famine of 1984/5, during the resettlement programme and through out-migration to urban employment or abroad for employment in Djibouti.

Livestock

Livestock populations have shown a similar pattern of increase over time, but suffered dramatic losses through death or sales in the droughts of 1972/3 and 1984/5. Farmers indicated that goats were the least hard hit and that populations soon bounced back to previous levels, but cattle populations are recovering more slowly. Camels have traditionally been an important link between the residents of Graramba and their trading partners the Afar

from the lowlands. Camels used to be hired for periods during the harvest for transport and returned to the Afar later. This system of exchange has apparently decreased, but the interaction between the two areas remains important for trade and the use of mountain grazing by the pastoral stock in times of drought.

Figures 10 and 11 give a diagrammatic illustration of the seasonal patterns of livestock feed sources, milk and meat outputs and disease incidence. Oxen belonging to PC members have reserved grazing areas. During the dry season PC oxen graze along the river and during the rains in reserved hillside areas. The extent of grazing available for other livestock is much more limited. For most of the year they are reliant on fodder derived from the field or home site areas. This represents crop residues (stored or in the fields) or field edge grazing in valley areas. Only during main cropping season do other livestock use the communal hillside grazing. This is due to the restriction imposed as a result of hillside closures, as well as the long distance from the new village and potential grazing areas. This pattern of grazing results in considerable grazing pressure in relatively small areas in valley bottoms and in fields. Cattle tend to be herded throughout the year, especially as much grazing is carried out close to fields. Goats generally use hillside areas close to the village.

Cropping system

The cropping system in Graramba is dominated by sorghum. A single crop is grown each year in the dryland fields. Land preparation starts during late February and March. The first crops are planted in April/May, depending on the extent of the belg rains. Sorghum, maize and sesame are planted early, while teff and chick peas are planted during kiremt. Harvest follows weeding and is completed in November/December (see Figure 12).

With the advent of the irrigated area using diverted water from the Cheleka river, the cropping opportunities for Producer Cooperative members have increased. Cash crops such as sugar cane are combined with other perennial crops like bananas. These provide outputs throughout the year (see Figure 13).

Other income sources

Although agricultural and livestock production provide the mainstay of the village economy, other activities are also important. Certain crafts provide seasonal income for some peasants and seasonal migration for work in Djibouti also occurs. This movement occurs after the harvest in December until the beginning of the cropping season in March. This is linked with income from trading which has long been a tradition of the people in this area.

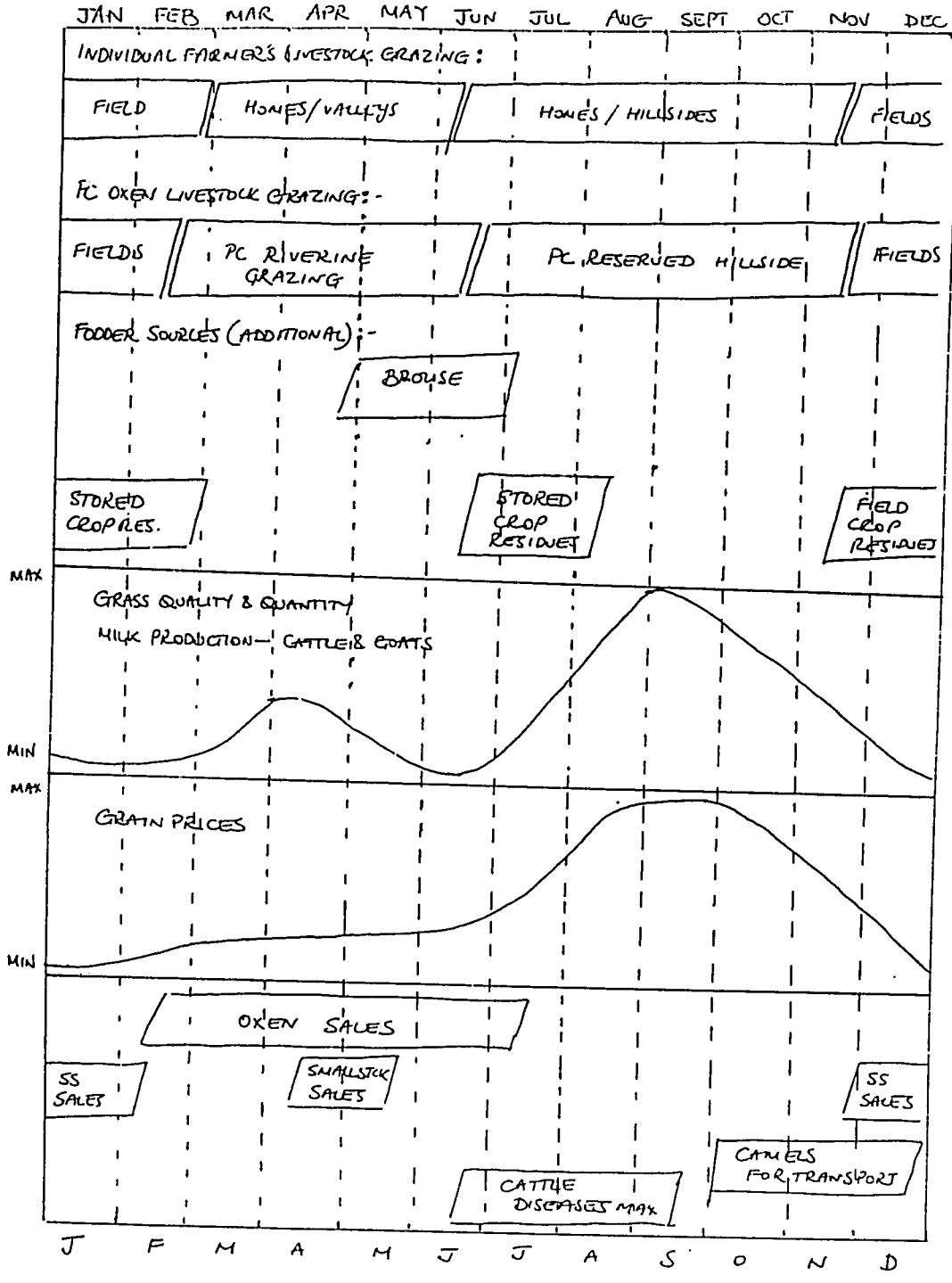
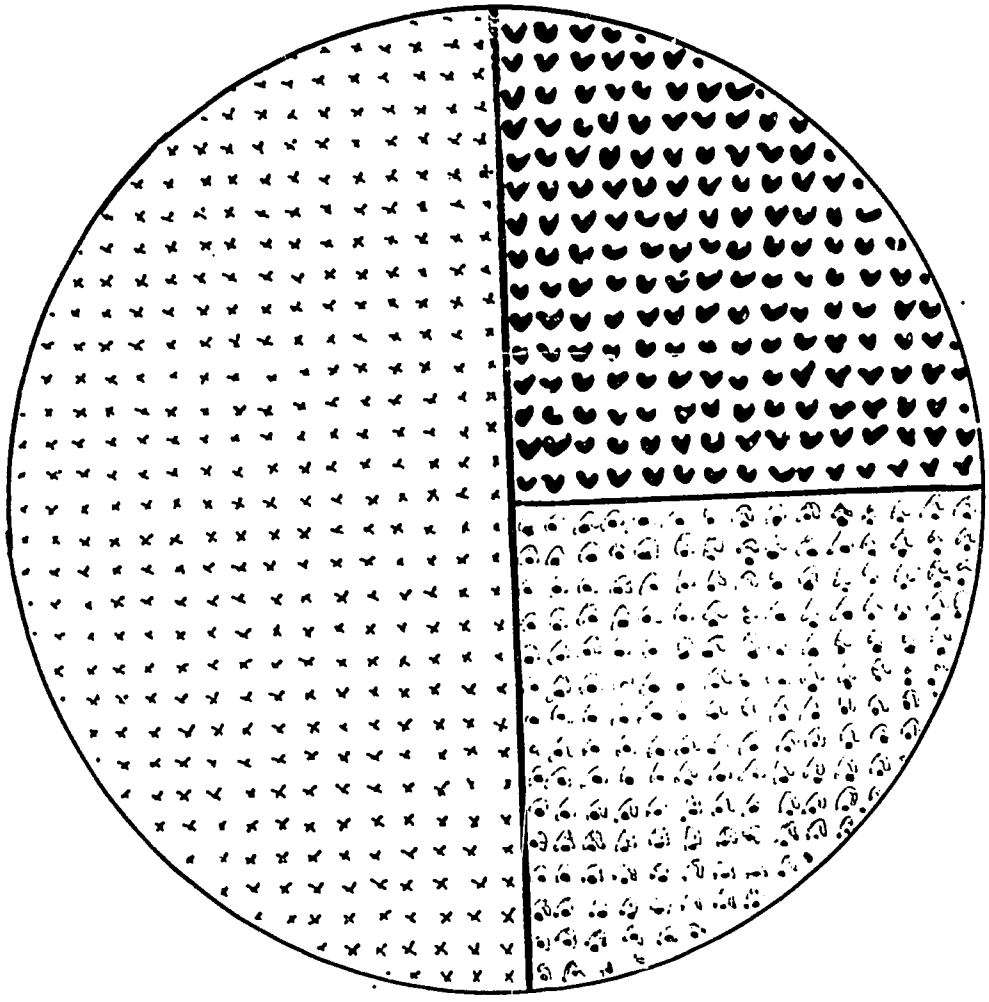


Figure 10. Livestock seasonal calendar, Graramba PA

Figure 11. Feeding calendar for livestock



JULY – SEP. Hillgrazing, Teff straw and stalk (sorghum)

OCT. — DEC. Crop residuals, aftermath and marshy area.

JAN. — JUNE Hay, stalks and Non irrigable & irrigable land

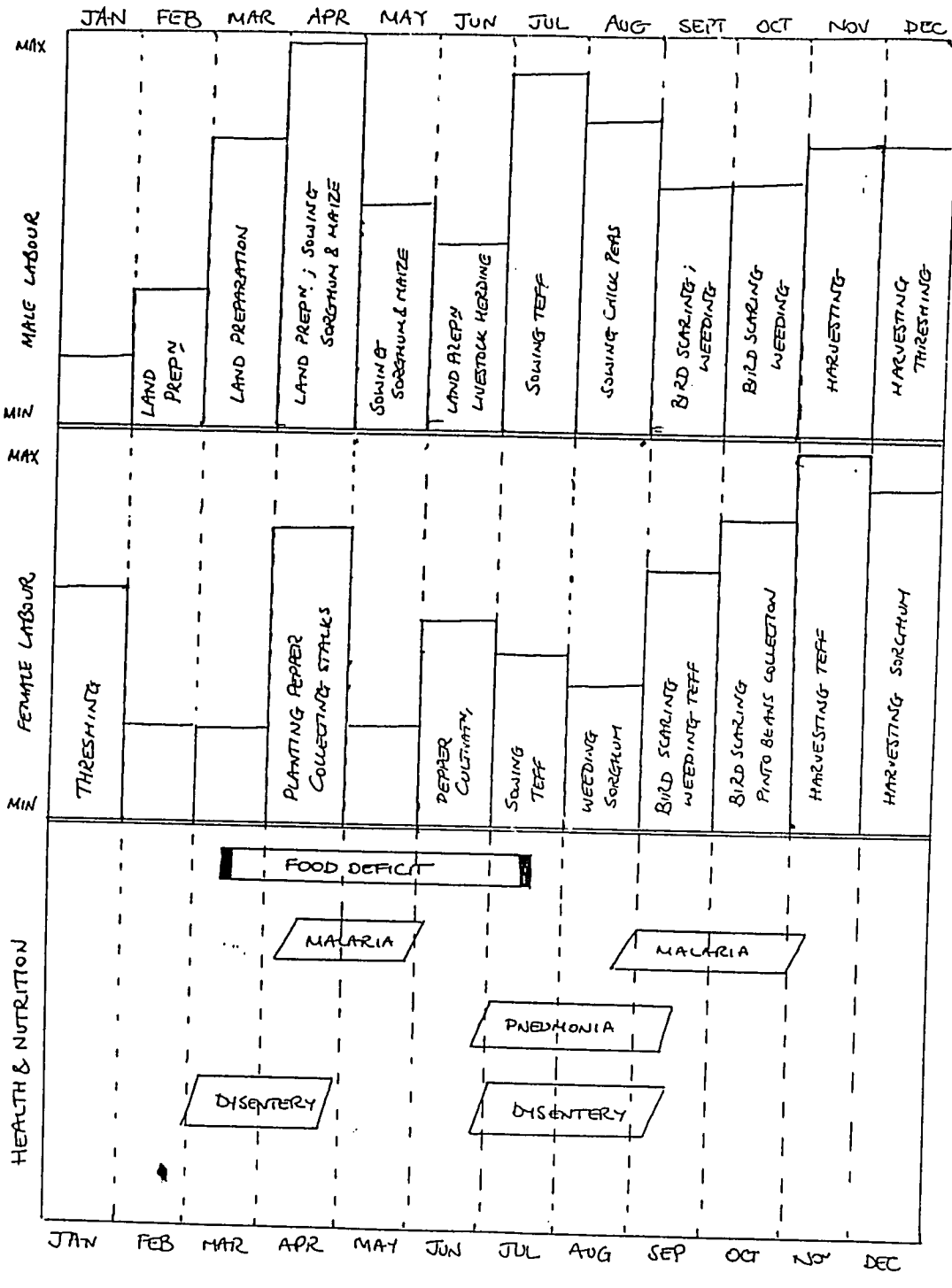


Figure 12. Labour and disease calendar

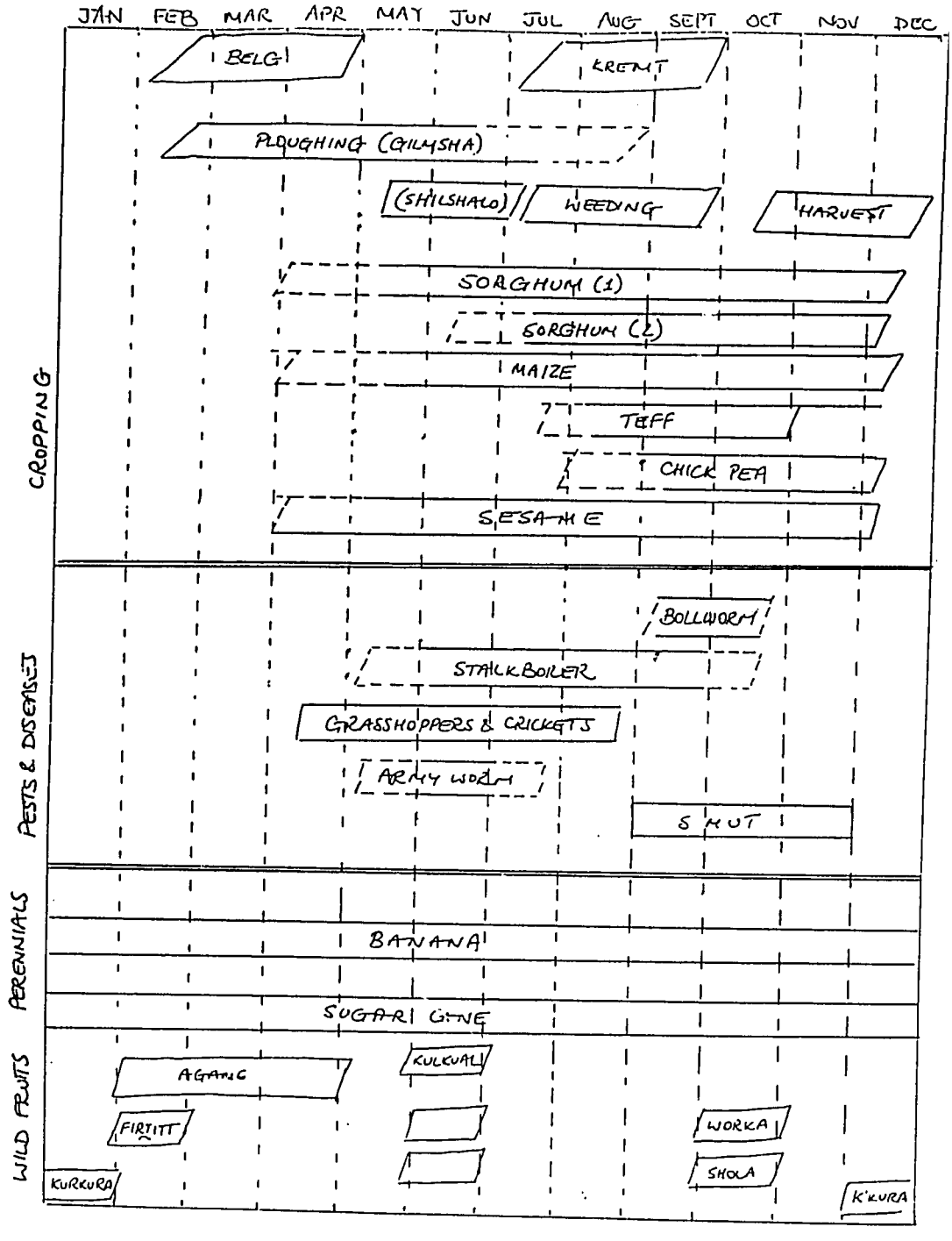


Figure 13. Cropping calendar

The woodland resource

The woodland resource of the PA is quite extensive comprising perhaps half of the total land area. This woodland is a vital source of firewood, browse, construction materials etc. The area can be divided into a number of different categories; each with different characteristics (see Figures 7 and 8).

1. Old farm or village sites in the hill areas

   Terraced land that was cultivated prior to resettlement and villagisation is regenerating slowly. In part because of the poor quality of the remaining soil and in part because of continuing livestock pressure. Village sites were generally chosen with better soil and water conditions. With inputs of manure and other waste over time and the planting of trees, old home sites represent particular micro-sites of different woodland.

