TECHNICAL PAPER 18

Handing Over the Stick? Report of a Village Management and Farm Forestry Consultancy

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East Usambara Catchment Forest Project

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TABLE OF CONTENTS

Appendices:

PREFACE

The Tanga Region Catchment Forest office, assisted through the East Usambara Catchment Forest Project, is charged with the responsibility of managing about 30,000 ha of forest within forest or nature reserves. In addition, there is still more than 10,000 ha of forest which is non-gazetted and part of the local land husbandry. Much of this forest is of considerable conservation value from a global perspective. They are also of great importance for the local communities and as the catchment for Sigi River, the source of water supply for the Tanga Municipality.

In Phase I the project made an effort to consolidate the forest estate. The challenge for Phase II is management - management which includes the needs and requirements of the communities surrounding the forest reserves. Management, which in the long-term perspective eventually has to be sustained with much less resources than at the present moment.

The present consultancy, a team work between the consultant and project staff, is one in several strategies to learn and work with the local communities. It was an attempt to explore the possibilities of involving local people and villages in the management of public land forest, with an ultimate aim of learning from this experience, and if fruitful, possibly transfer some of the lessons to the management of the government forest reserves. The purpose was also to focus the project on land husbandry issues in the villages, and to expose and train both staff and farmers in farm forestry and village forest management.

The experience from the consultancy points at several of the opportunities and constraints in changing the general approach to management of natural forest. It also shows that there are no general panacea for resource management, but that most issues should be seen in a quite local focus, and over a broader time perspective. The consultancy provides a substantial contribution to help the East Usambara Catchment Forest Project to address the concerns of local communities, which are increasingly squeezed between protected forest areas and the vast estate lands in the lowlands and the foothills of the East Usambara Mountains.

Stig Johansson
Chief Technical Adviser

EXECUTIVE SUMMARY

1 A three month consultancy was commissioned by the East Usambara Catchment Forest Project (EUCFP) between September and December 1995, on participatory management of village forests and promotion of farm forestry initiatives in East Usambara villages. Four pilot villages were selected for detailed study, two focusing primarily on village forest management and two on sustainable farm forestry practices.

2 Participatory Learning and Action techniques were used to prepare forest conservation and farm forestry management plans in these villages, and to ensure that the plans are viewed by the villagers as their own, not EUCFP's. Experiences gained through field surveys, village meetings and discussions were supplemented by study tours to West Usambara and Zanzibar, and by on-the-job training of farmers and staff.

3 Analysis of opportunities and constraints to forest conservation and sustainable use of agricultural lands in East Usambara demonstrates that:

- some 60% of public forest lands in a 30 sq km area round Amani are estimated to have been cleared since 1954, mainly for agriculture and building materials, the result of rapid population growth and immigration from elsewhere in Tanzania;

- the land use practices of most East Usambara farmers are both unproductive and environmentally unsustainable. Slopes as steep as 60% are planted to annual crops, terracing and contour bunding are almost unknown, high yielding varieties and fertilisers are rarely used. Few trees are planted on farms though the number is rising. The reasons are short time horizons, shortages of land and economic opportunities, and inadequate services and institutional support;

- there is now a growing awareness among farmers and village leaders of the risks of continuing with these damaging practices, and a readiness to reverse the trend by conserving remaining forests, planting trees more extensively and adopting more sustainable land use practices **provided** the new measures are economically viable.

4 The four pilot villages demonstrate a range of socio-economic and environmental situations, in which such innovations are being tested:

- Vuga and Hemsambia are highland villages sharing an important catchment forest which they are trying to conserve. The forest has been demarcated and surveyed, and rules for managing it have been prepared and are being implemented.

- Mgambo-Miembeni is a land scarce village with a mixed population much influenced by surrounding tea estates, and a rapidly declining forest resource. Major obstacles are being faced to conserving the last remaining natural forest area.

- Ubiri is an almost treeless highland village which has shown great interest in tree planting. Village nurseries have been established and a five year programme of tree planting and agricultural improvement is being drawn up.

- Potwe-Ndondondo is a lowland village which has lost part of its forest land to a Government Reserve, and has hence become more interested in tree planting and intensifying land use. A five year programme for these activities is being drawn up.

5 Study visits to sites in West Usambara and Zanzibar demonstrated the heavy costs of deforestation and the difficulty of repairing environmental damage, as well as some innovative approaches which have relevance to East Usambara.

6 The lessons learned from these experiences include:

(1) General Issues:

- The extent of the environmental threat is still not widely recognised by East Usambara farmers;

- Soil conservation measures are given low priority, but water conservation is taken a bit more seriously;

- Securing land tenure is very important both for village forest management and for on-farm tree planting;

- Strategies for village forest management and farm forestry development are part of an integrated whole, though one may have to come before the other in some sites;

- Development projects operating in East Usambara would have more impact if they pooled their resources.

(2) Village Forest Management Issues:

- Many benefits flow when villagers rather than Government employees are responsible for village forest management, but these benefits need to be weighed against the costs and risks of "handing over the stick" too quickly;

- Vested interests and weak leadership in the village community can undermine effective village forest management: local administrative and political support is often needed;

- The smaller the forest management unit and the closer it is to the forest in question, the easier its task will be;

- Decentralising the responsibilities of EUCFP field staff makes collaborative forest management much easier;

- Separating the advisory and policing roles of EUCFP field staff in village forest management is highly desirable.

(3) Farm Forestry Issues:

- East Usambara farmers are increasingly interested in planting trees on their farms, mainly because fuelwood and building materials are becoming so scarce;

- They are less appreciative of the environmental benefits, but the situation is changing: it is possible to use tree planting programmes to raise environmental awareness;

- Boundary planting of non-competitive tree species like Grevillea, Calliandra and the nitrogen-fixing Leucaena, Gliricidia and Albizia is becoming very popular;

- Block planting of Eucalyptus and teak for commercial sales is popular with larger farmers;

- Interplanting trees with annual crops, combined with other soil and water conserving techniques, is most likely to be accepted where a high value cash crop is planted which covers the cost of the labour and materials involved;

- Indigenous tree species are attractive to farmers, but many are slow maturing and difficult to establish. Fast growing exotic species, especially Eucalyptus, are very popular but site selection needs care. Prejudice against this species may be exaggerated. A range of trees for all uses is required;

- Tree nurseries are best located in villages, and are best run by individuals, small groups of farmers or schools;

- Tree seedlings are more highly valued and better cared for if they are sold to farmers rather than distributed free of charge;

- Farm forestry innovations are most effectively promoted when agricultural and forestry staff work together, and receive training in each other's discipline.

7 Recommendations for Action as practical follow up to the consultancy are made as follows:

- A major information campaign is needed to demonstrate the environmental risks facing East Usambara communities, and the opportunities that exist for reversing current trends;

- More well planned study tours are proposed, focusing on causes of environmental damage in sites comparable to East Usambara and remedial action that has been or could be taken;

- Training of foresters and agriculturalists in farm forestry and participatory planning and management techniques is needed. Recommendations are made on how best to provide this;

- Villagers need farm forestry advice, materials and finance. Suggestions are made on how to supply these services;

- Reforms proposed to the 1957 Forest Ordinance and District Land and Environmental Conservation By-Laws need to be enacted urgently. EUCFP could use case studies such as those covered in this consultancy to lobby for such changes;

- Closer cooperation between environmental agencies operating in East Usambara is essential. In particular, merger of EUCFP and EUCADEP, if at all feasible, is strongly recommended;

- On-farm tree planting should be an integral part of a forest management plan, but a step by step approach may be needed;

- Recommendations are made on the action still required in the four pilot villages, for finalising the management plans and for supporting and monitoring their implementation;

- New ventures in village forest management and farm forestry should be embarked on only where a clear request is received from the villagers, and where EUCFP is confident that it has the resources needed to service the villagers' needs;

- Planning strategies for village forest management and farm forestry development are proposed: recommendations are made on training staff in their use;

- Guidelines are proposed for village forest management, covering appropriate forest management units, formulation of conservation by-laws, roles of EUCFP foresters and schedules for transfer of powers to farmers;

- Guidelines are proposed for farm forestry development, covering selection of tree species and planting locations, seedling distribution policies, nursery ownership and management, integration of trees in the farming system, and training of foresters and agriculturalists in farm forestry skills.