2. Abandoned home/field sites in valley areas

   Regeneration in the better soils of the valley areas appears to be quicker, due to the better quality of the soils and higher water availability

3. Open hillsides

   Hillsides that have remained open grazing throughout have generally a sparse cover of low woodland dominated by Acacia spp. The soil is thin and poor and the grass cover is of low growth form pioneer species (eg Cynodon dactylon)

4. Closed hillsides

   There are two areas of closed hillside in Graramba - Dima and Garo. These were closed 7 and 10 years ago respectively. These areas have a much more mature woodland, which is quite dense in areas of better soil and water conditions and shallower slopes. Some additional planting has taken place inside the closed areas, usually in small blocks with fast growing species such as Eucalyptus camaldulensis. The grass cover is in many places dense and tall and is dominated by thatching grasses (eg Hyparhennia spp.). Where canopies have closed over the grass has diminished. This is also the case where plantations of eucalypts have survived and grown to maturity.

6.2 Attitudes of Different Groups in Graramba

The attitudes of different groups within the community towards issues of tree planting and woodland resource management were investigated during a series of group interviews. Each discussion was open but a checklist of issues was prepared by the RRA team for guidance. Each group discussion tended to focus on a central

theme and these are emphasised in the following summaries. The discussions were attended by 3-15 farmers and 3-4 RRA team members. RRA team members took turns to lead the discussion. Often there was no need as the group debated amongst themselves. The meetings were recorded by all team members and written up subsequently. The following are summary reports highlighting some of the key issues.

6.2.1 Attitudes to Hillside Closures

The discussion with the PA leaders (11 men) focussed on woodland management and hillside closures. In the past the hillside woodlands of Graramba were covered with a forest with a range of useful species. The dominants used to be:

Tid	Juniperus sp.
Kurkura	Zizyphus spina-christi
Sebensa	Acacia sp.
Tukur grar	Acacia sp.
Warka	Ficus sp.
Weira	Cordia africana
Weiba	Terminalia sp.
Kulkuhal	Euphorbia sp.
Dedeho	Euclea sp.

The forests used to be a refuge for wildlife species. These included: monkeys, baboons, antelope, wild pigs, leopards etc.

Unprotected areas in the PA now have poor grass and woodland cover. Certain areas are suffering from erosion. The trees on heavily utilised hillsides are generally shorter bushes; mostly Sebensa.

A number of areas have been closed over the past decade. These are:

Garo closure. This area was closed in 1980. It is very inaccessible and is about a 3 hour walk from the new village. The area is guarded by a local person. Since the start of the UMCC-DPP project he has been paid on a Food for Work basis, receiving 90 kg of grain and 4 litres of oil per month. The closure has resulted in significant regrowth of the tree cover. Today Agam, Digita, Weira, Dedeho, Yabesha grar, Kulkuhal are all found there. There is also a very dense grass cover (Sambalet, Bila). The closure has reduced the amount of soil loss and controlled the expansion of gullies. In addition, some wildlife has returned to the area.

The problem with the closure according to the PA committee is that it is inaccessible and therefore the products cannot be extracted for PA use. The group recommended the construction of a road to the area.

Terra closure. This area was closed during 1983. It remains only partially closed and some grazing still occurs. The cutting of trees is however completely forbidden. The area is not guarded. The tree cover is not as dense as in the Garo closure as the soils are thin and poor. The vegetation is largely dominated by Sebensa.

Kebena closure (Dima). This area was closed around 1983. The area has poor rocky soils. The trees that have regenerated are stunted forms of Agam, Dedeho and Sebensa. Attempts at planting of Eucalyptus camaldulensis, Shinus molle and Acacia saligna failed due to the poor soil.

In general the PA committee emphasised the need to continue with the closures, but ensure that products can be used locally and by individuals. This particularly applies to the grazing resource which is now unutilised. There was thought to be a need to work out a locally appropriate system for utilisation. The PA thought that there was a need to continue employing a guard. The community could not be self-policing and the presence of a guard engendered a sense of "fear and suspicion" that dissuaded people from breaking the regulations.

There was agreement that there was a particular need for construction wood. They suggested planting around the village, near the river and in the closed areas.

6.2.2. Attitudes to Livestock Management

Another group of PA committee members (15 male farmers) was involved in a discussion that focussed on livestock management and production. The results of much of this have been reported above (see section 6.1). An important theme that emerged was the scarcity of grazing felt by individual farmers. Since large sections of potential grazing had been removed for hillside closures, individual farmers were relying on small uncultivated portions of arable land, crop residues and heavily utilised hillside areas for livestock feeding. This was thought to be insufficient and would certainly be so in the future as livestock populations recovered from the drought. This pressure is not felt by PC farmers whose oxen have reserved grazing both on a hillside area and by the river (see Figure 10). Individual farmers were therefore particularly keen to see hillside closure areas utilised for their grazing resource.

Browse species were also seen as important for ensuring the availability of fodder. Most trees currently available in grazing lands are Acacia spp. which are not suitable for cattle, although goats thrive. Browse species for cattle were therefore investigated for cattle. A ranking exercise was carried out that looked at cattle' preferences and also assessed overall availability. People thought it would be a good idea to try and plant these species. They had already requested assistance from the MoA, but had been told that no seed was available.

Table 2 Browse Preferences (Cattle)

	GOOD	BAD
1.	**Hilbassa (1)***	
	Soft leaf, good for newborn calf Increase milk production	Few leaves
2.	**Harorisa (2)**	
	No hook, a lot of leaves Increased milk production Good for cows Short height and available Digestible	
3.	**Kaot (3)**	
	Smooth, like grass	Cannot feed to small calves
4.	**Weira (4)**	
	No hooks, good food, fattening	Tastes sour, difficult to start eating, overused, getting less
5.	**Habalo (5)**	
	Sweet, builds the body	Little water content
6.	**Sebenza (1)**	
	Available in rainy season Good Taste	Hooks Small leaf Not eaten outside rains

* Ranking of local availability

6.2.3. Attitudes to Trees in Arable Areas

The discussion with the PC members (7 male farmers) focussed on the potentials of trees within arable areas. This includes both the dry fields and the irrigated land adjacent to the Cheleka river (see Figure 7).

On the irrigated land PC members thought that fruit trees offered a good potential for cash cropping. There was a certain market in Degan (each Saturday), Bati (each Monday) and Arefebie (each Tuesday). Bananas are already producing and receiving 10-15c per fruit in the market. Papayas (75c per large fruit), mangoes and guavas (10-15c per fruit) had recently been planted and production was expected in a year or so. Fruit tree planting was seen as a good option as the low labour requirements suited the PC needs, since labour was seen as a constraint on other PC activities. The PC had access to suitable land for planting and thought that provision of seedlings and extension support were all that was necessary.

Trees on dryland fields used to exist, but few remained. Most had been removed to reduce bird attack or had died during drought periods. These days trees are retained, but leaves are pruned during the cropping season to dissuade birds. Trees in fields are used for shelter and shade, for fruit and for the provision of humus. When cropped they may provide firewood, poles or timber. Some eucalypts and A. saligna have been planted in field areas, but these are generally not liked as they affect the performance of the crops. No active planting has been going on of preferred species (see below). People commented that "we leave the livestock to plant them as there are no seedlings in the nurseries of these types."

The species that were preferred in field areas were investigated in a pairwise ranking exercise. The results show the preferences for multipurpose indigenous trees. This issue was followed up at a later stage and further options for possible species choices and positions within the field areas investigated (see section 6.4).

Table 3 Results of Ranking of Trees in Fields

	GOOD	BAD
Kurkura	- Farm implements - Fencing - Fuelwood - Fruit - Fodder - Construction	Less tolerance for termites
Wanza	- Construction - House utensils - Farm implements - Handtools	Less availability
Shola	- Construction - Handtools - Utensils	Less availability
Uiaza	- Farm implements - Construction	Limited use
Akumbilo	- Furniture (bed) - Fuelwood - Spoons - House construction	Limited use
Besanna	- Alleviates rigor mortis before burial - Shelter	Limited use Less tolerance for termites

[Weiba was discussed following the ranking. The group thought that it was equivalent to Wanza and would have come equal second in the ranking.]

6.2.4. Attitudes to Community Tree Planting

A group of individual farmers (8 men) focussed on the issue of community tree planting. Their experiences had not been

encouraging. The site chosen by MoA officials close to the river (see Figure 7) had been planted with eucalypts and A. saligna on three occasions; each time there was very poor survival. They regarded the site as unsuitable and suggested that the best option for community planting was to choose sites with good soils, some water available and plant it with species that would be both useful and survive well. Although they supported the idea of planting trees they pressed the point that it was necessary for individuals to gain benefit from community projects. To date no benefits had been reaped from community woodlots, but they understood that the products would only be used for the PAs communal projects. This was insufficient incentive for people really to invest their labour in such a project and ensure that it worked out. The planting and maintenance of tree seedlings, the group pointed out, requires significant commitment. The labour calendar for individual (male) farmers was investigated (Figure 12) to explore the potential conflicts between tree planting and other agricultural/income generating activities. The group concluded that peak labour requirements for farm work coincided with the ideal timing of seedling planting. This was seen as problematic for future projects. Alternative planting systems, requiring lower labour inputs, were considered briefly (e.g. direct seeding).

Although trees were regarded as important to their lives, the farmer's uncertainty about community projects was evident. They felt that the critical issue was the lack of grazing land for their oxen (e.g. individual farmers). Land reorganisation had squeezed their options for grazing and they now had to rely on the valley/field areas almost throughout the year (see Figure 10). These areas used to be reserved grazing for the dry season. Further closure or land taken for community woodlots was seen as possibly making this problem worse.

6.2.5. Attitudes to Water and Firewood

The women's group (5 members of Women's Association) emphasised in their discussion the problems of firewood and water collection. They argued that these activities are taking an increasing proportion of their time. In the past firewood could be collected readily in the immediate locality of the homes. Today women have to walk 4 hours from the new village to collect firewood. Firewood remains the dominant fuel source, but people are also using crop residues and dung to supplement.

Water collection is a similar problem. In the old village areas a collection time of 45 mins from local springs was possible. Now a 2 hour trip to the Cheleka river is necessary. This trip has to be done early in the morning before the river water becomes too muddy. The women's group noted that their wide range of responsibilities included cooking, fetching water, collecting firewood, grinding, cleaning, as well as travelling the long distance to the farm area where they are also involved in farming.

The pattern of labour requirements is illustrated in Figure 12 which was drawn up with this group. The women pointed out that the additional work obligations in addition to farming activities and the increasing time required to carry these out due to resource scarcity and the siting of the new village constrains the women's options for being involved in other activities such as tree planting.

However, the women did argue that more tree planting was necessary to alleviate the firewood scarcity and reduce travel times. Sites close the village including home gardens were recommended although the lack of space and the inadequate water supply in the new home areas was seen as a problem. The types of tree species the women would like to see planted were discussed and a ranking produced.

Table 4 Fuelwood Preference Ranking

	GOOD	BAD
1.	**Agame (4)***	
	- best for baking Injera	- thorny
2.	**Degita (5)**	
	- charcoal - used immediately	
3.	**Dedeho (2)**	
	- available	- no charcoal
4.	**Debobesha (3)**	
	- charcoal - available	
5.	**Sebensa (1)**	
	- available	- thorny
6.	**Weiba (6)**	
	- incense - ladies use it for beauty - medical use - income generating	- worms

* Ranking of availability in the area

6.2.6. General attitudes to environmental problems

The group discussion with the youth (10 men) focussed on a number of themes:

- The expansion of the Cheleka river and the need to control it.

- Gulley erosion near the main village and the threat to farmland.

- The lack of grazing for individual farmers. This was disputed by some, saying that the collapse in livestock populations had resulted in sufficient grazing for all cattle.

- The need to mobilise the community for group development activities and the role of the Youth Organisation in this.

Discussion also turned specifically to tree planting. The group were asked to list the 20 most important trees in the area (including both indigenous and exotic). These are included in Table 5. This represents a compilation of information from a series of interviews on the uses of these key species found in the PA.

Of these, the six most important were chosen and they were ranked (see Table 6).

Table 5

Local name	Scientific name	Fuel	Const'n	Browse	Window	Incense	Tools	Fence	Fruit
Tid	Juniperus sp	x	x	x					
Kurkura	Zizyphus sp	x	x		x		x	x	x
Sebenza	(Acacia asak)	x	(x)				x		
Tukur grar	A. abyscinica	x	x					x	
Warkar	Ficus sp	x			x				
Weira	Olea africana	x	x			x	x		
Weiba	Terminalia sp				x	x			
Kulkual	Euphorbia sp	x			x				x
Dedeho	Euclea schimpiri	x	x						
Agam	Carissa edulis	x	x						x
Shola	Ficus sp	x	x		x		x		x
Wanza	Cordia africana	x	x		x		x		x
Ulaza	Ehretia cymosa	x	x				x		
Akumbilo	-	x			x				
Besanna	Croton machrostachys	x					x		
Bahr saf	Eucalyptus camaldulensis	x	x		x				
Hintchero	-		x						
Firtitt									x
Warka	Ficus sp								
Gumaro	Capparis tomentosa								
Habalo	Brucea antidysenterica								
Hilbassa									
Kaot (Fetekoma)	Ceetis kraussiana								
Kelama		x	x	x			x		
Wute									
Kega	Rosa abysinnicca			x					x
Halder		x		x					
Debobesha	Rhus sp	x	x	x			x	x	
Kenteta	Pterolobium stellatum	x		x				x	
Arorisa		x	x	x			x		
Woynahiya		x		x				x	
Atat	Maytenus sp	x						x	

Table 6 Ranking of selected trees from priority list of 20

	POSITIVE	NEGATIVE
Weira	Tools, incense, house, furniture, fuel, feed, durable	Slow growing
Bahr saf	Houses, furniture, tools, weaver beam, fuel, fast growing	High transpiration, suppressing other plants (agressive)
Kurkura	Tools, houses, furniture, edible fruits, fencing, feed	Soft wood, termites
Wanza	Furniture, tools, doors, gum	Shading
Weiba	House, incense, tools	Shading
Hintchero	For cleaning, house wall, durable - not attacked by termites	Shrub, no timber

6.2.7. Attitudes to environmental change

A group interview with three old men focussed on the historical changes in the farming system. They characterised the area during two periods.

Before 1935: The area was covered with dense forest with little cultivated land. The soil in the area was very fertile. People settled in the high land to avoid the malaria infections of the low lying areas. At this time the Cheleka river was narrow with a small even flow. Everyone owned at least 7 cattle. Sorghum yields were high; estimated at above 50 qtl/ha. The crops attracted many bird pests and the people removed all large trees from the field areas. At that time nobody was even dreaming about the shortage of firewood, rainfall and other disasters.

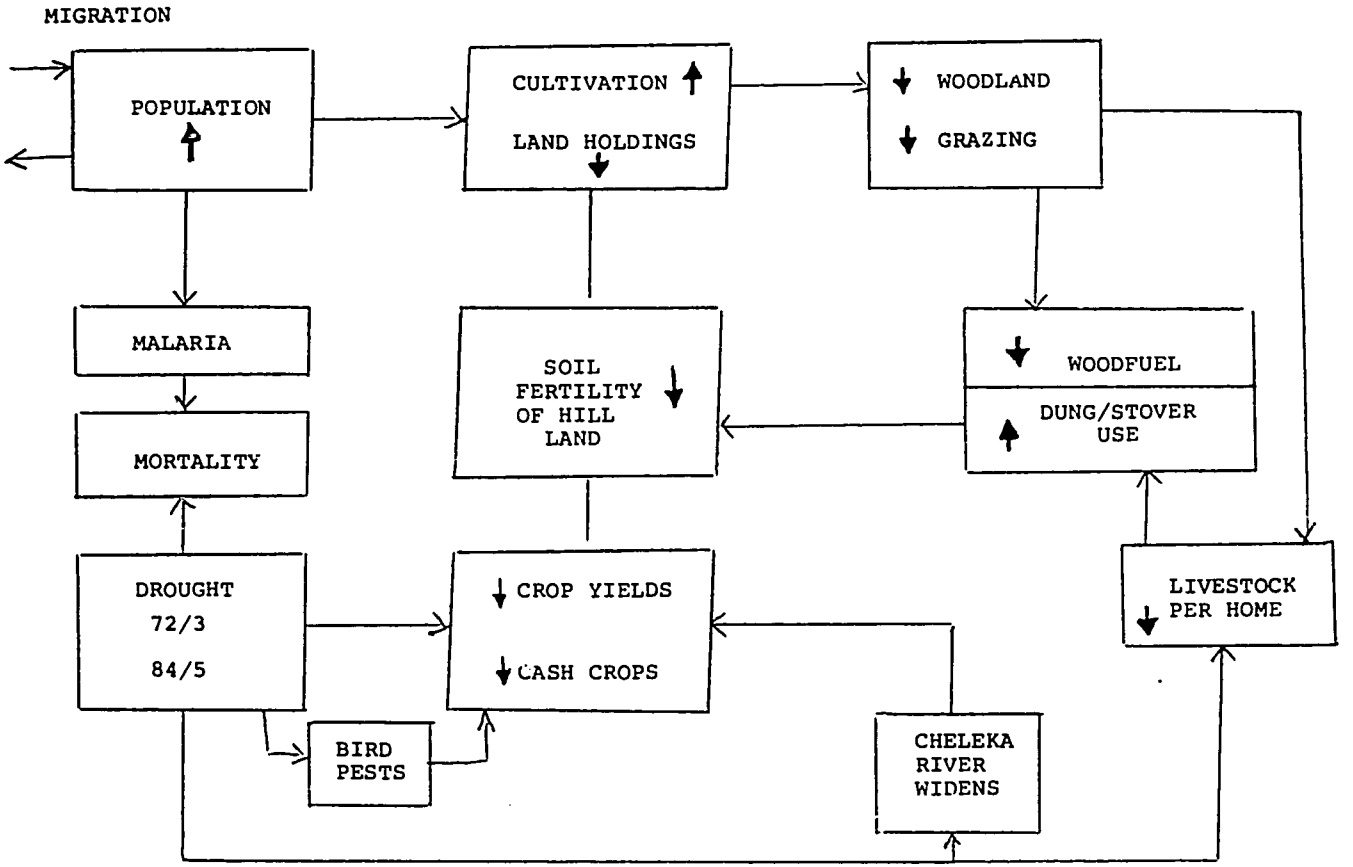


Figure 14. Historical changes and environmental problems (Graramba) - Old peoples' perceptic

After 1945: The population in the area rapidly increased and with this the cultivated land. Land was purchased from the land owners. Cotton was started as a cash crop, but farmers became discouraged as the cattle population increased and land pressure became more intense. Crop yields decreased through declining soil fertility and due to frequent droughts. The Cheleka river became wider and wider, but little could be done. Problems of water availability increased and continue to this day. The 1985 drought was catastrophic and killed many people and cattle. People are still trying to rehabilitate themselves with the help of the MoA and Red Cross.

The old people's perceptions of the historical changes to the resource base and the impacts on agricultural production and woodland is illustrated in an impact flow diagram (Figure 14).

The group of old women gave a very similar description of resource base and farming system changes. They particularly emphasised the severity of the 1984 drought and its impact on the community. They noted that only two other droughts had occurred with serious impacts since the Italian invasion, but none were as serious as this one. The collapse in the livestock populations has been disastrous, but they thought that the grazing was now sufficient due to fewer animals.

Summary

The environmental and agricultural profiles of Graramba, summarised in section 6.1, prompted a range of questions concerning natural resource management in the PA. These were pursued in a series of group discussions with different sections of the community (section 6.2). A range of attitudes concerning central problems and possible development options have been highlighted. These were brought together in a team brainstorming session listing a range of problems and opportunities. These are listed in section 6.3.

6.3 Problems and Opportunities

Problems

Water Resources

* Drought and climatic uncertainty restricts the potential for agricultural production.

* There is a severe shortage of drinking water for humans and animals as the village is situated about 5km from the nearest water source (see Figure 9).

Land use

* Both arable and grazing lands are situated a long way from the new village site. This results in much time being taken

up in walking between the village and fields or grazing areas.

* There is a general shortage of grazing land for individual farmers. This is because other grazing land is taken up by closures or is reserved for PC oxen.

Woodland management

* There is a shortage of wood for construction for individual use. This is due to the current regulations restricting products from the PA forests to communal usage.

* Fuelwood sources are scarce and at a great distance from the new village.

* There is resentment about the practices of distribution of communal tree products.

* The products of the hillside closure areas are currently only thatching grass and livestock of individual farmers receive no benefit.

* There is a low survival rate of planted seedlings for the species planted in the reafforestation programme.

Health

* There is a serious problem of disease in both livestock and humans (especially malaria).

Home gardens

* Home compound areas that have been allocated in the new village are too small for effective development of home gardens and tree planting.

Land degradation

* Gully erosion is increasing and is threatening farm land.

* The Cheleka river is expanding in width and is cutting away at the irrigable area.

Opportunities

Water resources

* Drilling ground well for drinking water and development of existing springs and ponds.

* Pump irrigation system near river.

Land degradation

* Catchment treatment to change water flows in Cheleka river; slowing of flow of inlet to the north of the irrigation scheme.

* River bank stabilisation

* Planting of elephant grass, euphorbia species in gulleys, building of check dams and control of livestock.

Health

* PHC programme intensification in the area.

* Education programmes.

Tree management

* Develop hillside closures through enrichment planting; develop management systems to alleviate grazing problems for individual farmers.

* Extension effort on utilisation of tree and grass products, local management and distribution systems to realise individual benefits from hillside closures.

* Fodder tree planting on soil bunds and contour lines in fields in home areas and in closures/community forestry sites.

* Tree planting for individual use for firewood, fruit, tools and construction materials in field, closure, community forestry and home sites.

* Choice of species, both indigenous and exotic, according to local needs; effective choice of plantation sites and management of planted areas

6.4 Best Bets

The PA profiles, the results of the focus group discussions and the 'Problems and Opportunities' listing served as the basis for the preliminary formulation of "Best Bets". These were then revised during follow-up work in the PA. The "Best Bets" are presented in this section in no particular order. The final community meeting's prioritisation is given at the end of this section. This was where representatives from each of the focus discussion groups attended to discuss the RRA's final outputs and recommend plans for future action.

Preliminary best bets

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1. Hillside closures

IF there is closing of selected hillsides (see Figure for possible sites), enrichment planting in areas with good soils, species selected that are good for fodder, soil conservation, fuelwood etc, management systems initiated and access to remote hillside areas improved

THEN the soil will rehabilitate, run-off will decrease and percolation and soil moisture increase, underground water flows will increase, wildlife will return and biomass production for local use will increase.

BECAUSE problems of soil degradation, shortages of wood and grass products, productivity is decreasing and water sources are reducing in the area.

Short term costs of reduced land availability for grazing are being felt by the community, but there are no concrete plans for the management of the area for long term benefits (see Figure).

ASSUMPTIONS

Planning an effective management system with the PA members (for new and existing closures, particularly ensuring benefits accrue to individual farmers). This includes the extension of the existing cut and carry system of thatching grass for closed areas to include benefits to livestock.

Seedlings for enrichment planting are provided, the transport problem is resolved and labour is made available through encouragement of FFW.

ACTION

Planning with the PA a system for implementation and management

Selection of plantation areas and seedlings

Labour mobilised

Road construction

Follow up management.

Follow up of best bet (Discussion with 3 farmers and final meeting)

The components of a closure management system were discussed with the small group. The following is a summary of possible options to fulfil different goals for portions of the closed areas:

Cut and carry system. This is feasible only close to the village as the distance to the existing closures is too great. There is a possibility of opening up a closure site near the village which would allow the practice of cut and carry for livestock forage.

Hay making. This was seen as a better option for this PA. Hay could be made on site at the distant closures and transported for distribution in the village. Sardo is recommended as the favoured grass species for fodder.

Controlled grazing. This used to be practiced in pre-revolution times when the hills were individually owned. Cattle owners would pay a fee for grazing and the animals would be shifted between different hills. This was thought not to be possible today as too many cattle are present and the organisation of such a system of controlled access would be impossible.

Roofing grass management. This is currently available in the hillside closure areas and is collected for the thatching of the new villages. Sambalet and Bila are the preferred species.

Herb and grass layer enrichment. A number of legumes were mentioned (ait harag and mateni) which are highly palatable and are readily eaten when wet. It was thought possible to seed certain areas with such species. However this should not be done anywhere and particular spots with good soils and terracing would have to be chosen within the closure areas.

Ranked grasses for cattle grazing.

1. Sardo - improves milk production; fattens; mattress stuffing
2. Netchesar - good grazing
3. Sokake - good grazing
4. Kondiale - grazing both wet and dry

5. Bila - roofing, but poor grazing

6. Sambalet - roofing, but only eaten when young.

These grass species are available in different places.

Closed hills

1. Sambalet
2. Sokake
3. Bila

Unclosed hills

1. Netchesar
2. Sardo

The peasants indicated that the current closure areas have been left to regenerate tall, rank grasses which are poor grazing (but good for thatching). The pioneer grasses that exist on the open hills are better grazing but are quickly finished when they emerge with the rains. If the closed areas are to be managed for the future benefits of livestock (especially cattle), then there appear to be a number of options. Each means a more intensive use of the protected area.

- Cut and carry of Sambalet when young (ie September). However this is also a labour peak and the distance required to carry the product is large.

- Controlled grazing to change the grass species composition within the closure to one which has a better forage value. This requires the discussion of a management system for use by PA cattle.

- Enrichment planting of grasses and legumes. This requires intensive management and some inputs.

Soil conservation. The peasants indicated that Acacia spp. are the best for soil conservation. Conservation is increased when the tree is small. At this stage it has no effect on grass growth in the immediate surrounds. Dense eucalypt plantations have no grass at all, but if planted with wide spacing grass can be encouraged. The best combination for soil conservation appears to be small bushes with widely spaced large trees in order to allow grass growth in the area.

Enrichment tree planting. Preferences expressed for tree planting within closure sites are:

1. Eucalyptus camaldulensis
2. Kurkura
3. Weiba
4. Wanza
5. Shola

As long as a good site is chosen for tree plantation then seedlings will survive. Some of the early eucalyptus plantation in the closed areas survived and have been used for the construction of the new village during the past year.

Community meeting discussion

Many of the points covered above were reiterated.

Existing closures. Both closures had good soils and were suitable places for tree planting. A satellite nursery could be constructed near Garo. In addition an access road is needed to the closure sites in order to get the benefits.

New closure site. The area known as Alalalo close to the village was proposed as a future closure area for intensive management for use by the village. The area had been closed previously in 1984, but the attempt had failed due to the drought and intrusions by pastoralist cattle.

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2. Tree planting in communal areas

IF fodder trees (eg sesbania, leucena, acacia spp) and other species (wanza, weiba, weira, kurkura, eucalyptus, akumbilo) are planted in a community plot on the degraded area of old terraced land on the hills behind the new village

THEN livestock feed, construction and firewood will be provided for the village nearby

BECAUSE of current shortages and soil degradation in the area.

ASSUMPTIONS

- The land is available and can be removed from grazing use
- Livestock interference can be prevented by complete closure
- Labour for planting and management can be mobilised
- Individuals within the PA can receive direct benefits from the outputs

ACTIONS

The planting project is planned with the PA and species and site are carefully chosen.

A management system is devised that allows the benefits to be distributed to individuals (including cut and carry system for grass offtake)

PA leaders are encouraged to assist in the management of the communal resource

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Follow-up on best bet

The experience of planting on the previous community forest site was recounted. The site was chosen in 1985 by government agents but planting has been unsuccessful on three occasions. All trees have died with the exception of Acacia saligna. This tree is however not liked by anyone. The problem is the choice of site. Infiltration is low and water runs off without penetrating. Even during the rains 50cm or so of soil is dry. The recommendation of the group was to change the site to somewhere where conditions are suitable for tree growing.

Sites suggested: Old village sites (Graramba and Gendela). These sites have good soils and people have experience of growing trees there.

Final meeting

The group suggested that it was best to concentrate on planting in the Alalalo site close to the village (see above).

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3. Tree planting in field areas

IF we plant fodder trees (eg Sesbania, leucena and Acacia species) and plant trees for other uses (see Ranking) (eg, kurkura, wanza weiba, shola, ulaga and akumbilo)

THEN it will alleviate the current shortage of livestock feed for individual farmers as well as shortages of construction materials and fuelwood. It will also assist to control soil loss and act to increase soil fertility.

BECAUSE there is a shortage of livestock feed, construction wood, firewood etc.

ASSUMPTIONS

Seed, seedlings, hand tools and other necessary inputs are made available

Labour does not act as a constraint to planting or management (but see Figure)

Livestock pressure can be controlled to allow establishment (but see Figure ?, which illustrates that livestock are present in fields almost throughout the year).

Birds populations do not increase as a result and begin to attack crops (but see Historical interviews for the reasons for the removal of trees in fields).

That the land taken by tree production results in a minimal decrease in arable area.

That effective management systems can be started.

ACTIONS

Further assessment of the problems
Choice of indigenous and exotic species
Proper site selection
Provision of seedlings
Devising a management system and providing extension support

Follow-up

The key problems identified for the best bet were discussed with a small group. They highlighted the following points:

- Small trees should be planted within the field or on bunds/terraces, so as to avoid competition and attraction of birds.

- Larger trees should be planted on the edge of fields. The preferences given provide confirmation of earlier rankings (see section). The ranking given was:

1. Kurkura
2. Grar
3. Wanza
4. Kalema
5. Shola
6. Bessana

- Pruning of trees will be necessary during the rainy season in order to reduce the incidence of bird attack.

- Protection of growing seedlings is possible by using simple constructions made from Acacia bushes.

Community meeting

The meeting confirmed that tree planting in arable land was possible as long as the above precautions were taken. Pigeon pea was suggested as a suitable species for soil bund planting. Fodder species were also thought to be advantageous. Although Sesbania had not been heard of people were willing to try.

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4. Home gardens and tree planting in the new village

IF we plant Sesbania, weiba and guava trees in the home garden areas

THEN the home and the surroundings will have shade and the tree products will be useful for cattle feeding and incense. Products will also be provided for house construction and farm tools. Guava trees will serve as an income source and will be a useful source of nutrition during the rainy season.

BECAUSE The trees suggested are those that were ranked highly by local farmers and can tackle the serious livestock feed problem faced by individual farmers. Also, these trees are not attacked by termites and so are more likely to survive (unlike the eucalyptus species).

ASSUMPTIONS

The trees should be planted during kremt or belg in order to ensure initial survival. Some subsequent watering will be necessary and so success will be reliant on the provision of a village water supply.

Some of the trees should be planted around the fences and guavas allocated a specific place, so as not to take up much of the very limited space.

The trees will have to be protected from livestock during initial growth

If water becomes more available in the village other species such as papaya and mango can be considered.

ACTIONS

Extension work is needed on tree propagation and management
Seed supplies for the required trees are needed

In order to increase the incentives for tree planting within the community each household should buy seedlings for small sums (eg 10c). Other monies to support this best bet will have to be found to complement this.

Follow-up

A range of species in addition to those suggested for the best bet (above) were recommended:

- Euclayptus camaldulensis
- Castor bean
- Kurkura
- Acacia spp.
- Acacia saligna (shade only)
- Euphorbia (although takes alot of water)
- Coffee
- Gesho (although religious prohibitions prevent this)

- Papaya

Not all these species are available in the local nursery. Before any action can be taken on home tree planting a wider range of seeds/seedlings is needed.

Community meeting

Eucalyptus was recommended as a tree with many uses; from construction to firewood to the protection of poultry from marauding eagles.

The protection of growing seedlings from goats was mentioned as a serious problem. Small home garden sites mean that separation of the two is difficult. Some thought that it should be possible; one man commented that: "a tree should be like our sorghum, so we should protect it as we do our crops." Another woman commented that "both goats and trees have different benefits so we must look after them both together".

The general conclusion was that if appropriate trees were available people would plant in their new homes.

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5. Gulley control in farm and grazing land

IF checkdams are constructed, protection from livestock (live fences) effected and erosion control planting carried out

THEN a 'dead' gulley will be created, erosion will be created and a cut and carry or gulley cropping system can be created.

BECAUSE soil degradation is occurring and gullies increasing resulting in loss of farm and grazing land.

ASSUMPTIONS

PA members are involved in the planning and implementation of the project; benefits can result (eg cut and carry or gulley cropping or fruit production system).

Materials are available (stones, gabions, wood, seedlings etc)

Labour can be mobilised without subsidy.

ACTION

Discussion with the PA; Provision of seedlings; Labour mobilisation; construction materials provided.

Follow-up

The gulley immediately adjacent to the village (Didjosole) was identified as in need of treatment. It is active at the top and is cutting into farmland adjacent to it.

The group of farmers indicated that they needed gabions supplied and then people could easily be mobilised to start reclamation work. When soil had collected behind the check dams the farmers suggested the planting of fruit trees such as guava and papaya. They also thought that tree planting inside the gulley to provide additional stabilisation was a possibility. Protective measurements against livestock intrusion was thought not to be necessary as the gulley was between the village and farmland and was not a site for much grazing.

Community meeting

Gullies on either side of the village were identified as priorities. These are Didjosole/Barigo to the west and Bedeno to the east. The increase in size of these gullies was a serious constraint to movement to Degan market, to the river and to individual and PC farmland. New paths had to pass right round the gulley area. In addition the gulleys were resulting in loss of farmland on both sides. Following reclamation the group thought that planting of fruit and fodder trees would result in benefits for the PA.

The meeting thought that with the supply of gabions work could start on reclamation. Some members of the group thought that FFW should be provided, most thought PA labour would be sufficient.

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6. Irrigation land

IF small scale irrigation (0.5 to 2 ha) from springs and large scale (>50 ha) irrigation from Cheleka river are developed through gravity/pond or pumping/pond systems

THEN positive results will include: more cultivable land, multiple crop production during the year, cash crop potential, agricultural by-products for livestock, distance from village to farm land will be reduced and food security increased.

And negative results will include: a decrease in the available grazing land for dry season grazing (if land near the river is developed) and an increase in malaria incidence through mosquito breeding in ponds.

BECAUSE there is a shortage of arable land, a lack of rainfall for rainfed agriculture and a shortage of food in the area.

ASSUMPTIONS

The impacts of the reduced grazing land on livestock of individual farmers are thoroughly investigated if the larger scale scheme is considered.

Labour and capital inputs are available for construction.

Follow-up: discussion with 3 farmers and community meeting

Spring irrigation The farmers identified a series of perennial springs that had potential for irrigation: Nechiro (3ha), Hambo (4ha) and Tirro (6ha). These are adjacent to existing individual farm land (see Figure ?) and so any irrigation development would not result in the reduction of grazing land. Gravity irrigation was thought to be infeasible as the springs are within gulley depressions, so a pumping system would be required.

Pond construction. Three possible places for pond development were mentioned: Berebekuro, Hutta, and Wenomassa. However the farmers noted that if ponds were liable to increase the incidence of malaria, then they should be rejected as an option.

Cheleka river irrigation. A 20 ha area adjacent to the existing irrigation that is currently used for PC oxen grazing was suggested as a possible area for irrigation expansion for the PC. The area has good soils and was previously used for cereal cultivation. The expansion of the irrigation area would be beneficial especially if different fruit crops could be grown. The expansion of irrigation would not have an effect on grazing as there was perceived to be excess (at least for the PC). This irrigation project would require the provision of a pump as the present one is at its full capacity.

Another option was suggested that involved the extension of existing land by a further 11 ha using gravity irrigation and river diversion.

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7. Malaria prevention

IF ponds are dug as part of irrigation development we should introduce fish species that eat mosquito larvae.

THEN malaria incidence will be reduced and fish products gained by the community.

BECAUSE Malaria is a serious health problem during the months of September, May and June. This conflicts with important agricultural activities (see Figure)

ASSUMPTION

Mosquito breeding can be controlled

ACTIONS

Combine with ongoing malaria control and prevention programmes by MoH.

Prepare ponds for fish production and provide suitable species.

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8. Well digging

IF we dig a well close to the village

THEN it will minimise waterborne diseases contracted from unprotected water resources (springs and the river); people will not have to travel so far to collect water and people and animals will get the benefits of trees, vegetables and fruits that can be grown as a result.