KEYWORDS: Participation, village forest management, farm forestry, East Usambara, Tanzania.

1 Background

1.01 The East Usambara Catchment Forest Project (EUCFP) is charged with the task of conserving forests and biodiversity in the East Usambara mountains, and of promoting sustainable use of forest and agricultural land for the benefit of local as well as global communities.

1.02 Major emphasis in Phase 1 of the project was placed on the protection and where necessary enlargement of State Forest Reserves. An important focus of Phase 11 is to promote the participation of villagers in sustainable use of their own forests, as well as planting of trees on agricultural land for soil and water conservation purposes and to reduce pressure on natural forests.

1.03 A consultancy was commissioned over a three month period between September and December 1995, to assist villagers and EUCFP staff in the formulation of pilot forest management and farm forestry plans, to develop a methodology for replication of these models, and to train project staff and farmers in application of the required planning and management techniques

1.04 The terms of reference of the consultancy are in Appendix 1. The programme of work undertaken by the consultant with his EUCFP collaborators is in Appendix 2. This report describes the approach adopted in the consultancy, presents the outcome of the work done, and suggests a number of areas needing further attention in future.

2 The Task

2.01 In relation to village forest management the major tasks of the consultant and EUCFP team were -

1) to analyse the opportunities and constraints to village forest management, and particularly the threats to survival of the forests and how they can be conserved, in two pilot villages which have sought assistance from EUCFP for village forest conservation;

2) to assist the village communities in drawing up plans for managing their forest areas, which they can implement themselves with help from EUCFP;

3) to guide EUCFP staff in their new role as participatory planners and promoters of village self-regulation, in contrast to their traditional role as enforcers of State forest legislation;

4) to propose a plan for future EUCFP activities in village forest management, including recommendations on changes needed in the institutional framework and on the support services required by villagers.

2.02 In relation to farm forestry practices the major tasks were -

1) to analyse opportunities and constraints to farm forestry development in two pilot villages where pressure on natural forests has made farmers eager to plant trees on their own land, to replace their current sources of fuelwood, building poles and timber;

2) to assess the farm forestry practices used in these villages, and to identify new methods which might be adopted for increasing fuelwood and timber supplies as well as for soil and water conservation purposes;

3) to help farmers in these villages, together with their EUCFP advisers, to prepare and start to implement village farm forestry plans and to obtain the resources and expertise needed for this purpose;

4) to design a model of farm forestry development, including the contribution needed from EUCFP, which can be adopted by other villages in East Usambara.

3 Selection of Villages and Methods Adopted

3.01 Throughout the consultancy a participatory approach to plan formulation was adopted, to ensure that the villagers see the resulting plans, whether for forest management, farm forestry or a combination of the two, as their own rather than those of the project or the government.

3.02 Two pairs of villages adjoining important village catchment forests in Maramba and Amani Divisions - Vuga and Hemsambia near Mpanga Forest in Maramba, Mgambo and Misalai near Handei Forest in Amani - had requested EUCFP assistance for protecting their forests (see extract from EUCFP Phase II Project Document in Appendix 3). Although the basis of these requests for assistance later turned out to be more complex than originally understood (see para 5.02), Mpanga and Handei forests were selected as pilot forests for village management.

3.03 Seven pilot villages with a range of characteristics had been identified by EUCFP for attention under the farm forestry programme (Appendix 3). Two of these - Potwe Ndondondo at the foot of the escarpment, and Ubiri a highland village bordering on tea estate land - were believed to have shown particular interest in tree planting and were therefore selected as pilot villages for this component of the consultancy.

3.04 In each case discussions were held initially with the village governments, and subsequently with all sectors of the village community -

1) to explain the purpose of the EUCFP intervention;

2) to assess the nature of the land and forest resources available to the villagers, the uses currently made of them and the threats facing the remaining wooded areas;

3) to consider jointly the opportunities available to the villagers for managing their forest resources more sustainably, whether by restricting access to remaining forested areas (in the case of Mpanga and Handei) or by extending tree planting and adopting improved farming practices on agricultural land (in all villages).

3.05 Field surveys were then conducted, jointly by village representatives, EUCFP staff and local Forest and Agricultural Officers -

1) to measure the extent of the village forests (in the case of Mpanga and Handei), their value and the pressures on them, and to agree on appropriate controls as well as development of alternative wood sources to substitute for over use of the forests [1]

2) to examine a representative sample of farms and woodlots (in the case of Potwe and Ubiri), to assess previous experiences of tree planting and opportunities for expansion, to help the villagers prepare village maps showing areas suitable for planting trees, and to agree on a programme of individual and collective tree planting to meet the villagers' future needs.

3.06 A guide to the participatory planning procedure used for drawing up village forest management plans was prepared and is reproduced at Appendix 4. A similar guide was designed for preparing farm forestry action plans and is at Appendix 5.

3.07 Based on the application of these guides and on the outcome of discussions and field surveys held in the four pilot villages, draft plans for village forest management and farm forestry development in three of the four villages were then compiled, setting out targets, control measures, input requirements and budgets. Initial discussions on the drafts were held with the village communities, EUCFP management and relevant local authorities. The outcome of the investigations is summarised in Section 5 and the four village case studies are written up in Appendices 7-10.

3.08 Throughout the consultancy efforts were made to maximise participation and training of EUCFP staff and village leaders, by means of -

1) on the job discussions and recording of the practical issues being tackled on the ground;

2) Participatory Learning and Action (PLA) techniques such as village mapping, farm surveys, semi-structured interviews, triangulation, etc (the methods used are described in Appendix 6);

3) study tours to other projects or places where relevant experience of farm forestry or village forest management had been gained (see Section 6 and App. 11);

4) training sessions reviewing the issues encountered and considering a range of approaches to their resolution (Section 6 describes the extent to which it was possible to do this in the period of the consultancy).

[1] This was done only at Mpanga Forest; in the case of Handei Forest, for reasons explained in the case study at Appendix 8, it has not yet been posssible to move beyond the discussion stage outlined in paragraph 3.04.

The lessons learned from the pilot villages, study tours and training experiences are reviewed in Section 7. Proposals for future action based on these findings are in Section 8.

4 Analysis of Opportunities and Constraints

4.01 An overview of the current status of East Usambara's forest, land and human resources is presented here to demonstrate -

1) the opportunities that exist for more effective conservation and more sustainable use of these resources;

2) the constraints that have to be overcome for realisation of these opportunities;

3) the achievements that have been recorded to date through various development programmes that have been initiated in the area.

4.02 The threats to the East Usambara forests have been well documented (IUCN 1989, Owen 1992, EUCFP 1995). The AFIMP inventory estimated the original forest cover of East Usambara mountains to have been over 100,000 ha. By 1986/87 this had been reduced to 23,000 ha, of which little over 5,000 ha were intact forest. The State Forest Reserves and private company forests, particularly those to be incorporated in the proposed Amani Nature Reserve (6,877 ha), are now relatively well protected but village forests on public land are still highly vulnerable. 50% of public forest lands in a 30 sq km area around Amani are estimated to have been cleared between 1954 and 1978. Since then the rate of deforestation has slowed, but pitsawing and clearance for agriculture continue and controls on land use are not rigorously enforced.

4.03 The reasons for this state of affairs are fairly clear. They can be analysed under demographic, agronomic, economic and legal/institutional heads.

(1) Demographic: the population of 54 rural villages in East Usambara at the time of the 1988 census was 113,400, while 13 villages on the Amani plateau had a population of 23,946. This represents not only a high population density (over 300 per sq km in some villages) but also a rapid population growth rate (estimated at 2.6% pa between the 1978 and 1988 census).

The population growth is due not just to natural increase, but also (in the case of Amani Division) to immigration from even more densely populated areas (mainly West Usambara, Iringa, Mbeya, Kigoma) in search of land and employment. A survey in 11 villages around estates of the East Usambara Tea Company (EUTCO) in 1994 showed that 21.2% of household heads had moved in recently from other districts (Ellman 1995), while Owen's survey in 1992 gives a figure of 47% of families coming from outside the area.

The effect of these demographic changes has been to increase pressure on agricultural land and demand for forest products (particularly fuelwood and building materials), but also, perhaps more dangerously, to heighten farmers' feelings of insecurity leading to short time perspectives, especially among immigrants who are unsure of their long term future in the area. This in turn has spun off to an extent on the indigenous population, who see the

authority of their leaders and the strength of traditional controls reduced and hence conclude that, if forest resources will be damaged by outsiders anyway, there is little point in being good conservationists themselves.

At the same time the heterogeneous population has brought with it new ideas and experiences of land use, which present opportunities for introducing more sustainable land management practices provided respect for rules and authorities and long term perspectives can be restored.

(2) Agronomic: the land use system practised by most farmers in East Usambara does not make the most productive use of the land nor is it environmentally sustainable. The major annual crops grown in highland villages are maize, cassava, cocoyams and sugarcane, none of which produce high yields at altitudes of nearly 1,000 masl and on such acid and infertile soils (National Soil Survey, 1986). Many fields are left fallow after 3-4 years cultivation; until recently new land, much of it under forest, would then be then cleared for additional cultivation. The long term crops grown are cardamom, cloves, cinnamon, bananas and pasture for dairy cattle. Cardamom, grown under shade in semi-forested areas, is the highest value cash crop but its yields fall off and it is commonly uprooted after 10 to 12 years; the remaining forest is then cleared for sugarcane or cassava, leading to further deforestation.

In lowland villages maize, sweet potato, groundnuts and in swampy areas rice are widely grown, with citrus and coconut as long term cash crops. Some farmers in both highland and lowland villages have planted trees on field boundaries, mainly *Grevillea robusta* (Mkabera), Albizia schemperiana (Mshai) and a range of fruit trees (see Owen 1992 for a full list of trees planted on farms). Blocks of *Eucalyptus saligna* (Mkaratusi) are widely planted in villages around the EUTCO estates on contract to the tea company. Only a few farmers interplant trees and annual crops on a significant scale.

Despite attempts by the Agricultural Extension Department (through the International Union for Conservation of Nature, IUCN in Amani), few farmers build terraces or contour bunds on their farms, many plant up and down rather than across slopes, and fields with gradients of 50% and above are commonly cleared and cultivated right up to the forest line and down to the stream line [2]. It is extremely lucky that East Usambara soils are so strongly structured and resistant to erosion (National Soil Service, 1986): otherwise there would be much greater damage and loss of topsoil than there is at present.

The fact that environmentally destructive practices are so common seems to be due mainly to difficulties faced in adopting more sustainable alternatives, rather than to simple ignorance of the damage such practices cause to soil fertility and environment [3]. Shortages of land or other

[2] Only "minimum tillage", among recognised soil and water conservation techniques, is widely practiced by the East Usambara farmers, and this is more for saving costs and labour than for conciously conserving soil and soil moisture.

[3] Farmers are aware of the effects of forest on climate. Most long-term residents of East Usambara say that there is now less reliable rainfall, less misty considtions and higher temperatures that when they were young, and they attribute this to deforestation. Whether or not there is truth in this explanation (and clomatologists are divided on the subject), the fact that it is a widely held view means that measures to reverse the trend have more chance of winning popular acceptance.

income-generating opportunities force farmers to clear forest or plant steep slopes; difficulties of access to fertilisers, agrochemicals and high-yielding varieties prevent continuous cultivation of the same piece of land; uncertainties about long term security of tenure make farmers hesitate to plant slow-maturing trees which they may not be around to harvest. Nevertheless, there is now a growing awareness of the importance of soil, water and forest conservation and tree planting, which is well demonstrated in the case study villages (Section 5). Hence there is a pressing need for a more secure land tenure system on village land, and for integrated farm forestry and land use management packages which can be recommended to farmers in both highland and lowland zones.

(3) Economic: an economically productive and sustainable land use system is the key to forest conservation: only if farmers can get an adequate income without encroaching further on the forest will they be in a position and have an incentive to conserve and add to what remains of the forest resource.

Such a system requires:

a) an efficient input supply service: this does not yet exist for the major cash or food crops grown in East Usambara;

b) an effective extension service: Ministry of Agriculture staff, despite support through the IUCN project, are under-resourced and under-motivated;

c) sure market outlets with prompt payment for crops purchased: both sugarcane trucked down to Tanga [4], and spices bought by itinerant traders, have uncertain markets and fluctuating prices.

Three commodities produced in East Usambara do satisfy these criteria, and would fit well into an agroforestry system:

a) stall-fed dairy cattle, promoted with great success by the Tanga Small Scale Dairy Project (TSSDP) in areas close enough to a milk collection point. Fodder crops such as Guatemala grass and Leucaena have a positive effect on soil conservation and fertility.

b) fast-growing timber and fuelwood species such as Grevillea, Albizia and Eucalyptus: seedlings of these and other tree species have for long been distributed to villagers by IUCN and EUCFP, and nurseries are now being established in several villages. Eucalyptus is promoted by EUTCO for supplying fuel to the tea factories, and is welcomed by farmers though the location of planting and effect on soil/water balances need watching carefully;

c) tea promoted by EUTCO as an outgrower crop in villages surrounding the tea estates: tea gives full cover to the soil and regular income to the farmers, but unfortunately the

[4] A proposal has been made to build a sugar factory at Mlesa near Amani. This would provide a guaranteed market for cane, but would also require large quantities of firewood.

price of tea is currently very low and expansion of the project has been put on hold for the time being.

Such enterprises provide opportunities to halt or reverse the trend of forest and environmental degradation, and are central to the strategy developed and tested in the case studies which follow.

(4) Legal: uncertainty over the tenurial status of public lands, and of the rights and powers of village governments to manage and control their forests is a major constraint to village forest management initiatives. The Forest Ordinance, despite much discussion and many drafted amendments, is still not changed from the 1957 version. Public forest lands fall under the jurisdiction of the District Council through the District Forest Officer: the only legal controls are protection of some 23 tree species which may not be cut until they reach a breast height diameter of 173 cm. There are no minimum management standards for village forest land, nor an effective agency to support and supervise the adoption of such standards.