BECAUSE The existing water source (river) is not safe to drink from and is far from the village. Trees are not found in the new village in part because of lack of water.

ASSUMPTIONS

Ground water is available; funds will be available to carry out the digging and supply the pump.

ACTION

Introduction of a machine dug well (the water table is assumed to be too deep for hand digging as shown by previous hydrological surveys); installation of hand pumps and construction of VIP latrines.

Follow-up

People again emphasised the need to dig a well close to the village. This is universally accepted as the top priority. As someone said at the meeting: "Once the water problem is solved then we can begin to tackle other issues".

Prioritisation of the best bets at the PA meeting in Graramba

The final meeting, attended by representatives from each of the focus discussion groups, spent several house discussion the "Best Bet" options. As the previous sections illustrate a number of the preliminary best bets were altered. However there was a general consensus that the range of issues highlighted in the Best Bets represented opportunities for tackling important issues within the PA. Different groups disrupted the detailed mechanics of how to go about implementing the proposals. On certain issues opinion was unanimous and the group had no problem in prioritising the well digging option first. The gulley treatment was seen as an important immediate threat and one with a relatively easy solution if gabions were supplied. Tree planting was seen as more problematic in terms of labour and seedling availability, but was still given high priority. Hillside closure was not regarded as high priority as the sites were so far from the new village. Similarly spring development was discounted because of the distance.

1. Well digging and water provision for the new village

2. Gulley reclamation and planting close to new village

3. Tree planting around homes, in farm land, in new closure area (Garo and Alellalo).

Actions required for priority best bets (see Section 8)

1. Water engineer; drilling; protection etc
2. Gabions
3. Nursery seedlings

7. BEDEDO PEASANT ASSOCIATION

7.1 Profile of the PA

General Information on the PA

Bededo PA, 01 in Ambassel awraja, is only 20 minutes' drive from Dessie. The PA is divided into two climatic zones: the majority of the land (88%) is classified as medium highland (woyna dega), and the rest is highland (dega). The altitude ranges from 2300m to 2500m. The total area of the PA is about 800 hectares with the following breakdown in land use:

cultivated land	59%
forest land	31%
grazing land	10%

The major crops in the highland are wheat, maize, barley, beans and teff while those in the middle highland are sorghum, teff, wheat, barley, maize and pea.

There are 1139 households in the PA and the total population is 5246.

Two new villages have been built on the western side of the PA, and there are plans to eventually move one third of the PA members to these two villages.

Figure 15 shows the outline of the PA and the distribution of land on either side of the main Dessie to Hayk road, which bisects Bededo.

Location of Hillside Closures

There are four major areas of the PA which have been closed and protected from human and livestock interference. These have either been left to revegetate naturally or have been planted with a variety of tree species to enrich the existing cover. Figure 16 shows the location of these four areas and the dominant species in each. Figure 17 identifies the local names for the areas and the soil types present.

Cross-section through the PA

Figure 18 shows a transect through Bededo which includes the range of zones within the area, from the east to west sides. The central housing area is along the roadside which is where the main water source is - a fast flowing spring, from which water is piped to the PA's grain mill. It is in this area where the PA meeting-house and the service cooperative shop are located and where farmers tend to come together and meet. Behind this area is a high hill on which a church has been constructed. This is one of the closed areas. Behind this hill, on the west side of the

Figure 15. General map of Bededo PA

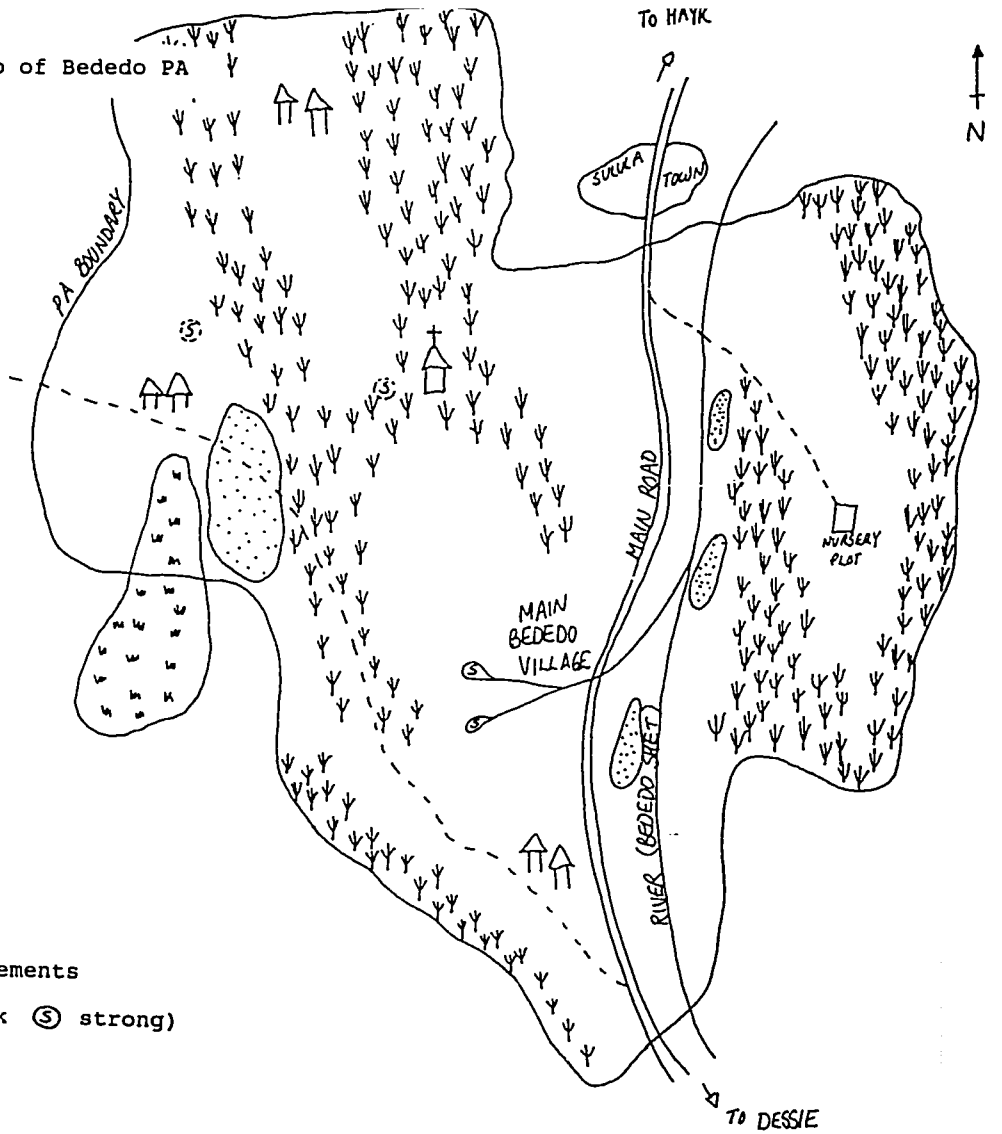


Figure 16. Hillside closures and species composition in Bededo PA

KEY: Dominant spp in Closures

1. Eucalyptus globulus only
2. Natural forest: Juniperus procera, Olea africana, Acacia abyssinica, Euphorbia sp
3. Enrichment plantation: Juniperus procera, Olea, Eucalyptus globulus
4. Enrichment: Cupressus sp
5. Mixed plantation: Acacia abyssinica, Eucalyptus globulus, Cupressus, Acacia sp
   (Eucalyptus globulus and Cupressus are equally distributed and the most dominant)
6. A trial area for comparisons of hillsides and semi-circular terraces. All of area as Cupressus

Figure 17. Hillside closures and soil types

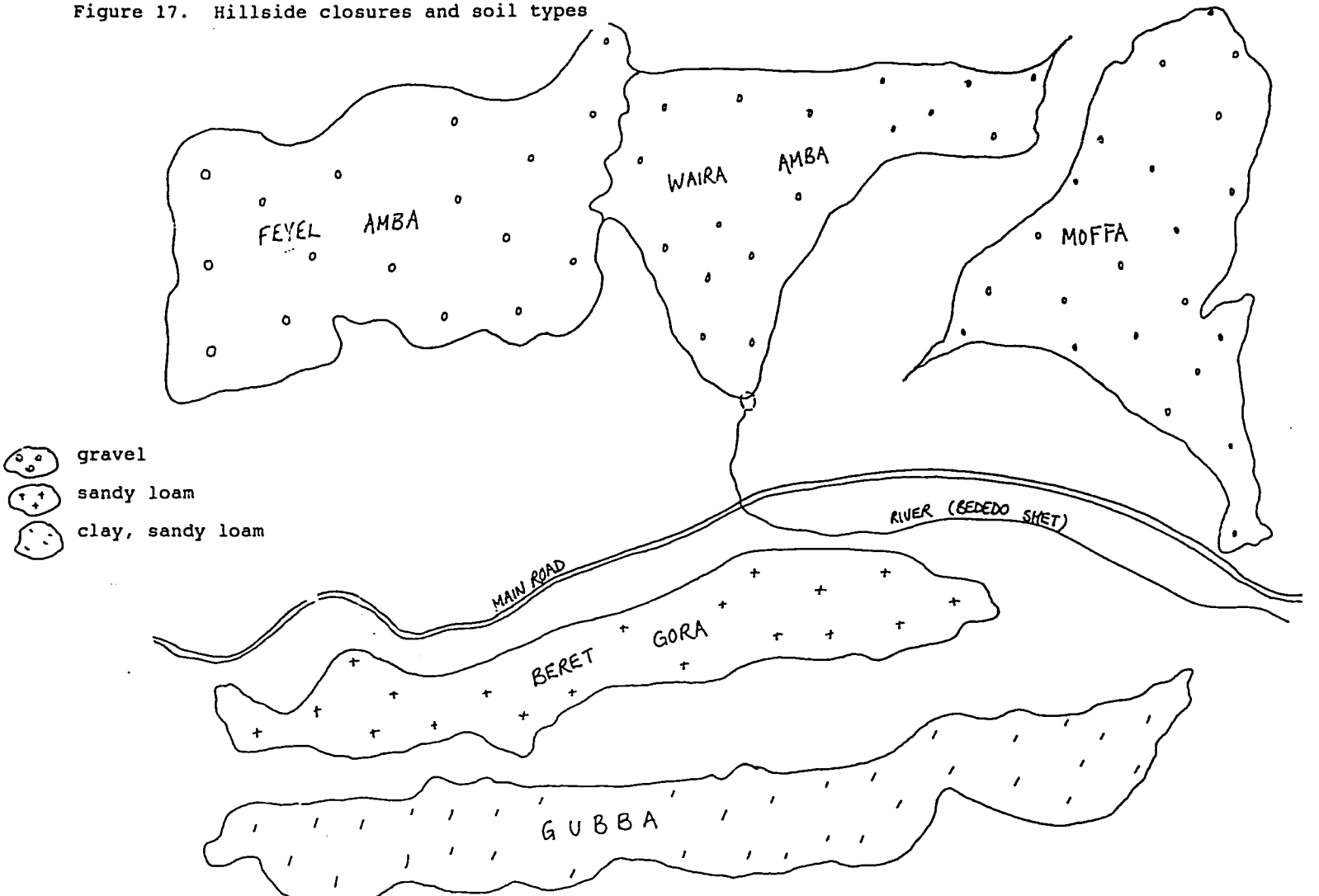
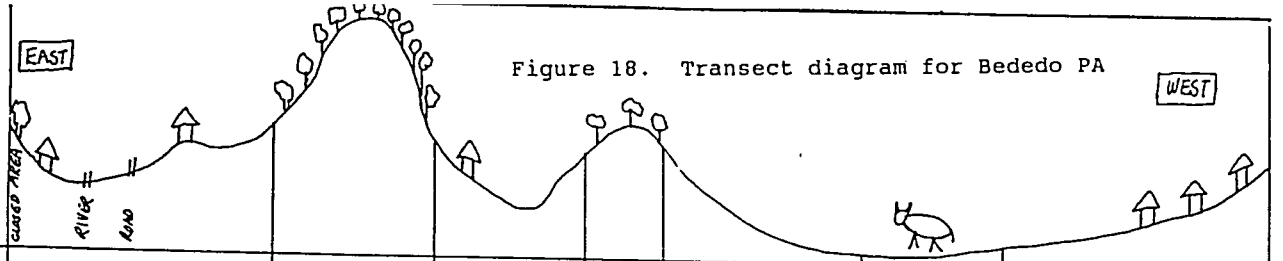


Figure 18. Transect diagram for Bededo PA



LAND USE	FARM AND GRAZING LAND	CLOSED HILLSIDES	FARM AND GRAZING LAND	FARM AND GRAZING LAND	FARM LAND	GRAZING LAND	FARM LAND AND VILLAGE
SOIL	LOMY CLAY	DEGRADED	STONY / ERODED	DEGRADED	STONY / ERODED	WATER INFLUENCED	STONY / ERODED LOAMY CLAY
SOIL TREATMENT	SOIL BUNDS GULLY CONTROL	ENRICHMENT PLANTING	SOIL BUNDS GULLY CONTROL	—	SOIL BUNDS GULLY CONTROL	—	SOIL BUNDS GULLY CONTROL
WATER	2 SPRINGS (1 DEVELOPED)	—	1 SPRING	—	—	—	2 SPRINGS (WEAK)
VEGETATION / CROPS	MAIZE, SORGHUM, TEFF, WHEAT, BARLEY, EMMER WHEAT, BEANS, PEAS, LENTILS, RAPE SEED	JUNIPERUS, EUCALYPTUS, OLEA, ACACIA, EUPHORBIA, ERITHRINA	FIELD CROPS	JUNIPERUS OLEA	FIELD CROPS		FIELD CROPS
LIVESTOCK	COWS, GOATS, SHEEP, DONKEYS, MULES, HORSES	—	COWS, GOATS, SHEEP,			DONKEYS, MULES, HORSES	
PROBLEMS	- IRRIGATION SYSTEM ABANDONED - HEALTH POST INCOMPLETE	- PROBLEMS CONCERNING CLOSURES				- SWAMPY LAND	- WATER SHORTAGE - SHORTAGE OF SPACE IN HOME GARDEN - NO HEALTH POST

PA is an area of waterlogged land which becomes a shallow lake when there has been sufficient rain. Nearby this area is a large plot of grazing land and one of the two new villages. The other new village is somewhat further north on the west side. The western side of the PA is not well endowed with water sources and the households here have to share the use of two small and weak springs or walk several hours towards the centre of the PA to a better spring.

Brief history of the PA

Figure 19 shows some general trends in the PA over the last 50 years, namely the decline in the condition of the forest and the fertility of the soil alongside an increase in the population in the PA. This degradation of the forests gives the rationale for closing the slopes and protecting them from human or livestock interference. The rising human population has contributed to the major problems of land, water and fuelwood scarcity in the PA.

Parallel to this has been a decrease in the numbers of livestock owned by the farmers in Bededo (Table 7). The main reasons cited for this are (1) the scarcity of grazing land as a result of the closure of the hillsides and (2) the declining incomes from the reduction in trading opportunities, as well as the obvious impacts of the last drought . Traditionally the farmers of Bededo have also been involved with trading in the nearby towns of Hayk and Dessie and even at the coast, several days' walk away. At present they say the possibilities for trading outside the PA are limited because of the restrictions of access to other parts of the Region and beyond, as they must obtain travel permits before embarking on their journey. So both the potential amount of income and the number of alternative income-generating activities available to the farmers have declined (Figure 20). Mules which were kept in large numbers for transporting goods to market have now declined in number with this reduction in marketing. The grazing land shortage following the closure of the slopes has led to a large reduction in the number of goats owned. These have been partly substituted by sheep which require less grazing land but which are also less profitable.

Seasonal trends in the PA

Crop and livestock production

The crop rotation used by most of the farmers in the medium highland area of the PA is shown in Figure 21, though this will obviously be dependent on the amount and timing of the rains. The pattern is slightly different for the higher areas. Here barley and maize replace sorghum and teff as the dominant crops. The common pests and diseases affecting the crops are shown in Figure 22. Seasonal feeding patterns for livestock are shown in Figure 23.