Proposed revisions drafted in 1994 specify the creation of Village or Communal Forest Reserves, managed by the village government on advice from the Director of Forestry. The District Executive Director (DED), it is proposed, can give directives to the village government to ensure sound Land and management of the Forest Reserve. In Muheza District, Environmental Conservation By-Laws, proposed in 1991 but not yet approved, will give added authority to the village government to incorporate agroforestry systems in the management of Village Forest Reserves. Such moves will make it easier for village governments to enforce regulations for sustainable land management, and the sooner the By-Laws are enacted the better.

It should be noted, however, that even in advance of the legislation some District Councils elsewhere in Tanzania have approved by-laws proposed by Village Governments, and have issued title deeds to the Village Governments explicitly including the forest within their boundaries. Babati District Council, to be visited by an EUCFP study team in 1996 (para 6.01), is one which has moved furthest in this respect: eight Babati villages received title deeds in October 1995, and have started to put village forest management plans into action (Wily, 1995). This suggests that, even with the uncertain legal status of village forest reserves, it is possible for village governments to start implementing forest conservation plans provided local political and administrative support is sufficiently strong.

(5) Institutional: the authority of village institutions in East Usambara to promote or enforce agricultural change, as the case studies in the pilot villages will demonstrate, is limited by the financial weakness of the institutions concerned, by uncertainties surrounding village land tenure, and by the heterogeneity of the village community especially in villages with a high proportion of recent immigrants. These factors influence the extent to which village governments will realistically be able to impose discipline on their members without some measure of outside support.

Most of the Central Government's economic servicing institutions in East Usambara are attached in one way or another to "projects" with foreign funding, whose activities in relation to farm forestry and village forest management can be reviewed as follows:

1) East Usambara Conservation and Agricultural Development Project (EUCADEP), supported by EU and IUCN, has 11 agricultural extension officers seconded from the

Ministry of Agriculture, and 3 foresters, 3 community development officers and 13 coordinators appointed to selected villages in Amani Division. Its focus is on village agriculture (distributing tree seedlings, promoting soil conservation measures and agroforestry) and more recently on improving forest management on public lands. Its strategy is to place full responsibility for forest management in village government hands but, without sufficient guidance and back up support and with major funding constraints, it has had limited impact.

2) EUCFP, as is well known, has good experience in its core activity area of protecting and managing State Forest Reserves. Its current moves into village and farm forestry require acquisition of new skills to which this consultancy is designed to make an input; the shift of emphasis also brings with it greater overlap with EUCADEP which needs to be addressed (section 8).

3) The activities of EUTCO and TSSDP in promoting tea, Eucalyptus and fodder crops as part of a mixed farming system were noted in para 4.03(3).

4) The Village Development Project (VDP) is experimenting with the use of trained "village animators" to promote participatory planning and management of resource use by whole villages, sub-villages and smaller groups. EUCDP field staff might in time benefit from exposure to this experience.

Each of these institutions has strengths and weaknesses and different modes of operation. Where they are working in the same field it goes without saying that coordination is needed to avoid overlap and confusion.

4.04 Thus the summary of this analysis shows that -

1) forests on public lands in East Usambara are continuing to disappear, albeit at a reduced rate;

2) farming practices commonly used on village land are, with some exceptions, not environmentally sustainable;

3) there is a growing awareness among farmers and village leaders of the risks of continuing with these practices, and a readiness to reverse the trend by more tree planting and conservation of remaining forests, **provided** the new measures are economically feasible;

4) some of the initiatives taken by various development organisations working in East Usambara have had a limited positive impact in environmental terms, but the opportunities that exist for extending their impact have not been fully appreciated and addressed.

This is the context in which the experience gained in the four pilot villages, summarised in the next section and described in detail in Appendix 7-10, as well as the lessons learned on the study tours described in Section 6, must be viewed.

5 Pilot Village Case Studies

5.01 The villages chosen for case studies of village forest management and farm forestry development, as explained in paras 3.02-3.03, are Vuga and Hemsambia in Maramba Division, Mgambo-Miembeni in Amani Division, Ubiri in Korogwe District and Potwe in Muheza District. The case studies are written up in detail in Appendices 7-10. This section of the report summarises the major features and findings.

5.02 Basic information on the four villages is shown in the table below. The villages are quite diverse, representing a range of socio-economic and environmental situations:

(1) **Vuga and Hemsambia** are two adjacent highland villages in a remote part of northern East Usambara, with a sufficiency of forest and agricultural land but few income-earning opportunities. This has resulted in many young people migrating elsewhere in search of employment. The villages share ownership of a 30 ha block of natural forest which is an important water catchment but has been badly damaged by pitsawing and excessive cutting of firewood and poles for building. Cooperation between the two village governments is not strong, and agreement on a joint forest management plan has not been easy.

Basic Data on Four Village Case Studies

VILLAGE	Vuga/ Hemsambia	Mgambo-Miembeni	Ubiri	Potwe Ndondondo
LOCATION				
-District	Muheza	Muheza	Korogwe	Muheza
-Division	Maramba	Amani	Kwagunda	Bwembera
POPULATION				
-Households	567	240	122	570
-Male	1,510	572	306	1,415
-Female	1,733	531	343	1,659
-Total	3,243	1,103	649	3,134
SUB-VILLAGES	16	10	10	9
LAND AREA (Ha)	10,000 (approx)	618	363	1,500 (approx)
FOREST AREA (Ha)				
-Natural	30	16	3	3
-Planted	-	5	55	-

(2) **Mgambo-Miembeni** is a highland village surrounded by EUTCO tea estates, with shortages of both agricultural and forest land. It is greatly influenced by its proximity to the estates, with an estate workers' camp now an integral part of the village and a large and diverse immigrant population putting added pressure on land, water and forest resources. The diversity of the village population reduces the legitimacy of the village government and makes it difficult for it to enforce unpopular control measures. Mgambo has a 16 ha block of natural forest which has water catchment and ritual significance, but has been badly damaged by pitsawing in recent years.

(3) **Ubiri** is a small and remote highland village hemmed in on one side by EUTCO tea estates and on the other by the escarpment leading to the valley that separates East from West Usambara. Ubiri has virtually no remaining natural forest but a significant area of recently planted Eucalyptus. Farmers have access to land at a range of altitudes down the escarpment; there are ample employment opportunities on EUTCO estates and strong village leadership including both men's and women's groups.

(4) **Potwe-Ndondondo** is a lowland village at the foot of Kwamsambia Forest Reserve on the southern edge of the East Usambara mountains. The Reserve was recently extended by acquisition of part of Potwe's village land. Compensation has been paid both in cash and in land through allocation of part of a nearby sisal estate. Potwe has sufficient farm land but almost no village forest land. Its access to wood sources for fuel and building purposes is severely curtailed. It has ready markets for agricultural produce both in Korogwe (30 mins by bus) and at EUTCO estates (90 mins by foot).

5.03 In Vuga, Hemsambia and Mgambo the main focus of the team's work was to help the village governments draw up plans for conserving their village forest reserves (Mpanga and Handei), while in Ubiri and Potwe the prime objective was to assist the villagers with preparation of farm forestry plans. There might appear to be some contradiction between this and the statement made several times in this report that village forest management must be closely integrated with on-farm tree planting to substitute for reduced access to the village forests. However -

1) Ubiri and Potwe have almost no village forests left, so forest management will only come in later when enough trees have been planted to constitute a village forest;

2) Vuga and Hemsambia attach first priority to saving what remains of Mpanga Forest, and will come later to supplementary tree planting as the second stage of the process (tree planting is, however, included as a component of the forest management plan, and should be too in the Mgambo case when that comes to be pursued).