Figure 19. Time trends in Bededo PA

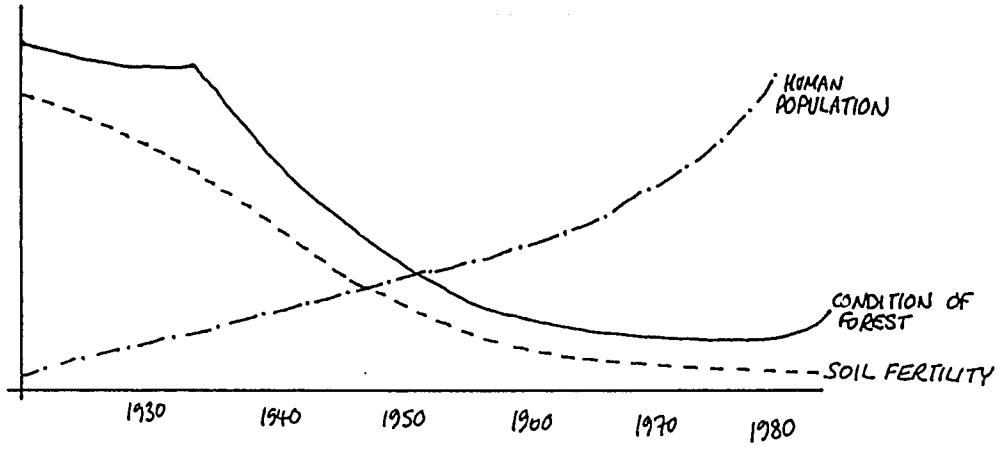
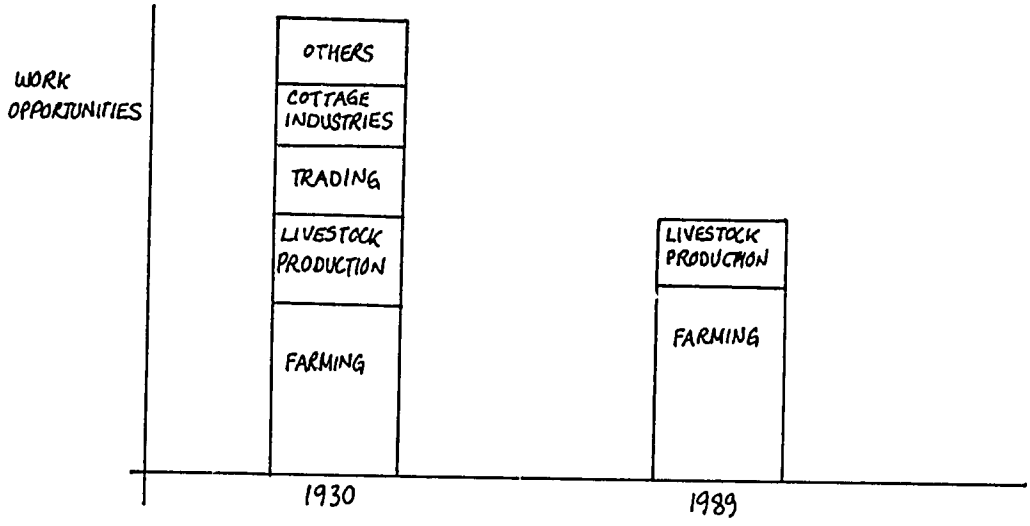


Figure 20. Historical changes in income earning opportunitie in Bededo



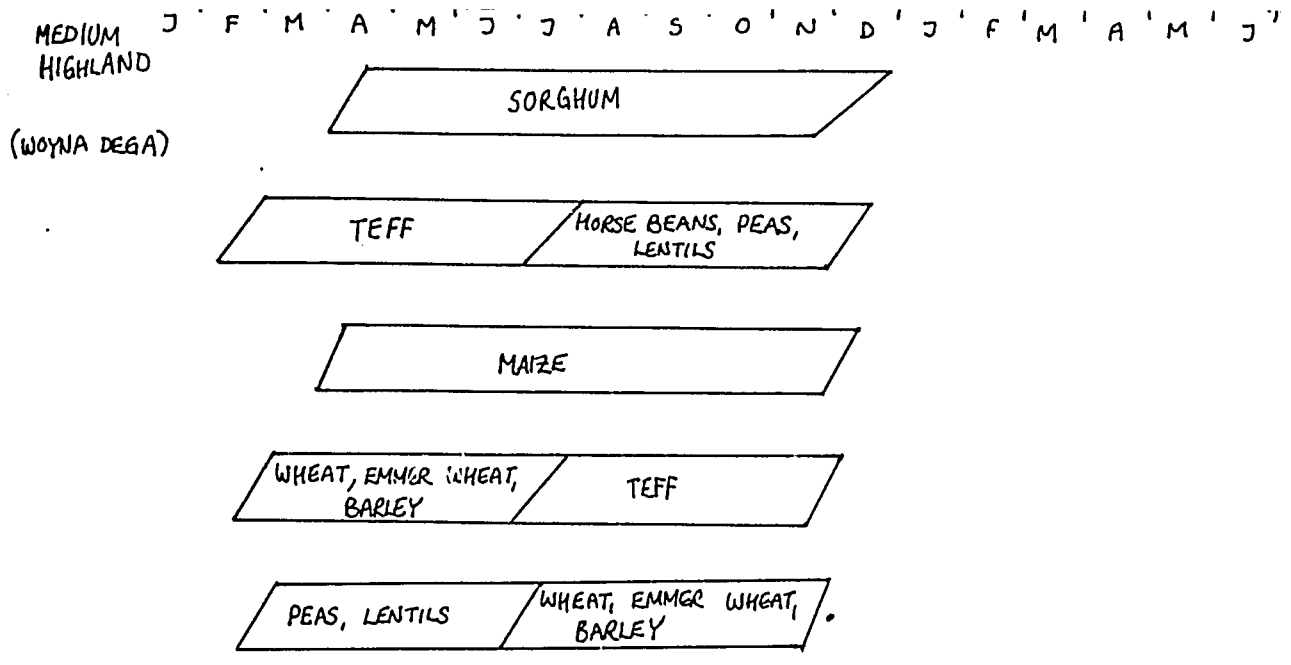


Figure 21. Cropping patterns in different attitude zones

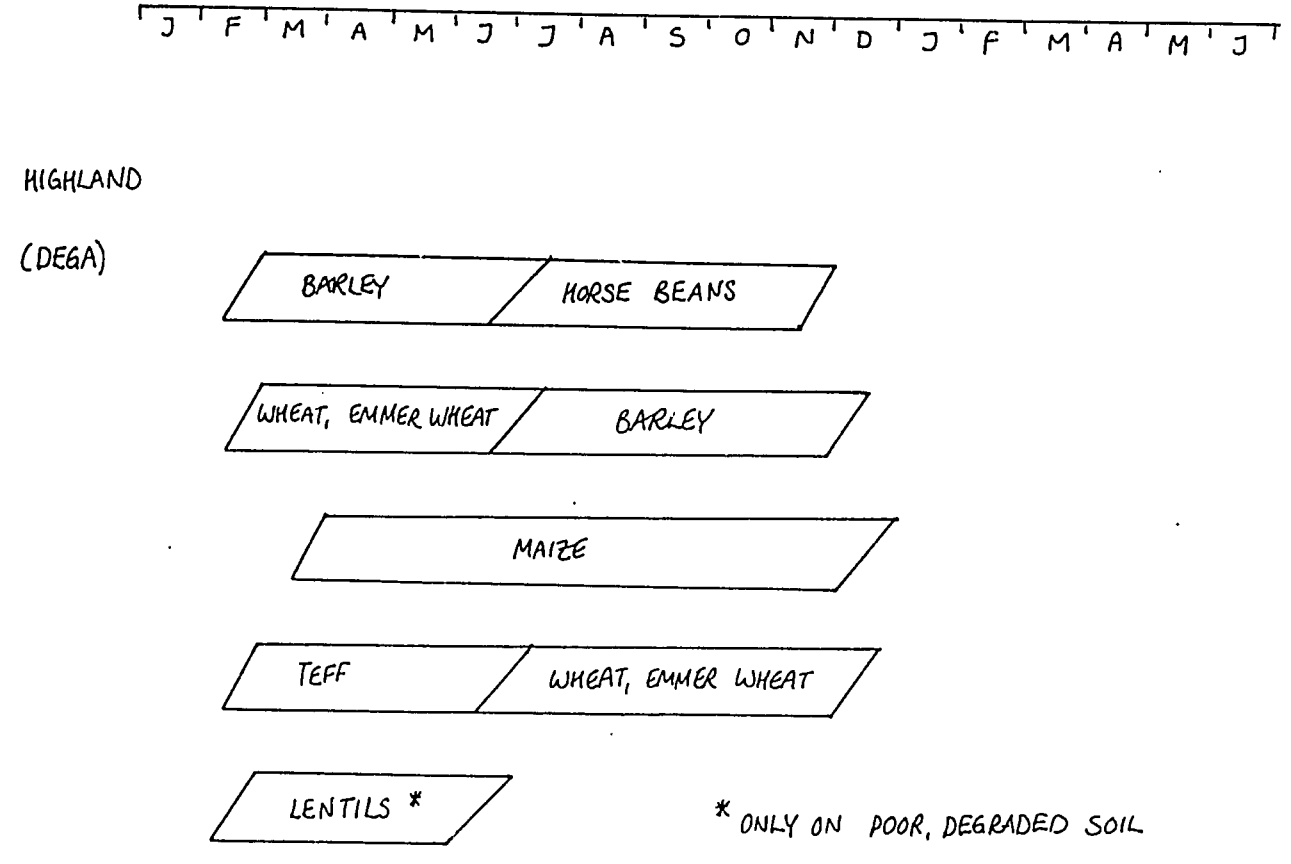


Figure 22. Crop pest and disease incidence

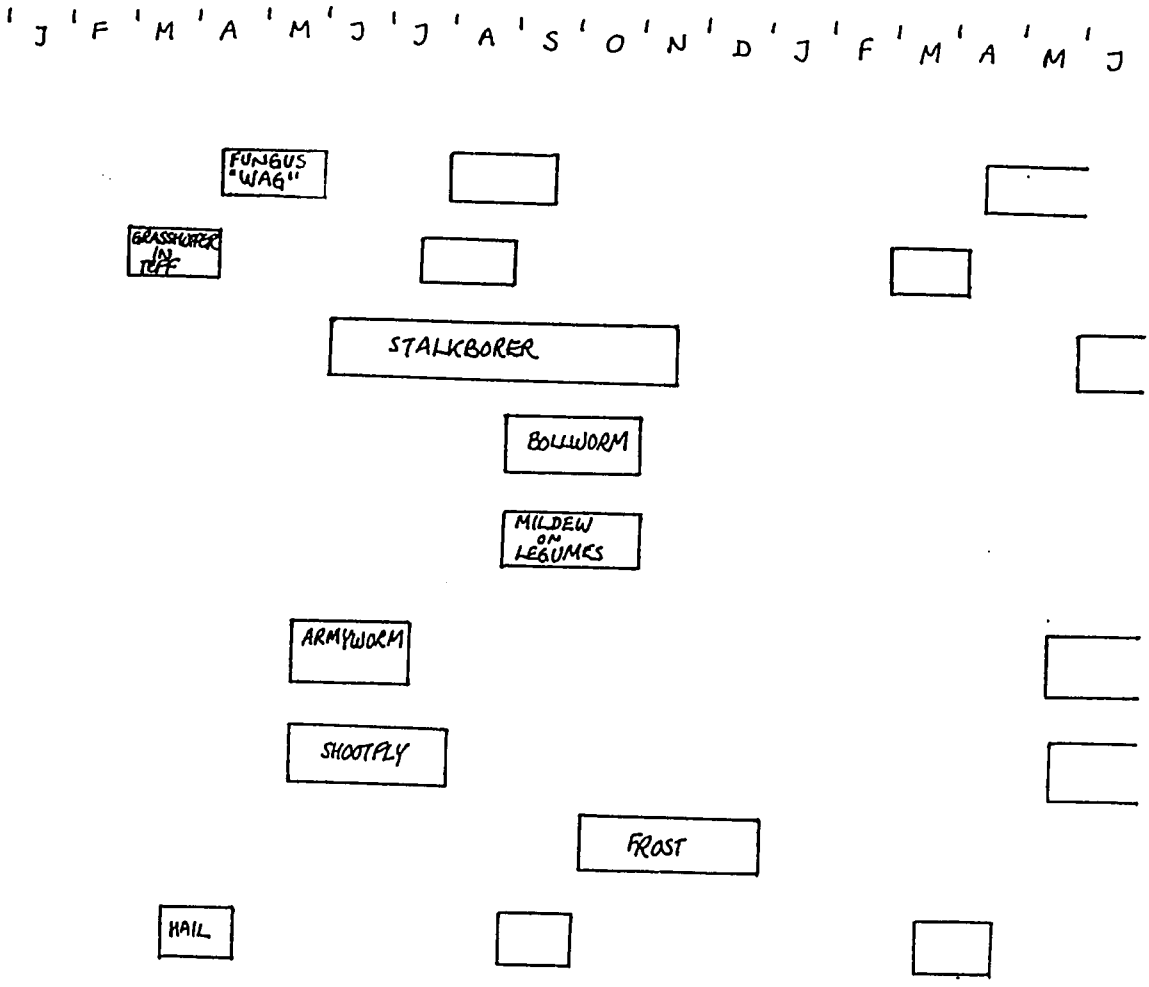


Figure 23. Livestock feeding calendar

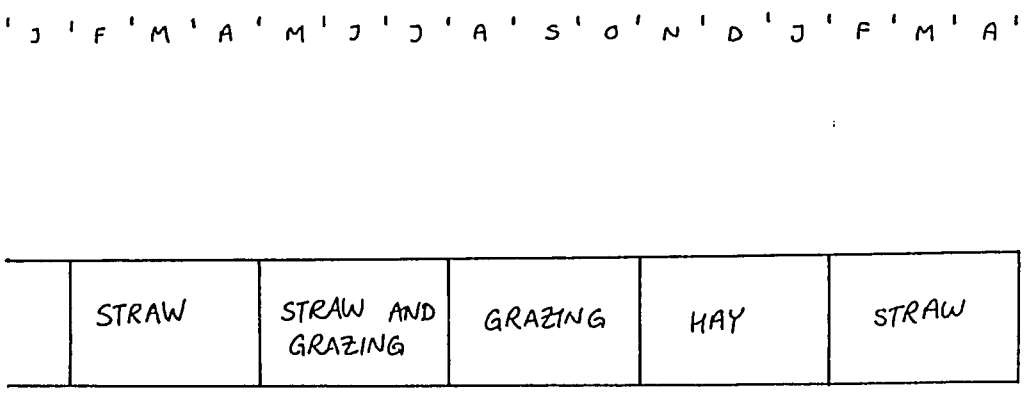


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Table 7 Mean livestock holdings per household (averages taken from a sample of six household heads)

Kind of Livestock	15 years ago	1984/85	Present
Cattle	4	-	1
Sheep	6	-	2
Mule	1	-	-
Donkey	-	-	1
Hen	4	-	4
Goats	?	-	-

Labour

The agricultural labour pattern throughout the year is basically the same in all areas of the PA and is shown in figure 24. As with the cropping calendar this will vary according to the timing of the rains. The labour is split between members of the family with the men being responsible for sowing and harvesting and the women for weeding, collecting the harvested crop, and carrying it to the home. The whole family is employed in bird-scaring. To provide a fuller picture of the labour pattern for women in the PA, figure 25 shows the main activities of one female member of the Producers Cooperative who is also engaged in pottery. Her busiest times of the year are during the weeding of both seasons' crops and when she is not working on the farm land she concentrates on pottery and takes part in the food-for-work activities, in which the women are generally more active than the men.

Seasonality in the closures

Figure 26 outlines some of the seasonal trends in the closed areas and shows the optimum time for a cut and carry system to operate as being just after the main rains, although no such scheme exists at present. As can be seen from the labour calendars, the period when the grass is in best condition for cutting and using as fodder (ie when it has maximum nutritive value) coincides with a peak time for labour when the main (kiremt season) crop is being harvested.

Figure 24. General agricultural labour pattern, Bededo PA

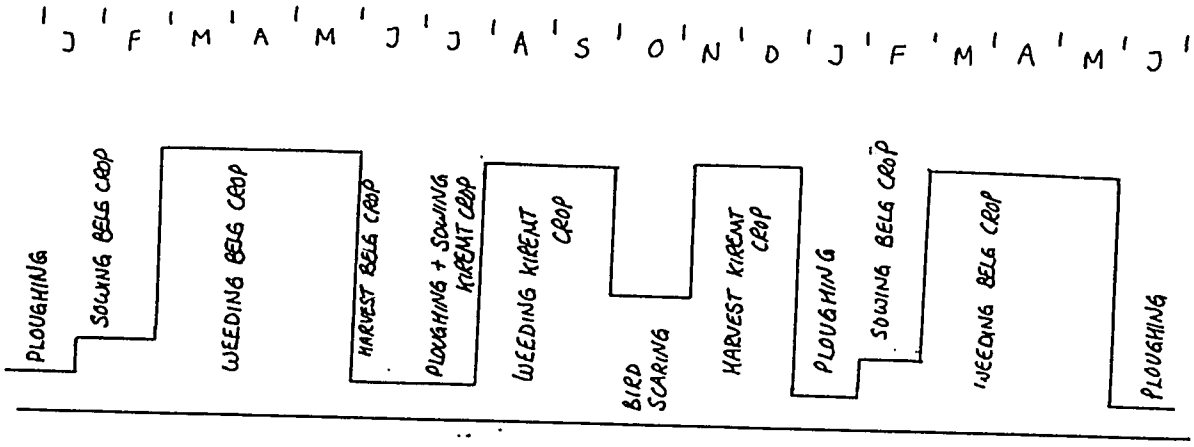
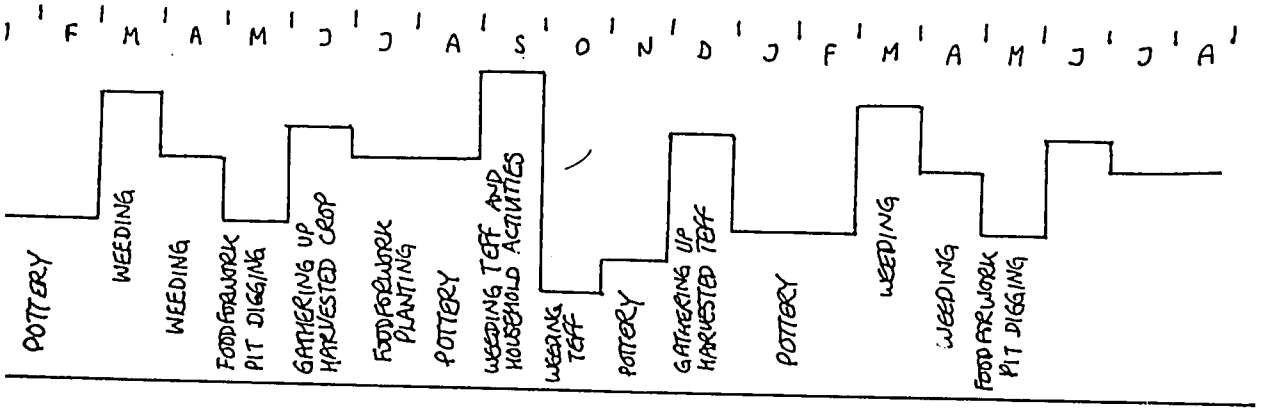


Figure 25. Labour pattern for a female PC member



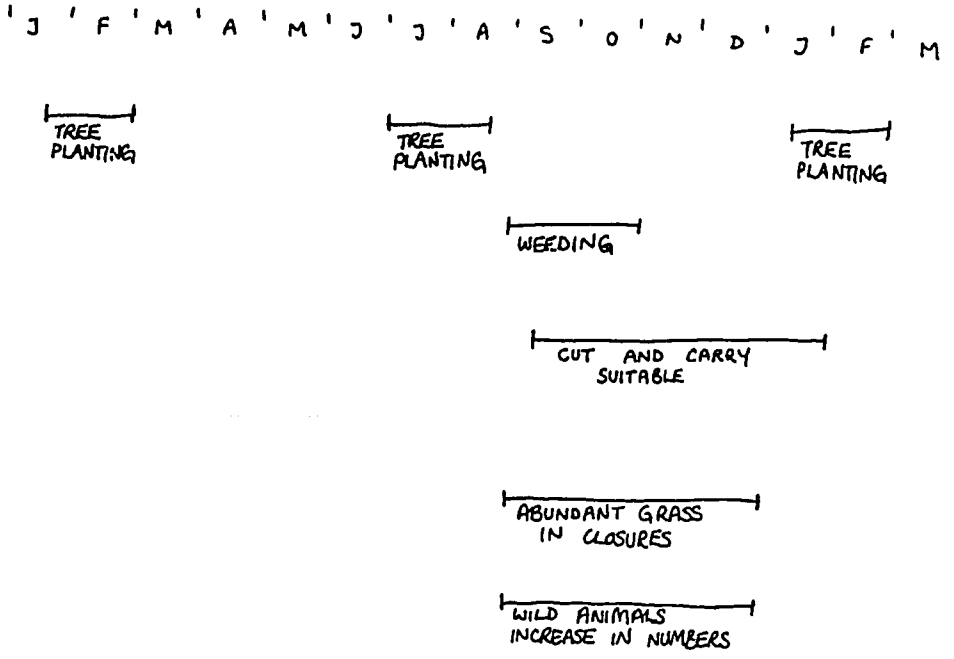


Figure 26. Seasonal patterns in the hillside closures

7.2 Attitudes of Different Groups in Bededo

1. Attitudes to hillside closures

PA leaders

We interviewed a group of 15 representatives from various committees of the PA and focussed our discussions on the topic of the closures. The following are some of their quotes on different aspects of the closures:

The PA leaders seemed well aware of the long term benefits from the closures, as well as the costs:

> "The closed areas will supply us with fuelwood, construction wood, grass for our animals from cut-and-carry and they will also stop erosion of the land. However they also result in a shortage of grazing and farm land and hinder livestock rearing."

When asked why there is no cut-and-carry system at present they replied:

> "We can not use cut-and-carry because the trees and bushes cast shade and hinder grass growth. These unwanted bushes should be cleared to allow better grass production and the trees should be pruned to improve the light condition for the grass."

Some of the leaders argued for a controlled and seasonal grazing system to be set up in the closed areas but this idea met with considerable opposition from other members of the group and was finally rejected in favour of a cut-and-carry system which they felt would be less destructive for the young trees.

The leaders were agreed on which species they preferred for the closed areas - Eucalyptus globulus was by far the most popular. One of their suggestions was that any areas of the closures which are still bare could be planted with this species.

Site Guards

We interviewed six out of the ten farmers in the PA who are employed through food-for-work as guards for the closed areas. Their experience with the job of guarding ranged from four to seven years.

Like the PA leaders, the guards were well aware of the reasons for the areas being closed and clearly saw their responsibility to protect these areas from further degradation. They were able to recall the degraded condition of the slopes prior to their being closed. However they also voiced their concern over the tensions in the PA which are making their job a very difficult one:

> "Farmers come to cut the trees at night. We can hear them and see the remains of the trees in the morning. If we catch them and report them they will be our enemies and they will threaten us and want to kill us. Sometimes we have to report our neighbours and friends."

This fear was also expressed by another site guard who we talked with on a separate occasion. He said that the situation had become so bad that he was afraid for his life and could no longer go next door to drink coffee with his neighbours, as he was becoming more and more isolated within the community. Indeed the only reason why he was carrying on working as a guard was because of the relatively good payment he receives through food-for-work.

The payment for the guards is currently set at 90 kg of grain and 4 l of oil per month.

The guards were also concerned with how effective they could be in protecting the closures. With about 90 hectares to cover each, they felt it was easy for farmers to cheat the system in the more remote areas of the closures. In addition they feel that it is difficult to get an adequate response from the PA leaders once they have reported farmers cutting trees or grazing their animals in the closures. The report by a guard is not sufficient to convict a farmer - there must also be witnesses of the incident. Or when livestock of a farmer sometimes "escape" into the closures the PA leaders do not punish him, they simply send him a memo telling him to look after his animals more carefully. Apparently when punishment is made the current fines are 5 to 30 Birr ($2.5 to $15) for grazing, with repeated convictions increasing the punishment up to three months in prison. Tree cutting in the closures can also lead to three months in prison. The most serious offence is to start a fire in the closures in which case if the PA court does not take action, a report can be made to the Woreda court for a final decision.

The guards consider themselves to be quite lenient to the other farmers, as one of them put it:

> "We must not be cruel. Some people just come in to collect dry branches and grass. I am thinking about the farmers."

The guards seemed to consider that the grass in the closure was being used by the farmers presently. However they suggested, in agreement with the PA leaders, that a more controlled system be set up, where the guards could supervise a localised and seasonal cut-and-carry system by an organised group of farmers.

They also suggested that unwanted bushes be removed to avoid the shading effect limiting grass production.

The guards told us of the wild animals living in the closures, such as leopard, antelope, and monkey. The tree Olea africana seems to be particularly vulnerable, as it is eaten by Klippsringer and duiker. Hunting of these animals is forbidden.

On the subject of their preferred species of trees, the guards agreed with the general feeling in the PA that Eucalyptus globulus was the best because of its rapid growth and multiple uses. Below is a summary of a ranking exercise which we conducted to try and find more details about which species were preferred for the closures and why:

Table 8 Ranking of hillside closure tree species by site guards

Species	Positive characteritics	Negative characteristics
Eucalyptus globulus	Quick growth (3-5 years) Multipurpose	Absorbs much water No soil conservation
Juniperus procera	Hardwood Multipurpose Thermite proof Adds to soil fertility	Slow growth No coppicing
Olea africana	Good for farm tools Fodder production	Stunted growth Eaten by animals
Cupressus lusitanica	Productive in good soil Multipurpose for building material Could be used for intercropping	
Acacia abyssinica	Nitrogen fixation Good for farm tools, saddles	Thorny Animals do not like to browse it
Acacia decurrens	Rather fast growing	

Old men

We had a group meeting with three old farmers and asked them about the same issue of the closures. We felt that their answers were open and frank, probably largely because they were already familiar with one member of our team and so felt more comfortable to talk with us.

The old men talked a lot about the situation in the area when they were young, when the land was covered in dense forest, the soil had good potential, the crops were very good, they had plenty of cattle, and could use firewood and dung freely. They compared their own situation then with that of the present when the hills are now closed, their cattle, goat and sheep herds have had to be reduced and so their means of income have also been cut. However, as with the previous two groups, they also saw the reasoning behind closing the slopes, as one of the group said:

> "We do not deny that closing the land controls erosion. But we have to get opportunities to use the area, for example taking the dried branches and bark for fuelwood, or being allowed to graze our animals on the gentler slopes within the closures."

They also said that the problems with land scarcity because of the closing of the slopes had been exacerbated by the increasing population pressure. Previously the human population in the PA had been relatively small in comparison with the amount of land available, whereas the population had now increased to compound these problems.

Other People

All the people we interviewed on the subject of the closures said that they had not yet received any benefits from the areas and no one had any knowledge of an organised cut-and-carry system operating. Some people said that grass was being cut but only when it was dry, for roofing purposes. One women commented that she was not allowed to enter the closed areas to get anything at all from the forest - not even a stick for a tooth brush!

One old man, after spending some time answering our questions about livestock, asked us:

> "You have been asking me so many questions. Now please listen to me. While the other farmers were planting crops I was planting Eucalyptus and caring for the trees. I was paying taxes for my land and getting income from my trees. But last year the MoA took away my land to close it and although I complained to the MoA there was no solution and it was still taken away. Now I have no land and no trees."

Table 9 summarises some of the different issues and options which the different groups emphasised for the hillside closures.

Table 9

Group	Issues raised	Plans for Management
PA Leaders	- Shortage of land - Definite benefits of closures	- Thinning of bush and pruning to increase grass production - Cut and Carry - Controlled grazing? - No new closures - PA Level control
Site Guards	- Fear for lives - Lenient on poaching - Do job because of food-for work	- More guards - More PA support - Supervised cut and carry
Old Men	- Rights of use not clear - Do not regard trees as belonging to them	- Increase use-grazing access, wood and bark collection - Split closures to 'belong' to different villages - Local management and control
Women	- Cannot get access for fuelwood, clay etc. - Extra labour in collection - Wildlife pests	- Alternative home planting useless as trees will be taken - Open the areas for use

2. Attitudes to Communal Tree Planting

We talked with a group of about fifteen old men on the issue of communal tree planting. This discussion revealed a great deal of confusion over what constitutes a communal forest. The theoretical distinctions between state, communal and private tree planting appear to be well known but the actual situation in the PA is still unclear.

One of the old men described what he understood by the three different types of tree planting:

> "State forest development is done by the government in which we participate on a food-for-work basis and sometimes without claiming payment.

We have two communal forest sites in our PA - Aragaw and Mohamed. Both of these have been reclaimed from private landholders. The PA members have no control over these sites, it is only the leaders who control them. If we are in great need of forest products we apply to the PA leaders and they provide us with some, but very rarely.

Private forest development is not encouraged by the government since we are not given land for planting trees. While we do have a few trees around our homes they can not be considered as private forests."

At other times during the discussion, some of the men said that they did not know of any communal forests in the PA, although they had heard of such forests. There was evidently some confusion over this. The reasons given for the lack of, or only small amount of communal forests in the PA centred around the issue of land shortage. The main suggestion for encouraging communal forest planting was to first solve this land scarcity by opening up areas of the closures for such purposes.

We talked with other people about the use of trees from communal forests and obtained several different replies. The general feeling is that the trees are to be used by only the very poor, for communal use and for some kind of compensation.

3. Attitudes to Private Land Tree Planting

We visited several individuals in their homes to ask them about tree planting on their private lands. These people included cooperative members, private farmers, and several women. This is a summary of their discussions:

What encourages tree planting on private land?

* Ability to get fuelwood
* Ability to get material for fencing and construction
* Ability to get a source of income from the trees
* Freedom in the use of the land
* Freedom in the use of the tree products

What discourages tree planting on private land?

* Small landholding
* Shortage of water
* Unfavourable soil conditions
* Unfavourable weather conditions
* Memory of lost ownership of trees
* Lack of knowledge about the rules and regulations on the use of the trees planted
* Lack of communication between farmers and extension agents

What are the positive effects of private tree planting?

* Getting own fuelwood
* Getting own materials for fencing and construction
* Helping soil conservation
* Getting fodder
* Fertilising and enriching the soil if the proper species are chosen
* Creating shelter for livestock and humans

What are the negative effects of private tree planting?

* They attract rodents, birds and other wild animals such as gazelles and snakes
* They compete with other crops
* They create shadows which prevent crops from growing

All of the people whom we interviewed on the subject said that they preferred to plant Eucalyptus on their private land because (1) it is fast growing, (2) it has many uses, (3) it can regrow after it has been cut, and (4) it is the only species of tree which it is permitted to cut and use.

In fact, as far as we could discover, a farmer must obtain permission before cutting and using Eucalyptus on their private land. Any other species of trees are not allowed to be cut even when they have matured.

One farmer, when we asked him which species of tree he preferred to plant, refused to answer remarking that the question was useless, because neither the land nor the trees belong to him. "They belong to you," he said "so you should know better".

We enquired about the opportunities to plant fruit trees on private lands. The general feeling was that this is not promising and that only chat, gesho and coffee were worth growing . The reasons given for not growing more fruit trees were: (1) there is not enough water, (2) the land is very limited and so priority must be given firstly to crops and secondly to trees for fuel wood, and (3) the soil is not favourable.

4. Attitudes to Livestock

We talked with a group of Producers Cooperative members and several individual farmers on the livestock situation in the PA and on their preferences for different types of livestock.

The results of their rankings are shown below (Tables 10 and 11). While the preferences of the individual and cooperative farmers are quite different the criteria they use to compare the animals are very similar. Both put the grazing land requirements as an important factor in choosing which species they preferred. Both also valued bees because of the relative ease of production and the high income but did not rank them highly because of the lack of a bee colony in the area.

Table 10 Ranking of livestock by individual farmers

Type of Livestock	Positive Characteristics	Negative Characteristics
Cattle	Used for draught purposes Means of income Used for home consumption Generally used for multipurposes	Shortage of grazing land
Equines	Used for transport Used for threshing	Shortage of grazing land
Bees	Generates a good income Never requires feeding or care	Scarcity of bee colony in the area
Sheep	Source of income Used for consumption Grow fast Easy to feed and rear	Shortage of grazing land
Hens	Need small area for breeding A good source of income	Provides little income compared to other types
Goats		Land which individual farmers own is not suitable for breeding

Table 11 Ranking of livestock by Producer Cooperative members

Type of Livestock	Positive Characteristics	Negative Characteristics
Cattle	Used for draught animals Generate income Used as food Used for threshing purposes	Need too much grazing area
Goats	Reproduce fast Grow fast Produce more than two offspring at a time	Consume much foliage destructing plants Need wide area Cannot breed in highland
Sheep	Reproduce fast Good means of income	Susceptible to diseases Grazing land shortage
Equines	Used for transport Used for threshing	Shortage of grazing land
Hens	Need less area for breeding Generate fast income	Susceptible to disease Vulnerable to rodents
Bees	Need less labour for rearing and production Generate a good income	Bees are not available in the area

When we asked a group of farmers about the possibility of introducing improved breeds of cattle, they laughed and said:

"How will we feed them? We have not enough land to feed our own animals. These foreign cattle need so much food. Do you want them to eat even us?"

Another farmer, when asked how many cattle he owned, said:

"If you do not have enough grazing land, having cattle is like having a wife from a bad family. Do not ask me such a question".

7.3 Problems and Opportunities

These lists of problems and opportunities were developed during the first half of the RRA work, and they represent both direct ideas voiced by the PA members (some of which are attributed to specific groups) and ideas from members of the RRA team.

Problems

Water Shortage

* There is a severe shortage of water in the western part of the PA which has become much more of a problem since villagisation of the area

* Most of the springs in the western part of the PA dry out seasonally

* The time taken by women to collect water allows them little or no time to care for their children or attend the health clinic

Land Shortage

* There is a severe shortage of farmland in the PA

* There is also a severe shortage of grazing land

* There is a shortage of space in the new village compounds for the livestock, kitchens, latrines and trees

Livestock Problems

* There is a shortage of fodder, partly as a result from the shortage of farmland and partly because of the closure of large areas of the slopes where fodder used to be available for use

* Animal diseases such as leaches and black legs

Hillside Closure and Soil Conservation Problems

* There is considerable misunderstanding concerning the closures, on the part of the peasants

* There is also misunderstanding among the site guards - sometimes they do not permit what should in fact be permitted

* There is resentment towards the site guards by the other members of the PA

* The shade effect of the trees in the closures means the production of grass in these areas is relatively low

* Wildlife living inn the closures intrude on to farmland and destroy crops and trees

* There is no cut-and-carry system operating for fodder- only for roofing?

* The cutting rights within the closures are not clear

* Farmers want to be paid food-for-work for cutting grass in the closures

* There are problems with gullies and broken terraces

* The peasants are not informed about the planned soil conservation or forestry activities

Health

* The health clinic is far away from the PA

* The health post in the PA has not been completed due to inappropriate siting and shortage of money

* There has been a lack of support for the Community Health Agent and Traditional Birth Attendant and therefore their work has sometimes been neglected

* Two Community Health Workers have defaulted

Coordination Problems

* There has been interference among the different department of MoA - for example villagisation programmes have been set up in areas which would be more suitable for closure and cut-and-carry

* There has been a lack of coordination between the MoA and MOH

Other Problems

* There is a shortage of fuelwood in the PA

* People are coming from outside Bededo to work in the nursery there and get paid food-for-work (but the nursery serves other PAs too)

* Fertiliser needs to be paid for (this is state policy) and its distribution has been poor

* There is a lack of knowledge in the PA of UMCC-DPP

* There has been a general lack of community involvement in planning decisions in the PA

Opportunities

Water

* Developing springs in the western part of the PA

* Developing other available water resources - pond, well etc.

* Proper use of available water - irrigation, electricity generation

* Transport of water by donkeys to western part of the PA - including repair of the road and supply of water containers

Improved Crop and Livestock Production

* Intercropping on farmland including forage crops

* Application of fertiliser, pesticide and improved storage

* Improved seeds, crop rotation including oil crops and other cash crops

* Intensify home gardens

Hillside Closures/Tree Growing

* Proper hillside management including possibilities for benefits to the farmers - grasses, fodder trees, fruit trees with continuous maintenance of the closures - plan to be developed with the community

* (Proposed by some old farmers) Open up less steep slopes in closures for rotational cropping and grazing

* (Proposed by some PA leaders) Seasonal grazing in the closures (other leaders disagreed and the final consensus was against this idea)

* (Proposed by some other farmers) Controlled grazing after trees mature and before closed canopy develops

* (Proposed by some old farmers) Split up the closures between individuals - i.e. convert into private land

* (Proposed by some other farmers) Split up the closures between groups of farmers and get rid of the guards

* (Proposed by the site guards) Supervised cut-and-carry in certain areas of the closures

* Remove unwanted bushes from the closures to avoid shade effect, where erosion risk is low

* Planting trees at wider intervals to allow grass growth

* Clarify the cut-and-carry system - who is eligible to do it

* Intensive extension work and information about rights to trees

* Training and instruction of site guards about the regulations Health

* Settle argument between PA and government about health post siting and if necessary resite

* Construct a health post in the western part of the PA

Other Opportunities

* Alternative occupations - beekeeping, dairy, poultry, spinning, small metal works

* Improved fuel situation

* Increased involvement of the peasants in decisions, with free and open discussions with DA

7.4 Best Bets

Preliminary Best Bets

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1. Improve the community water supply in the western part of the PA

IF the water supply is improved both in quantity and quality

THEN the health situation will improve, it will be possible to increase crop production and life will be less strenuous particularly for the women.