5.04 The responses of the four villages to EUCFP's intervention, the findings of the surveys and the outcome of the interaction to date, has been as follows:

(1) Vuga and Hemsambia, having themselves taken the first step of requesting EUCFP help for protecting their forest, were positive in principle about the intervention but in practice progress was quite difficult. 4 visits were necessary before an effective meeting with the two village governments was achieved. The reasons for this were:

a) difficulties of co-ordination between two villages separated by 3-4 km;

b) differences in priorities between those of the village governments and those of the EUCFP team;

c) opposition to the plan by some village members who had a vested interest in keeping the forest open;

d) delayed follow up at some stages on the part of EUCFP.

Ultimately, however, a survey of Mpanga Forest was completed, a Forest Conservation Committee was set up, a set of rules governing use of the forest was agreed and forwarded to the DED in Muheza, and a programme for on-farm tree planting and gap and boundary planting was proposed. The boundary of the Forest has been cleared by the villagers. Implementation of the tree planting programme will start in 1996. The case study is described in detail in Appendix 7.

(2) Mgambo-Miembeni proved to be an even harder case to deal with, and preparation of a village forest management plan for Handei Forest has scarcely yet passed the starting post. This is because:

a) the request to EUCFP for assistance in protecting the forest (para 3.02) came some time back from a previous Village Chairman and Executive Officer, and the present occupants of these posts claimed no knowledge of the matter. It therefore appeared that the initiative came from the project not the village, making it more difficult to achieve a collaborative partnership;

b) the heterogeneity of the village population has weakened the authority both of the village government and of traditional controls;

c) a small group of villagers were pitsawing illegally in Handei when the team started work, and the village government appeared powerless to intervene;

d) it was therefore necessary ultimately for the EUCFP forester to confiscate the sawn timber and the pitsaw, creating doubts in the village on whether the project's role is as policeman or guide, and contributing further to the difficulty of moving ahead.

It will be important for EUCFP to continue its activities in Mgambo, perhaps initially adopting a somewhat more authoritarian approach than the participatory line pursued to date, to ensure that the forest is not totally destroyed. Suggestions on how this might be done are in the case study at Appendix 8.

(3) Ubiri was much more welcoming in its reaction to the EUCFP initiative, and this can be explained as follows:

a) absence of village forest, exposure to strong winds on the escarpment, and progressive exclusion from Government Forest Reserves have made Ubiri farmers very keen to plant trees both on their own farms and on village land;

b) they already have good experience of tree planting, with help from both EUTCO and EUCFP;

c) the community is more unified than other villages, with an active village government and women's group that are keen to work together.

6 nurseries have been established with a range of timber and multipurpose tree species, and a programme of tree planting on individual and village land is under way. A 20 ha block of village land has been leased to EUTCO for Eucalyptus planting, and will revert to the village after two harvesting cycles as an addition to the village forest resource. More detailed description and analysis is in Appendix 9.

(4) Potwe was equally welcoming, and it has been possible to make good progress with establishing a farm forestry plan in this village for the following reasons:

a) after their exclusion from Kwamsambia Forest Reserve the farmers have seen more clearly the importance of planting trees in the village;

b) they too have had good earlier experience of EUCFP, having received fairly generous, if somewhat delayed, compensation for the land acquired for extending the Forest Reserve;

c) like Ubiri, Potwe has a respected village government, especially the chairman, and an active women's group, making it relatively easy to organise meetings and collective activities.

A list of 47 farmers wanting to plant trees on their farms in 1996 has been drawn up, 3 nurseries have been established, and great interest has been shown in some of the tree varieties and farm forestry techniques seen by farmers who participated in the study tours (Section 6). The detailed case study is at Appendix 10.

6 Study Visits and Training

6.01 To extend the range of experiences to which the EUCFP foresters and farmers from the pilot villages were exposed, and to make the action plans arising from the consultancy more broadly based, two **study visits** were arranged:

1) to farm forestry and village forest management sites and to the Tanzania Forest Research Institute (TAFORI) in West Usambara from 17-20 October 1995, with 6 EUCFP foresters and 5 farmers from Ubiri and Potwe;

2) to farm forestry, village forest management and ecotourism sites in Zanzibar from 5-12 December 1995, with 7 foresters and 5 farmers from Vuga, Hemsambia, Ubiri and Potwe.

A third study visit to learn from village forest management experiences in Babati District was planned, but could not be fitted in to the period of the consultancy. It will take place in 1996.

6.02 The programmes of the two study visits are at Appendix 11. Reports of the visits have been prepared separately by the foresters who participated (Kijazi et al, 1995, 1996) and need not be repeated here. However, the major issues which arose and their relevance to East Usambara are briefly summarised in this section.

6.03 The West Usambara study tour covered the following:

1) hilltop reforestation, particularly of Chambogo, a 605 ha hilltop encircled by 7 villages to which land on the hillside was distributed in the early 1960s. The hill was forested at the time but was soon cleared for cultivation and became almost bare of trees. Farmers have seen the negative results of this and, with help from the Soil

Erosion Control and Agroforestry Project (SECAP), are trying to repair the damage by planting the hill with various tree species: *Grevillea, Albizia, Croton, Juniperus* spp. This has not been easy with much of the topsoil gone and 7 villages trying to cooperate over a large area: they have now allocated a part of the forest to each village and progress is much better;

2) tree nurseries run by SECAP, TAFORI, individual farmers, women's groups and a primary school (Magila). A variety of species suitable for reforestation and farm forestry use were seen, and were of great interest to the East Usambara farmers: particularly *Grevillea robusta* (Mkabera) as a fast growing hardwood which mixes well with annual crops, and a range of indigenous and exotic trees including *Albizia schimperiana* (Mshai), *Markhamia platycalyx* (Mitaanda), *Cordia africana* (Mringaringa) and *Acrocarpus fraxinifolia*. A full list with their uses is in Appendix 12;

3) soil and water conservation structures: bench terraces and contour strips were seen both in demonstration plots and on farmers' fields. Though interesting to East Usambara farmers, they seem unlikely to be widely adopted because of the relative resistance of most East Usambara soils to erosion;

4) farm forestry plots run by SECAP, TAFORI and individual farmers: a range of timber and fruit tree species was seen interplanted with maize, beans, potatoes, bananas, vegetables, passion fruit and pasture for stall fed cattle (see Appendix 12).

6.04 The Zanzibar study tour took in the following:

1) Government tree nurseries, mainly of *Casuarina equisetifolia* (Mvinje), which is much in demand for the booming construction industry, but including also *Pinus caribbea, Cupressus*, *Acacia* spp, citrus and *Eucalyptus*;

2) farm forestry plots on inhospitable coral soils, with Casuarina, citrus, pawpaw and coconut interplanted with cassava, bananas, vegetables and pasture species;

3) Nature Trails at Masingini and Jozani Forest Reserves, of interest to EUCFP foresters and farmers in the way they try to involve villagers, highly relevant for the proposed Amani Nature Reserve.

6.05 The study tours brought home to both farmer and forester participants the heavy costs of deforestation, seen especially in the overpopulated West Usambara villages, and the difficulty of repairing the damage to the environment once the forest cover has been removed. The specific lessons learned, and how they can be applied in East Usambara forest management and farm forestry programmes, are covered in Section 7.