BECAUSE today women have to spend many hours collecting water often of a rather bad quality. When relieved of this they will have more time for farming activities and family care. In addition if abundant water is available it can be used for irrigation and production of vegetables. Overall, better quality water and increased agricultural production will lead to improved health standards.

ASSUMPTIONS

* Suitable water sources can be found close to the villages or transport of water to this area can be arranged at reasonable cost

* Required material, funds and manual labour are available

* The villagers are prepared to support the activity and utilize the water and working hours are made available in an efficient way

ACTIONS

1. Meeting with PA and village representatives to agree on the activity.

2. Secure support from the UMCC-DPP for cost of material and technical assistance.

3. Investigation of possible alternatives forthe water supply. Preferably made by the UMCC-DPP water engineer in cooperation with MoA water specialist. Preparation of plan.

4. Presentation of plan to PA and village representatives. Agreement of final plan.

5. Construction work under supervision of MoA specialists and DA.

Follow-up on Best Bet

We spent a morning with a farmer from the western side of Bededo examining the existing water sources in the area and discussing with him and a group of old farmers from the same area, the problems with the water supply and the measures the community had already taken to try and overcome them. The existing sources are:

1. Buritid spring. 15 minutes walk from Karchema village. Main source of water for the area. 350 families collect from this spring. Very little flow (less than 0.1 l/sec.). Long queue of women waiting every morning. Takes up to four hours to collect water in the morning. Spring not protected. Surface water can enter freely. Small reservoir collecting water during night time. Large enough to store total amount - no overflow.

2. Gangi spring. Situated in the northern part. Seasonal spring with very little flow. Will seasonally provide 170 of the above 350 families with some water.

3. Swamp area. North of Karchema village. Seasonally covered with water to a shallow depth. Dries up after a few weeks of dry weather. Water contaminated and having a "salty" taste. Shallow wells have been dug in the area when no surface water present. Shallow wells (ca. 1 m.) in the northern part give "white" water of a rather good taste and quality. Shallow wells (ca. 1 - 2 m.) in the southern part give "red" water with a bad taste and quality. Very little water is collected from this area due to the poor quality.

4. Robit spring. About 2 km west of Karchema village. Good supply of high quality water. Only a few members of Karchema village are allowed to collect water from this spring.

Alternative solutions to be considered and further investigated by the water specialists:

1. Protection of Buritid spring to avoid contamination and inflow of surface water.

2. Digging of a shallow well at some distance east of the northern part of the water-covered swampy area. The soil in this part seems to have a good filtrating effect. The well must be lined with concrete rings. Approximate depth 5 - 6 m. This solution was suggested by the farmers.

3. According to oral tradition there used to be a high-yielding spring with good quality water at Heto, close to the southern end of the swampy area. The landlord of that time wanted, however, to reduce the swampy area and get more grazing land so he ordered the spring to be blocked. The

site seems to be well known by the farmers. The possibilities of finding and reopening this srping sould be investigated. This solution also came from the farmers.

4. Drilling of a deep well adjacent to the new village, Karchema. Careful selection of site.

5. Donkey transport from spring in central Bededo village. 10 donkeys and 2 men could transport 1000 l/day to Karchema village.

Discussion at the general meeting

This problem was cited as the major one of Bededo, even by those farmers living in the eastern part of the PA where water is relatively abundant. Points 2 and 3 above were discussed at length and it was discovered that a survey had already been conducted to select sites for 3 shallow wells in the western part. These sites are known by the PA members. The MoA water specialists responsible for this survey should be traced and operations started for drilling. This is the priority action and in addition the protection of existing springs should be undertaken and possible renovation of the blocked spring should be investigated.

2. Hillside Closure Management Plan

IF we make a hillside closure management plan with the local farmers

THEN participation will be higher, additional ways of management will be found, farmers' problems will be brought to light, shortage of animal feeds would be minimised and the problem of fuelwood would be improved.

BECAUSE up till now there has been no proper plan for the closure, management ideas were not started from the grass-root level and motivation will be higher with farmer involvement.

ASSUMPTIONS

* Farmers will benefit when fodder and fuelwood is available

* Soil degradation and erosion will still be controlled and the surrounding people could get more use of the area

* Receive feedback from farmers

ACTIONS

1. Consult PA leaders to allow group discussions

2. Convince all farmers before starting work (extension and education)

3. Receive feedback from farmers.

Follow-up for the Best Bet

We spent a morning with 3 site guards, 3 old farmers and 2 PA leaders discussing the Best Bet and visiting one of the closed sites. The opinions of the farmers which emerged after some discussion among themselves were:

1. Matured trees should be given to farmers for fuelwood and construction purposes.

2. Dried trees should be used as fuelwood.

3. Demarcation of State forest, Communal forest and individual forest should be made.

4. Grass in the closure must be permitted to be used by farmers in a cut-and-carry system after the area is divided among the different villages of the PA for their own management and responsibility.

5. In the mature forest livestock should be allowed to be grazed in a controlled, seasonal manner.

6. Less slopy areas in the closure should be left open and must be used for grazing and farming within a system of soil conservation.

7. Unwanted bushes and some dense canopies should be pruned to enhance grass growth.

The conclusions about these seven points by the RRA participants investigating this issue are as follows:

1. Mature Eucalyptus could be used for farmers according to their needs and preferred purposes.

2. Dried wood could be collected by the farmers under close supervision by the guards and PA leaders. To prevent damage to the surrounding trees this activity should be carried out by an organised group and the cuttings then distributed equally among the PA households.

3. Clear demarcation of the three types of forest land in the PA should be carried out.

4. Division of the closures to the different villages seems a good idea as this will enhance the feeling of responsibility for the closures and their management and maintenance.

5. On a trial basis some better areas of mature forest could be opened up for seasonal grazing under close supervision.

6. Farmers can use less slopy farm land within the closure with intensive erosion control. But the grazing area should be used with a cut-and carry system.

7. Removal of unwanted bushes and some pruning of dense canopies could be carried out, again under close supervision.

3. Health Service Improvement

IF on-going training and Community Health Workers (CHWs) is conducted, a near health post is constructed in the western part of the PA and arguments about the health post which is already under construction are settled

THEN the knowledge, attitude and practice of the people will be improved and the health conditions in the PA will be upgraded

BECAUSE this will serve as an on-the-spot extension for health and development activities within the community. It will also provide both preventive and promotive services for better health and contribute to the overall organisation of the development programme.

ASSUMPTIONS

* A two-way communication between the health staff and CHWs is established

* Training materials are produced in the local languages

* CHWs are recruited, trained, supervised and supported by all concerned, properly and regularly

* Short additional courses are given at six monthly intervals

ACTIONS

1. Improve his/her environment - house, garden and personal.

2. Home visiting to identify problems, try to solve, be able to refer the problem to the correct department if necessary.

3. Carry out preventive serves mainly in the form of health education.

4. Take part in organising programmes for the community which are relevant to their needs - eg immunisation and protection of water sources.

5. Treat common diseases and minor accidents which are within his/her limitation of training.

6. Conduct home delivery and mother and child health services.

7. Keep basic records on the community and his/her work.

8. Increase self-awareness to motivate the community towards a greater awareness of their responsibility towards their own health.

9. Maintain close coordination with central and local government authorities and concerned health teams.

10. A CHW is not a worker who "does" health for the people, but rather is a motivator who motivates the people to do for themselves!

Follow-up for the Best Bet

We visited several homes and met with the staff and traditional birth attendant of Sulula health station. These discussions, together with the general meeting in the PA revealed the following findings:

Problems

1. Sulula health station head, while having served in MOH for four years has only been at this post for four months. He has poor knowledge of PHC and the on-going UMCC-DPP project.

2. Sulula health station itself is old and in bad repair, with no water supply.

3. The management of the health services is poor. There is a lack of transportation facilities and an irregular EPI programme due to lack of refrigeration facilities. The selection and motivation of CHWs has been poor and there has been no PHC committee since 1988. Lack of coordination between MoA and MCH is evident and there has been irregular supervision by the higher officials.

4. The Traditional Birth Attendant, trained in 1980, is very old (about 55) and poor-sighted. She is not supported by the PA or any other body, has not attended any refresher courses and shows no interest in serving any longer.

5. The Community Health Assistant (CHA) who was trained was unmarried and has now left the PA. The health post of the

CHA has not yet been completed due to lack of materials and some misunderstandings between MoA and the PA as to its siting.

6. Population growth was cited as a major contributor to the present shortages of land and water within the PA and to the incidence of malnutrition and water-borne diseases.

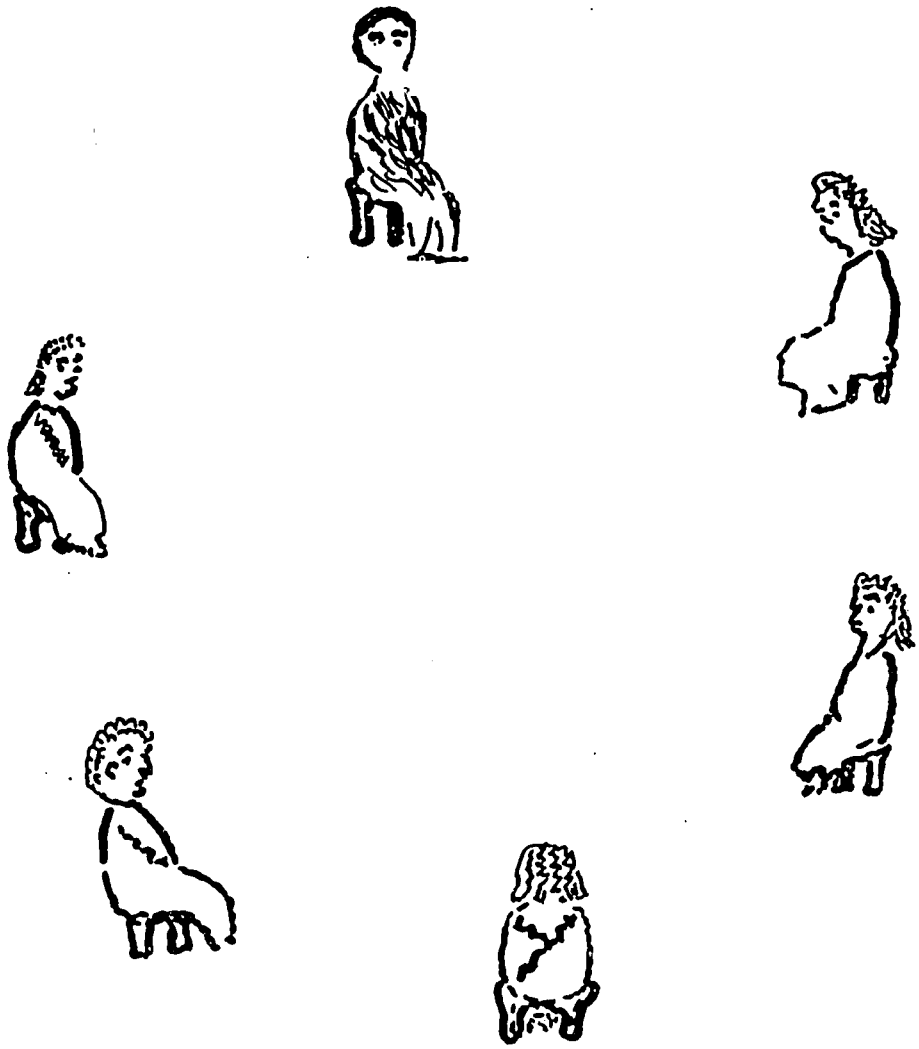

Figure 27. The listening approach to health extension

Suggested Solutions

1. Continuous orientation and training should be given to all concerned staff.

2. Sulula health station should be equipped and maintained to provide better services.

3. The existing water supply to the station should also be repaired and maintained.

4. A motor-cycle should be made available for Sulula health station to allow good supervision to be carried out.

5. Multi-sectoral coordination should be established.

6. PHC should be reorganised and followed up, supported and motivated by all concerned officials.

7. Proper reselection and training of CHWs should be done.

8. The health post which has already been started should be completed soon.

9. The problem of drinking water supply to the west of the PA should be solved.

4. Initiating Alternative Occupations

IF there are new alternative occupations such as bee-keeping, metal works, spinning, pottery, weaving, soap production, crop processing (ie oil seed), leather production etc.

THEN alternative income for farmers may reduce the number of livestock thereby decreasing the pressure on grazing land, and will promote the proper use of available land

BECAUSE there is relatively low income from farm products and a shortage of grazing land and farm land.

ASSUMPTIONS

* The farmers are ready to start the business
* Initial funds are available
* There is a market for the products
* The farmers are ready to cooperate (not necessarily PC based)
* The proper training is available

ACTIONS

1. Agreement by PA committee and farmers
2. Market research
3. Find financial source
4. Organise the working set-up and working groups
5. Training for skills, including accounting
6. Provision of technical assistance

Follow-up of the Best Bet

We held a group meeting with some farmers involved with traditional crafts and also talked with some members of the Women's Association to learn of the present alternative occupations in Bededo. The findings for both men and women are summarised in the following two tables (Table 12 and 13). In addition the following points about spinning and weaving are important:

1. Spinning

The Women's Association has some experience with this activity. When they started spinning in 1982 by the order of the Woreda Level Women's Association it was found to be profitable. Since there was no follow-up by the Woreda level however, the Bededo WA stopped the activity. At present individual women are practising spinning mainly for their own use rather than for sale. Only when they face serious cash problems (eg due to low crop production) will they try to sell the products.

The WA needs someone to help them initiate this activity. The Association is too busy to organise the working group since they have other duties to perform including supplying their quota of prepared food to the military and supporting those people who are moving into the new villages in the PA.

2. Pottery

Pottery is only practised by individual women. It is not considered very profitable and is not preferred as a means of earning additional income. If possible the women said they would prefer some other activity. There are three main problems connected with pottery: (1) shortage of fuelwood for firing, (2) difficulty in getting the clay soil, including the task of climbing the mountain to dig for the clay and the problem of access to the closures, and (3) the variable market for the products, with a good demand only when people have enough cash after selling their crops.

Table 12 Existing non-agricultural occupations for men in Bededo

Type of Occupation	Metal	Tanning	Carpentry	Weaving	Trading
Features					
Number of peple in Bededo engaged in this occupation	50-80	20	25	15	90%
Prosperity	little profit	---------- in general only provide supplementary income --------			
Traditional entry	---------- usually sons take over from fathers or neighbours from neighbours ---------				
Number of people given formal training	1	2	-	-	-
Problems	Shortage of iron, and charcoal	Skins of poor quality; competition with factory; shortage of castor oil plant; market demand is low; pests attack stored leather	Demand for work is low	?	?

Table 13 Alternative occupations for women in Bededo. Ranked by five members of the Women's Association

Occupation	Raw material	Skill available	Market Demand in PA	outside PA	Problems
Spinning	Not enough at market	Yes	Yes	Yes	No initiating or organising body. Time constraints
Basketry	Readily available	Yes	Yes	Yes	Ditto
Emboirdery	Available	Some women know how to do it. They can train others	No	Yes	Ditto
Carpet production	Not available	Nobody in PA knows how to do it. Training required	No	Yes	Ditto

5. Information and Extension About Trees

IF we could supply more information and extension about closures, communal forests, tree rights, cut-and-carry system including site guard instructions

THEN guidelines and regulations will be made clear (re-closures and tree rights), farmers' interest in private land planting would increase and site guards will not be confused about their rights and farmers benefits

BECAUSE site guards have sometimes misunderstood individual farmers' rights, PA leaders have sometimes acted by their own wish (eg giving somebody's trees to someone else) and at present obtaining permission to cut one's own tree is a long process.

ASSUMPTIONS

* There sill be guaranteed right to farmers
* Farmers will handle cut-and-carry systems appropriately

ACTIONS

1. Consult PA leaders to follow regulations

2. Farmers must get guarantee for their planted trees

3. Close supervision should be undertaken

Follow-up for the Best Bet

During the general meeting in the PA the problem of unclear distinction between state and communal forests was raised again and a call was made for a clarification of the rights of usage of the trees within the various parts of the PA.

6. Improved Agricultural Practices

IF irrigation schemes are developed, improved crop rotation and intercropping are established, processing and cash crops are introduced (eg oil seed, chat, gesho, coffee), fertilisers, pesticides, improved techniques (row planting etc) and proper soil management (maintenance of soil terraces, trees on bunds) are introduced

THEN yields and incomes will increase, pressure on farm land will be reduced and there will be more incentives to work on the farm land

BECAUSE there is a shortage of farm land, shortage of grain to support the family, and improper use of water.

ASSUMPTIONS

* The proper water usages is carried out; the farmers accept the new crops, fertiliser, pesticides; improved seeds and improved tools are available and the farmers agree to maintain the irrigation scheme.

ACTIONS

1. Identification of the proper water usage

2. Extension work and training of the farmers

3. Selection of model farmers for demonstration

4. Supply of materials

Follow-up for the Best Bet

We discussed with some farmers their present agricultural practices and learned of the predominant cropping patterns (figures 21 and 22) and the following limitations in the system at present:

Crop rotation is not developed fully, with few legumes being included in the cycle due to the severe shortage of land and the need to maximise grain production.

Intercropping is seldom practised.

Fertilisers are not used to their full potential. While the use of natural fertilisers is much appreciated by the farmers its use is limited to the small areas of land around the homestead. Wider applications are restricted because of the need for dung cakes as

a substitute for the scarce fuelwood and because of the insecurity of ownership of the farmland which may change hands very two or three years. Artificial fertilisers have been used for the last three years, when they were supplied free of charge. The farmers are not yet ready to pay for the fertiliser despite some reports of a 50% increase in crop yields.

Trees on soil bunds are viewed in a negative light as they are considered attractants for birds, rodents, gazelles and other wildlife pests.

The suggested improvements in agricultural practices which the farmers proposed included:

Free supply of fertiliser
Improved use of natural fertiliser
Proper weeding

Indeed the increased use of fertiliser was considered one of the few means of dealing with the scarcity of farm land which severely limits crop production levels.

8. IMMEDIATE FOLLOW-UP IN GRARAMBA AND BEDEDO

8.1 Graramba

1. Water supply

This is the easiest and most immediately effective opportunity for the project to help implement in the PA. Drilling of the well in the site as already specified should commence immediately.