6.06 At the end of each study tour a **round-up seminar** was held with the participants and representatives of the host institutions, to review what had been seen. This proved very useful, particularly in West Usambara since the risk of similar environmental damage being repeated in East Usambara was very clear. The discussion in Zanzibar was also helpful, although both agro-ecological and socio-economic environments on the island are very different from those found in East Usambara. A seminar on similar lines will be extremely useful after the proposed visit to Babati, since the experience in Duru-Haitemba forest, and

the guidelines for village forest management that are based on it (Wily, 1995), appear very relevant to the situation in (for example) Vuga and Hemsambia.

6.07 Throughout the consultancy every effort was made to expose the EUCFP team, and the farmers in the pilot villages, to participatory planning and management techniques as a form of **on-the-job training**. This covered, for example:

1) participatory village mapping in Potwe and Ubiri;

2) forest transects in Vuga and Hemsambia;

3) individual farm surveys in Potwe and Ubiri;

4) semi-structured interviews with farmers and village leaders in all villages.

Suggestions on how such training could be formalised and extended are made in Section 8.

6.08 It had been planned to hold a **formal training workshop** for EUCFP foresters towards the end of the consultancy, covering the planning methods used and the action recommended. Unfortunately delays in starting the consultancy led to time running out at the end, so in discussion with EUCFP management it was agreed that this component of the consultancy would have to be shelved. It would still be useful to conduct this exercise, drawing on trainers from other institutions as well as EUCFP. This proposal is elaborated in Section 8.

7 Lessons of Experience

7.01 From the experiences gained in this consultancy - of analysing the opportunities and constraints to sustainable village forestry and land management, drawing up management plans in four pilot villages, starting implementation of these plans, studying similar experiences in other parts of Tanzania, and training farmers and staff in participatory planning and management techniques - many important lessons with wider relevance were learned. These are outlined in this section of the report: general issues first and then issues specific to village forest management and farm forestry development.

7.02 **General Issues**

(1) *The extent of the environmental threat is still not widely recognised by East Usambara farmers*. Although the seriousness of the threat to East Usambara's natural resources from deforestation and unsustainable land use is very clear to outside observers, by and large it has not yet been fully appreciated and translated into action by the local population. Thus farmers in Mgambo are still felling trees in Handei and cultivating steep slopes without erosion control measures. This happens even more in other densely populated villages (like Antakai in Amani Division) which have less access to alternative employment opportunities.

Only where natural forest resources have become really scarce, and where pressure on agricultural land is also acute, are farmers and village leaders taking seriously the need for forest conservation and on-farm tree planting. Thus Potwe since its exclusion from

Kwamsambia Forest Reserve, and Ubiri with the added threat of reduced access to Kwamkoro Forest Reserve, are now very eager to plant trees on their land.

Elders in all four pilot villages maintain vehemently that rainfall is less reliable and temperatures are higher now than 30 years ago, and they attribute this to deforestation. Whether or not this is genuinely believed, and whether it has any scientific foundation, is open to question. The fact that it is said, however, provides an opportunity to frighten farmers into adopting environmentally more friendly practices, and this opportunity should not be ignored.

The study visit by Ubiri and Potwe farmers to environmentally degraded sites in West Usambara, particularly Chambogo and Kwamongo Hill, opened their eyes wide to the dangers facing East Usambara if the present trend continues, and to the difficulty of repairing the damage once the forest has gone. More visits to such places by farmers and village leaders are recommended, as well as videos depicting environmental damage and helping people to see further into the future.

(2) *Soil conservation measures are not given high priority by farmers*. Most farmers on the Amani plateau (Ubiri, Mgambo, etc) do not take soil conservation measures seriously, because their soils are well structured and not highly erodible. Thus it would be difficult to persuade farmers in these villages to invest in costly bench terraces, contour strips, etc (costly in terms of labour for construction and of land occupied). It would be easier in villages like Vuga and Hemsambia where bad erosion has already taken place. As a bare minimum, contour planting which has no cash cost should be promoted vigorously in all villages.

Greatest success in installing soil conservation measures has been recorded where income-earning enterprises such as passion fruit or pasture for dairy cattle (seen on two farms visited in West Usambara), or bananas or coconuts (seen on the Village Chairman's farm at Potwe), are planted on the terraces or contour strips. These pay for themselves and for the terraces or strips on which they are planted. Credit arrangements may be needed to enable small farmers to adopt such practices: the VDP Self-Help-Fund could be a suitable source.

(3) *Water conservation measures are taken more seriously*. Most farmers are much more concerned to conserve water than soil, partly as a reaction to the belief noted above that rainfall and mistiness have declined in recent years due to deforestation. Tree planting both in blocks and on farms is catching on at Ubiri and Potwe, as it is in West Usambara and to some extent Zanzibar, primarily for this reason. There is concern that the species chosen should be water-conserving (hence some fear of Eucalyptus spp): this conflicts to some extent with the desire for fast-growing trees which almost by definition have a high water demand. It is probably easier to sell the message of terracing and contouring for water conservation than for soil conservation.

(4) *Secure land tenure is critical both for village forest management and for on-farm tree planting*. It will be much easier for village governments to protect their forests, and for farmers to plant trees extensively on their farms, when they have secure title to the land. This requires enactment of the draft legislation and District Council By-Laws referred to in paragraph 4.03 (4) above, as well as conclusion of the reforms to Tanzania's land law in general which are currently under discussion (Shivji 1995). However, experience of the village governments in Chambogo and Babati, and of many private farmers visited in West

Usambara, shows that a lot can be done ahead of approval of the legislation, given local political and administrative support.

(5) *Strategies for village forest management and for farm forestry development are part of the same thing, but phasing is needed*. Moves by villages to protect what remains of their forests need to be combined with programmes of farm or village tree planting, so that the farmers' reduced access to village forest lands is balanced by development of alternative sources of wood and other forest products. However, one step often has to come before the other: for example, Vuga and Hemsambia will only think seriously about new tree planting when they have secured what remains of Mpanga forest, while Potwe and Ubiri will only have village forest to manage when they have undertaken a lot more new tree planting.

(6) *Development institutions operating in East Usambara would be much more effective if they could pool their resources*. Farmers in all the pilot villages need advice and services in agriculture, forestry, finance, infrastructure, management skills, etc. They would be better served if EUCFP and IUCN in particular came closer together, sharing staff and expertise even if a total marriage is not yet possible. Coordination with EUTCO, TSSDP and VDP is also highly beneficial.

7.03 **Lessons Relating To Village Forest Management**

(1) *There are both costs and benefits in "handing over the stick" for village forest management to village governments.* The principle of giving farmers authority and responsibility to conserve their own village forests, as opposed to control remaining with the local government authority or being taken into EUCFP, makes much sense in terms of cost effectiveness: local people on foot can police forest more cheaply and effectively than Forest Officers with motorcycles or pickups. Experiences at Mpanga, Chambogo and even Mgambo show broadly that the majority of these village populations would like to take on the task, provided they can gain the confidence needed to make it work.

However, experiences in these villages also show that many obstacles exist to effective village forest management. These relate to divisions in the community, the ability of the village government to deal with such divisions, the legal status of the forest, the part played by other institutions involved, and whether or not the villagers have access to alternative sources of forest resources.

It is necessary to assess whether the cost to the project of overcoming these obstacles is more or less than the savings resulting from "handing over the stick" to the village government, before deciding whether the Forest Department or EUCFP should take one hand off the stick, take both hands off, or keep both hands on. The decision will depend on the nature of the likely obstacles, which are elaborated in the following sections.

(2) *Vested interests in the villages often oppose restrictions on forest use.* Every village community has different interest groups. In the case of both Mpanga and Handei Forests it quickly became clear that certain individuals, in or close to the respective village governments, were themselves involved in pitsawing and hence used a range of delaying tactics to prevent the controls on forest use, which the majority of villagers wanted to impose, from going ahead. These tactics are described in the case histories at Appendix 7 and 8.

Some village members said that only an outside authority like EUCFP could bring the vested interest groups under control; agreeing to this would risk defeating the participatory nature of the exercise. If the village government is to retain any credibility it is necessary that such malpractices are brought into the open and resolved, calling if necessary on whichever traditional or political authority is most appropriate to support the village government in the task.

In the case of Mpanga a traditional village elder (Mzee Keka) and the District Commissioner of Muheza are helping to ensure that the necessary disciplinary steps are taken; in the case of Mgambo, despite calls for help to the Diwani, Ward Party Chairman and several village elders the result so far is a stale mate. If illegal pitsawing in Handei Forest, currently stopped, starts agains it will be necessary for EUCFP to take the stick temporarily into its own hands.

(3) *Elected village leadership is often reluctant or unable to discipline its electorate.* Even where the village leaders were not themselves directly involved in forest destruction, many were reluctant to impose controls which would make them unpopular with the powerful interests which were so involved. This was particularly the case in the run up to the October 1995 elections, when the authority of the village governments was not at all strong.

It was also the case in the mixed community of Mgambo, where many village members did not accept the authority of the Village Chairman. It would be necessary in such a situation to find ways of buttressing the Chairman's position or of shaming him into taking the necessary action, but as Appendix 8 demonstrates clearly, this has not so far been possible.

(4) *Local administrative and political authorities should be involved in the planning process from the start to reduce the risk of underhand dealings*. It is a common occurrence for District Council foresters (as at Mpanga) or local political figures (as at Mgambo) to help individual entrepreneurs in their tree cutting activities, even though these run counter to the community forest conservation programme. It is important to involve all such authorities in the planning process from the start, and to keep everything that is going on in the open to reduce the risk of such malpractice.

(5) *The size of the forest management unit is critical in determining the manageability of the forest*. The bigger and more spread out the village population and the village forest, the more difficult the task of village forest management will be. Many of the difficulties encountered at Mpanga stem from the fact that two villages, comprising 16 sub-villages some of them far from the forest, are trying to work together to protect and manage a 30 ha block of forest which, though important to all as a water catchment, is reached easily and was used for firewood etc by only 2 or 3 sub-villages.

In Lushoto District, by contrast, Chambogo forest has been divided into 6 sections with one village responsible for managing each section. Similarly in Babati, Duru-Haitemba Forest is divided into 8 parts and the village nearest to each one manages it (for day to day management such as forest patrols, the sub-village not the village is responsible).

The smaller and more local the management unit, the easier its job will be. However, it may not always be easy to divide a forest into sections if it is historically shared and the owners are unwilling to see it divided.

(6) *Attempts to "force the pace" of village forest management may undermine the participatory nature of the process*. The sequences of events at Mpanga and Handei, recorded in Appendix 7 and 8, show the difficulty the EUCFP team experienced in arranging meetings with the governments of Vuga, Hemsambia and Mgambo villages and making progress with the forest management plans.

In Mgambo's case this partly reflects deliberate attempts by some people to undermine the process, but it also results from the priorities of the villages being different from those of EUCFP. Thus in October 1995 Vuga and Hemsambia were more interested in the national election campaign than in conserving Mpanga Forest; they could not of course be forced to put the forest higher on their list of priorities simply to meet the project's or the consultant's deadline!

Ample time must be allowed for building trust, rearranging cancelled meetings etc, so that the village's initiatives are **supported** by the project and not **directed** or taken over by it. The more this process can be decentralised, eg depending on the Vuga or Maramba forester rather than on Tanga-based staff for supporting Mpanga forest management, the more easily can this objective be achieved.

(7) *Villagers' previous experience with EUCFP foresters may make them mistrustful of the staff in their new role as village guides*. Many farmers, particularly in villages close to the proposed Amani Nature Reserve, have earlier encountered EUCFP staff only in their role as forest policemen or acquirers of village land for Forest Reserves (for which, at the time of the consultancy, compensation had not yet been paid). There was, therefore, some suspicion in Mgambo, for example, that the expressed aim of the project - to help the village to manage its own forest more sustainably - might actually be a front for later compulsory acquisition of Handei as a Government Forest Reserve. It was difficult to convince people that this was not the case.

The best way round this problem may be to have two groups of EUCFP field staff, one to act as policeman and one as guide. Each category would need appropriate training, as the skills and attitudes needed for the two functions are quite different (see para 8.02(3)).

It may not always be feasible to follow this line of action, though it would become easier if the merger of EUCFP and EUCADEP, long talked about and perhaps more of a possibility now than in the past, should ever come about. If not, clear public explanation of the two roles of the foresters is the only way of tackling a difficult problem.

(8) *Forest management rules must be flexible enough to be implementable, but they should not leave open windows which could lead to misuse*. The draft by-laws insisted on by Vuga and Hemsambia are extremely rigid, permitting virtually no use of Mpanga Forest for five years (not even mushroom collection is allowed; the only exception is controlled access to traditional medicines and sacrificing site). Chambogo Forest Rules are similar.

The reason given by the farmers for adopting such rigid regulations is their fear that, if even a small window is left open for people to enter the forest (eg to collect dead wood for fuel), it may be pushed wider open allowing a flood of more destructive uses. On the other hand, if controls are unrealistic and unnecessary, they are likely to be ignored putting the rules as a whole into disrepute.

It may be necessary to start with tight controls, but it is advisable to move as soon as possible towards a gradation of regulations, some uses being allowed without permit, some requiring verbal or written permission, some being totally banned. This is the model used in villages in Babati (Wily 1994), and is the one suggested initially by the team at Mpanga. The proposal was not accepted at first, but may well come in at a later stage.

7.04 **Lessons Relating To Farm Forestry Development**

(1) *Farmers in East Usambara are becoming increasingly interested in planting trees on their farms, especially where shortages of fuelwood and building materials are acute*.
Ubiri farmers in their almost treeless environment, and Potwe farmers following exclusion from their forested hillside, are becoming very keen to plant trees on their land. They have until recently been most interested in fast growing species like Eucalyptus and Grevillea, but are now looking for a wider range of species - indigenous and exotic, timber and fuelwood, fruit and fodder, nitrogen-fixing and multipurpose - to spread their risks and widen the benefits (see list of appropriate species at Appendix 12).

(2) *The environmental benefits of tree planting have not yet been widely appreciated in East Usambara, though the pattern is beginning to change*. Tree planting for purposes of soil conservation is not given high priority in any of the pilot villages, since the soils have so far shown few signs of erosion. However, the value of tree planting for water conservation and for stemming or reversing climatic change is becoming more widely recognised: the Eucalyptus forests which Ubiri farmers have planted on their bare hillsides are pointed to with pride. There is also recognition of the importance of retaining or replanting suitable tree species in water courses, on steep slopes and on shallow soils. This message was vividly reinforced by visits to West Usambara and Zanzibar.

(3) *Where land is scarce, most small farmers can only allocate areas on the boundaries of their fields for tree planting.* In such cases, as at Ubiri and Mgambo and many locations in West Usambara, farmers are interested in trees which do not compete strongly with crops for soil moisture, nutrients or light. Grevillea, Calliandra, and the nitrogen-fixing plants Leucaena, Gliricidia and Albizia, are good examples.