2. Gully reclamation

Only limited inputs are required from the project for this follow up opportunity - some technical advice with the provision of gabions and perhaps some tree seedlings to help the farmers to start work on this activity. As they agreed, the labour would come from the PA and no food-for-work would be required.

3. Indigenous tree species multiplication

Of the 20 tree species mentioned as useful by the farmers, only one was an exotic. The other indigenous species have not been researched by forestry professionals for their nursery propagation qualities. The project should introduce some of these species into its existing nurseries to identify promising ones which could compare with Acacia saligna in its survival while providing the farmers with a wider range of uses. If such substitutes were found among these species their expansion and distribution should be undertaken.

8.2 Bededo

1. Water supply

Three sites for shallow wells in the western part of the PA have already been chosen by water surveyors of the Zonal office of the MoA. This was done one year ago and urgently needs to be followed up. The surveyors should be contacted and the UMCC-DPP water engineer should consult them and arrange for drilling to commence as soon as possible.

2. Hillside closure management

Matured eucalypts should be made available for the use of the farmers through organised cutting and distribution between the households.

Dried wood, unwanted bushes and tree prunings should be collected under supervision of the site guards and PA leaders and by an organised group of farmers. The products should be distributed among all households equally. This is a simple and immediate step in demonstrating the benefits which the farmers are entitled to receive from the closures and would be an important step in

involving them in the controlled use of the tree products. The first action should be to arrange a meeting with the PA leaders and representatives from the different villages within the PA.

The project should look into and further discuss the feasibility and appropriateness of the following suggestions raised by the farmers:

Division of the closed areas among the several villages in the PA, with each village then being responsible for the management and usage of their particular area of forest.

Opening up of certain areas of the closures for controlled and seasonal grazing and/or cut-and-carry. The latter would be preferable and probably easier to manage and the areas chosen should be at low risk from erosion - ie on less sloping land and in conjunction with intensive erosion control measures.

Planting of fodder trees in the closures, again where erosion risk is low and where farmers can make use of the products in a controlled and equitable manner.

3. Clarification of tree-growing areas

The project should encourage and inform the farmers of the clear demarcation of the three different areas of forests: state, community and private. This task should be carried out jointly by the DA, forestry specialists from the local offices and the PA.

Successful natural resource management is central to combatting famine vulnerability. The ability of local people to plan and manage their own resources is critical. Each of the best bets for Bededo and Grarambo has been formulated through local discussion, but this process needs to be carried on into implementation. Each best bet tackles the issue of famine vulnerability. Water supply is seen as key in both PAs and this opens up possibilities for other options such as local tree planting. Tackling famine vulnerability combines best bets that are relatively straightforward technical options (e.g. well sinking) with other equally important components of reducing drought impact susceptibility such as security of tenure over trees and increasing committment to manage local resources through participation in planning.

Although the recent history of resource management initiatives in Wollo have been centred around incentives supplied by Food for Work, it is interesting to note that the best bets recommended by the PAs did not necessarily include the necessity of committments of Food for Work input.

9. REVIEW AND EVALUATION OF THE WORKSHOP

We spent the final session of the workshop discussing what we felt we had learned and achieved as well as the problems and limitations we had encountered in the work. Finally we discussed what the next steps should be in applying the RRA approach elsewhere. The following is a summary of the discussions.

1. General Evaluation of the RRA

There was general agreement among the participants that they had learned much from the exercise and had been able to fulfil many of the objectives which they had set themselves on the first day. Learning from the farmers and involving them in the work were particularly mentioned as having been valuable experiences. Among the other comments made were:

> "I found the techniques of working in groups and asking about each topic from different angles useful ones for getting information for rural development."
>
> "I was able to learn more about the UMCC-DPP and how to initiate action at the grass-root level."
>
> "We managed to have open discussions with the PA members by holding the different group meetings."
>
> "I have learned how health really is a multisectoral issue and how coordination between MOH and MoA is vital."
>
> "I have been able to gain valuable field experience."
>
> "This is the first time I have gone to a community to discuss a wide range of problems and obtain the solutions from the community."
>
> "The community approach was very valuable, as the community was able to evolve their own ideas and we were able to integrate the people in our work."
>
> "I have been able to learn about different agricultural subjects by working with different experts."
>
> "I have learned how trees can be better used and these ideas can also be applied in different areas."
>
> "The problems identified by the DAs in our recent workshop on participation have been verified by the farmers."
>
> "I found this a valuable way for the monitoring team to get closer to the beneficiaries."

"We have been able to bring to light and discuss some of the hidden issues behind our project work."

2. Problems, Limitations and Cautions

Many of the participants voiced their concern that we had inevitably raised the expectations in the PAs and that we should take actions now to help fulfil these expectations. The limited capacity of the project to help with only some of the problems identified in the PAs was discussed, as were the problems encountered with the RRA approach itself. The following are some of these comments:

"The orientation at the beginning of the workshop was not clear and I only began to understand the aim of the work once we started to interview the farmers."

"More introductory materials should have been made available prior to the workshop and the participants should have been better prepared before attending the workshop."

"The farmers will not always be available to talk with us so we should try and minimise the amount of their time which we take up."

"The length of the RRA work may not be able to be afforded again. The time taken for group discussions in the PAs may also be difficult to arrange."

"The time spent on the RRA was too long", (others said it was too short and others said it was the right length).

"The focus on only one component (trees) was not enough. We need to consider all issues in the PA."

"We should have included more technical experts in our teams. Their contribution was needed especially when we had identified some preliminary Best Bets and we were trying to find out more details on these ideas."

"We should have interviewed more farmers who live far from the centre of the PA."

"There was not enough close supervision of our work."

"I found some language problems during the interviews."

"Some data were not collected, such as rainfall and soil erosion figures."

"It was difficult to avoid asking leading or unnecessary questions and in this respect a more structured approach would have been better."

"We must make our work clear to the farmers and be sure that our joint ideas do not exceed our capacity."

"We must check carefully the follow-up work in connection with the closures to avoid any destruction of these areas."

3. Follow-up and Further Training

Several of the participants voiced their concern about the lack of practical implementation after the RRA exercise last year. One of those who had participated in last year's RRA stressed the need for actions to be taken this time , especially on the issue of the closures:

"I think the objectives of our work will be fulfilled only when the peasants themselves will be in a position to manage the hillside closures by themselves."

The immediate follow-up requirements for Bededo and Graramba are dealt with in the previous chapter. Ideas for follow-up for the participants themselves were discussed and the most appropriate types of further RRA training and applications for other groups of people were also discussed. The general feeling was that the participants would value another RRA workshop dealing with other and broader issues, and that they see the most appropriate focus for further training to be toward the DAs, in conjunction with awraja level staff. The following are some of the specific comments:

"A one-off workshop like this one is useless without any follow-up training or internalisation of the objectives of this workshop"

"It will be difficult to organise the follow-up for this workshop since there are different groups of people from different areas of work."

"Future RRA training should be given to smaller groups of participants, drawn from the awraja offices."

"RRAs should also be tried at the Zonal level, not just at the PA level."

"We should expand the coverage of the RRAs by conducting one lasting only one or two days in each of the PAs in the project area."

"The follow-up training should be spread over the years to help with the constraints of limited staff time."

"Participants for future RRA training should come from the regional and awraja offices of both the MoA and MOH."

"The participants of this workshop should be able to attend at least two more and the trainers should be not only

expatriates. One workshop could be run every year by expatriates, the rest by local staff."

"Future workshops and training should continue for experts and DAs. These should be started very soon."

"The report of this workshop should go to all participants, including to our DA centre in Degan!"

"An Ethiopian staff member should be trained to conduct future RRA workshops."

"Future applications should be at a more grass-roots level, focussing on a Development Centre or Producers Cooperative. The participants should be from more of a grass-roots level too - DAs."

APPENDIX 1

ERCS Personnel

Habtamu Jada	UMCC-DPP Project Manager, Regional Department Head of Natural Resources
Mamo Tsegaye	UMCC-DPP Project Coordinator
Getahun Tebedge	Head of the UMCC-DPP Monitoring Team
Gunnar Norrby	Member of the UMCC-DPP Monitoring Team
Mayumi Katsube	Member of the UMCC-DPP Monitoring Team
Helmut Spohn	Agronomist
Marlies Rothweiler-Spohn	Agronomist
Jonas Kallin	Forester
Erik Dannebruk	Forestry
Alemnesh Kassaye	National PHC Coordinator
Amarech Ashenafi	Sociologist
Zegeye Tefferu	Red Cross Development Officer

MoA Personnel

Kebede Abahneh	Extension Senior Expert
Dessalegn Debebe	Cooperative Promotion
Tefera Aragaw	Animal Resources
Tekleab Leake	Planning and Programming Service
Kassa Gebeyelu	RRC DD Expert
Tesfaye Berhanu	Soil and Water Conservation
Balcha Alemu	Development Agent
Said Ali	Development Agent
Aragawi G Selassie	ABFRD Expert
Fetlework Alemayheu	Development Agent
Hirut Tebeje	Livestock
Gebeyehu Goshu	Livestock

MOH Personnel

Abate Gizaw	Ambassel awraja PHC coordinator
Ali Yiman	Kalu awraja PHC coordinator

Others

Jennifer McCracken	Training Faculty (IIED, London)
Ian Scoones	Training Faculty (IIED, London)

Rapid Rural Appraisal

1
Why use RRA?

To avoid the problems of long and costly formal surveys, including:

- too much data collected;
- irrelevant data collected;
- late and inappropriate results produced;
- too little/no participation by the local people.

To avoid the risks of quick and unstructured *development tourism* surveys, including:

- obtaining only a *snapshot* picture of the area or topic;
- relying heavily on previous assumptions;
- working without a framework to guide the collection and analysis of information.

To help overcome the biases of:

- meeting only the more accessible and well-to-do individuals and groups;
- looking for only the quantitative, apparent data, and missing the more qualitative, in-depth information and insights;
- dealing with the local population in a 'top-down' manner.

To encourage participation of local people in the process of development by:

- investigating local insights resulting in more effective research information being collected;
- Involving local people in research and design so increasing commitment and empowerment..

2
What are the principles behind RRA?

- We can involve local people and increase **participation and empowerment;**

- We can **learn from** the local people, use local classifications and terminologies;

- We can **limit** the amount of information we collect **(optimal ignorance);**

- We can explore the **range** of circumstances, rather than get a statistical sample;

- We can investigate each issue in different ways and from different angles **(triangulation);**

- We can adopt an **informal** approach, and **change** it as we go **(iterative);**

- We can learn better in teams, with people from different backgrounds and with different areas of expertise **(interdisciplinary);**

- We can do much of the work **in-the-field.**

3
What are the techniques of RRA?

The RRA approach provides a *basket of choices* of different techniques. Any RRA exercise will make use of a particular combination of these techniques, depending on the available resources and the desired output. The choices include:

- **Secondary data review:** learning from existing official records, census reports, survey documents, maps, photographs,etc.

- **Direct observation:** looking first-hand at the conditions, the agricultural practices, the people, the relationships, the problems, etc.

- **Semi-structured interviewing:** informal discussions, based on a flexible checklist of topics. Respondents could be individual villagers or key informants *(people with specialist knowledge, for example the schoolteacher, village leaders, health officer).* Interviewing can be done with individuals or in groups.Taking casual notes during the interviews. A learning experience for the interviewer.

- **Group interviewing:** may be in focus groups *(for investigation of interest groups' or specialists' attitudes)* or open group workshops *(for general discussion or feedback)*

- **Diagramming:** producing diagrams, often in the field, to help communication and learning. For example maps, transects, seasonal calendars, flow diagrams, cartoons. Roughly drawn on paper or scratched on the ground.

- **Ranking:** Investigating decision-making preferences and *why* people make choices can be done in ranking games. Preference ranking, ranks items through pairwise compari-

Terms of Reference for RRA Exercise in Wollo
To Investigate Local Decision-Making and Participation in
Forestry and Soil Conservation

PREAMBLE

One of the main concerns of the team responsible for the internal monitoring of UMCC DPP (1987 report) was the need for more research to provide a firm background to the projects activities. On the other hand many studies have been initiated, including these of particular relevance here:

1. UMCC DPP project papers volumes III and IV (1986), dealing with the socioeconomic characteristics and the existing land use patterns in the project area.

2. RRA exercise conducted during February - March 1988 by staff of UMCC DPP, which focussed on the issue of diversification. The RRA methodology developed in that work will form the basis of this exercise.

3. Hillside closure studies initiated in late 1988 (report by Martin Bendz, October 1988) and currently ongoing (report by all those involved, forthcoming). These studies are focussing on technical trials of management schemes for closures in several PAs.

4. Soil conservation studies by MOA and University of Berne, Switzerland (Report Hans Hurni). These have provided quantitative data on rates of soil loss, run off and country report on conservation activities.

5. Worskshop held by UMCC DPP on "peoples participation in natural resource conservation and rural development" in late 1988 (report forthcoming).

6. Various consultancies on forest development, including
" Qualitative change in Forestry " (September, 1987) and
" Trees grow i. Wollo " (February, 1988).

sons. Direct matrix ranking ranks decision criteria. Wealth ranking is a tool for investigating local perceptions of wealth and is a rapid way of stratifying the population.

· **Games and role playing:** playing learning games, such as adaptations of traditional board games *(e.g. the Ayo board to investigate attitudes, strategies and preferences)*, futures possible *(to find people's ideas for opportunities)*, and the Why? game *(to find people's perceptions of the root causes of problems)*. Informal dramas by the RRA team, or the local people, or both, for communicating and learning, and stimulating discussion.

· **Stories and portraits:** as part of the report of the RRA, recording interesting stories told during the interviews, and describing *portraits* of households with interesting or unusual situations.

· **Workshopping:** brainstorming, analysis and presentation sessions in the field or in the meeting-room.

4
Who uses RRA?

· Anyone involved in development and research can; it is best carried out by local people.

5
Where has RRA been used?

Mostly in less developed countries (but also in developed).

Mostly in rural situations (but also in urban).

Mostly in the agricultural field (but also in others, for example, economics, health, nutrition, forestry, energy).

Mostly at the village level (but also as larger scale exercises).

6
When is RRA used?

The RRA approach can be used throughout the project cycle:

· When exploring an area to learn of the key problems and opportunities to help plan research or development projects **(Exploratory RRA,** for example **Agroecosystem Analysis);**

· When investigating one specific topic, question or problem **(Topical RRA);**

· When involving local people in research and planning **(Participatory RRA);**

· When monitoring and evaluating a research or development activity **(Monitoring and Evaluation RRA);**

· When dealing with conflicting differences between different groups **(Conflict Resolution RRA).**

7
Limitations of RRA

· RRA techniques are **complementary** to other research methodologies *(statistical surveys, long term anthropological study etc).*

· RRA techniques may be rapid, but the **process** of development is not.

· Participatory approaches to research may raise local **expectations;** follow-up is necessary.

· RRA techniques may not be cross-culturally transferrable; they need to be **adapted** to local sitatuions.

· Appropriate use of RRA techniques requires the **training** of facilitators and participants.

· RRA produces questions, hypotheses or 'best bets' for development - not **final** answers.

Produced by the Sustainable Agriculture Programme, IIED, London

7. Botanical inventory of indigenous plants, being carried out by Dr. Messfin Taddesse of the National University.

8. Ongoing investigation into local uses of indigenous plants.

9. Study of the effects of Food for Work in DPP in Wollo.

OBJECTIVES

The first objective of this exercise is to review the above studies in order to identify the issues which have already been raised / investigated with respect to forestry / soil conservation/ decision-making and participation in the project area.

The exercise itself, by investigating two case-study PAs using an RRA methodology, is planned to provide UMCC DPP with information as to how the environmental problems connected with deforestation and soil erosion in the PAs are related to and affected by the decision-making processes within the PAs. This would include looking into such issues as:

1. The awareness and perceptions of the peasants, of these environmental problems;

2. Individual and community initiatives in forestry and soil conservation activities;

3. The organization of such activities (who is responsible);

4. The incentives (and disincentives) for such activities (why they are undertaken, or why not);

5. The difussion of such activities (the degree of difussion and who is initiating it);

6. The place of Food for Work in these activities.

In specific, the exercise will focus on the following aspects of forestry and soil conservation:

1. Hillside closures
2. Agroforestry, and silvipasture, and tree planting within household plots.
3. Community forestry
4. Soil conservation - in particular gully control, artificial waterways and farm terraces.

OUTPUTS

The outputs which are planned to be produced from this exercise include:

1. Insights into the forestry and soil conservation activities going on in the PAs, relating to the six issues outlined above.

2. Possible formulation, with the PAs, of mechanisms for improved forestry and soil conservation activities.

3. Possible formulation, with the PAs, of mechanisms for improved management and distribution of benefits from these activities.

4. Evaluation of potential further applications of the RRA methodology in UMCC DPP

5. Based on above evaluation, possible development of a curriculum for training development agents in the RRA methodology.

PARTICIPANTS

The exercise will involve participants, drawn from ERCS Wollo Branch, UMCC DPP staff from the Addis and Dessie offices; MOA awraja - level staff and Development Agents from the two PAs being investigated; SIDA mission staff (one or two) and IIED (two facilitators). The participants will be split up into two teams, one to investigate each PA and will come together for plenary presentations and discussions.

TIMING

The exercise is scheduled to take place in the first two weeks of June, 1989, starting on or around 3 June. A third week may be spent in report writing and disucssions on follow-up activities.

LOCATION

The two PAs which will be investigated will be chosen on the basis of their contrasting biophysical and/or socioeconomic conditions. They will be within the UMCC-DPP area but those PAs where the hillside closure trial studies are going on will not be chosen, nor will these PAs which were investigated in the previous RRA exercise.

METHODOLOGY

The methodology used will be based on that of the previous RRA exercise in Wollo. The day-to-day activities will not be fixed at this stage, but will be decided by the participants as the exercise proceeds. One planned activity, towards the end of the exercise, is a meeting in each of the two PAs where the participants can discucss with the peasants the findings and possibly develop with them proposals for improved forestry and soil conservation activities and management mechanisms, in their PAs.