(4) *Only wealthier farmers are able to consider planting large blocks of trees, and these are mainly for commercial purposes*. Eucalyptus plantations at Ubiri and teak at Potwe, for example, are mainly planted by large farmers for sale to commercial buyers such as EUTCO.

(5) *There is little tradition of interplanting trees with annual crops on farms in East Usambara, but this trend seems likely to catch on soon as it has in West Usambara and Zanzibar*. Several of the farms visited in Lushoto District have *Grevillea*, *Calliandra* and *Albizia* interplanted with maize, beans, potatoes, vegetables and Guatemala grass for dairy cattle. This model has immediate application in villages like Mgambo, Potwe and Mpanga, where an intensive, multiple-cropping land use system is needed to make best use of scarce resources.

Combinations of interplanting trees and annual crops with surface mulching, composting and other water-conserving and soil-improving techniques are almost unknown in East Usambara. Only minimum tillage, among such techniques, is commonly practised. In parts of West Usambara and Zanzibar where more costly or laborious soil and water conserving methods of cultivation have been adopted, it is usually in association with a high value cash crop which

covers the costs of the labour and materials involved. Demonstrations of the feasibility of such innovations in East Usambara would be useful.

(6) *Indigenous tree species are very attractive in principle, but their establishment presents certain problems in practice*. Most indigenous hardwoods such as those listed in Appendix 12 are very slow maturing (up to 30 years before a sizeable log can be harvested), and this presents a major disincentive to planting and maintenance. Small farmers cannot afford to plant these species on more than a small area of their farms: they need a mixture of fast and slow-growing tree species.

The difficulties of germinating and establishing some indigenous tree species are a further disincentive to widespread adoption. Even TAFORI nursery has problems in establishing some species (such as *Acrocarpus fraxinifolia*, whose seeds have to be boiled and cooled before germination), while in one East Usambara village bordering on Ubiri (Kwemwewe), where a massive indigenous tree planting campaign took place in 1994, almost all the seedlings planted were destroyed by fire or smothered by weeds due to neglect.

To avoid such disappointments it is best to advise farmers to plant only small areas of trees which they have the capacity and the incentive to maintain, to establish well supervised nurseries from which only well grown seedlings are distributed, and to make available a mixture of species with varying uses and maturation rates.

(7) *Official prejudice against certain exotic tree species, especially Eucalyptus, reduces the choice available to farmers*. Eucalyptus has in some circles become a "politically incorrect tree", due to its reputation for drying out water sources or lowering groundwater levels, suppressing undergrowth and spoiling farm land for future cropping. While there is a strong foundation for these fears in some contexts, the rapid growth rate, easy coppicing and high fuelwood value of Eucalyptus make it the preferred species of many farmers. It clearly has a place on land unsuited for other uses, where rainfall is adequate and water sources are not close by.

(8) *Tree nurseries are best run by individuals, small groups of farmers, women's groups or schools, not by the whole village community*. Earlier experiences with village nurseries and woodlots have made farmers sceptical about collective endeavours where no individual or small group is responsible. Nurseries managed by farmers, women's groups or schools as at Ubiri and Potwe bring many advantages: the nurseries are close to the planting sites, the owner/operators learn the process of establishing trees, they value the seedlings more, and they have an opportunity to sell plants surplus to their own requirements as a small business.

(9) *Tree seedlings are more likely to be well cared for if they are sold to farmers than if they are distributed free of charge*. It is common experience that assets which are purchased or home-produced, especially by poor people, are more highly valued than free handouts. Potwe and Ubiri farmers received tree seedlings free from EUCFP in the first year, but will be expected to pay for them thereafter. When they establish their own nurseries, they get the seeds free and the polythene sleeves at a subsidised price.

This policy is quite sensible, attracting farmers to plant initially but encouraging self-reliance as soon thereafter as possible. It would be preferable if all the institutions that promote tree planting followed the same policy: IUCN sells seedlings throughout, albeit at a subsidised

price; SECAP distributes seedlings free, as do EUTCO (Appendix 9, Annex 3) and two other organisations, Kambai Forest Conservation Project and Four H.

There are also differences in the strategies proposed by different projects for distribution of seedlings from farmer or village-run nurseries. Ubiri farmers' groups say that if they have surplus seedlings in their nurseries they will give them to their friends. In West Usambara SECAP buys seedlings from village nurseries and distributes them free to farmers, often in the same village. This makes it impossible for the nursery owners to sell seedlings to farmers, and thus unnecessarily undermines a potentially useful small business.

(10) *Extension advice to farmers on farm forestry methods is most effective when agriculturalists and foresters work together, are trained in each other's subjects, and avoid the "no man's land" that sometimes exists between the two disciplines*. Where trees have been planted in the pilot villages their establishment has, by and large, been well done but other opportunities for improving the land use system have not yet been grasped. Selection of suitable mixes of trees and annual crops, and integration of soil and water conservation techniques in to the farming system is needed in all four sites.

This requires a combination of agricultural and forestry skills. In Vuga and Hemsambia the EUCFP forester is working with the local Ministry of Agriculture extension officer on formulation of a tree planting programme. In Mgambo the IUCN agriculturalist from the next village (Misalai) runs a nursery from which tree seedlings would be available to Mgambo farmers whenever they show interest in tree planting. Such collaboration between agriculturalists and foresters, including training and exposure to each other's discipline, is an important part of the farm forestry programme. It should become easier to implement in East Usambara if EUCFP and IUCN projects are merged or at least come closer together.

8 Recommendations for Future Action

8.01 Based on the lessons learned by the team in the course of the consultancy, as detailed in Section 7, a series of recommendations for practical follow up can now be made. These include:

1) general proposals on information flows, participatory planning methodologies, support services, training and policy formulation;

2) specific proposals for future EUCFP activities in village forest management and farm forestry development, including carrying forward the village forestry and land management plans prepared in the four pilot villages.

These proposals relate to the expected outputs of the consultancy terms of reference (Appendix 1, Section 5). As in Section 7, recommendations on general issues will be made first, followed by recommendations specific to village forest management and farm forestry development.

8.02 **General recommendations**

(1) Information Campaigns: given the low level of appreciation of the extent of the threat facing their environment among East Usambara farmers, at least as far as taking practical action taken to counter these threats is concerned, a major information campaign should be mounted to bring home more clearly to farmers, Government officials and local leaders the danger of allowing current trends in forest clearance and unsustainable land use practices to continue.

This campaign should take the form of village seminars, video and film shows, extension materials, field days and farm visits. The focus should be on:

a) the effects of over-population and forest clearance on land and water resources, local economy and people's livelihoods. West Usambara, socio-economically and agro-ecologically similar to East Usambara, is the most telling example of what will happen in East Usambara if current trends are not halted or reversed;

b) the risks of soil erosion, land slips and flooding on bare land. The dramatic examples of the 1992 floods in Mlalo (near Lushoto), and of road deterioration in Amani and Kigongoi Divisions, are good illustrations of these risks. It is important to overcome the false feeling of security that most farmers in East Usambara have because of the relative stability of their soils;

c) climatic trends, popular perceptions of these and of their causes. The rainfall and maximum and minimum air temperature patterns reviewed in Chapters 11-14 of IUCN 1989 (Appendix 13) need to be extended to more locations and collected more accurately as a basis for future monitoring and information campaigns;

d) the opportunities that exist for countering the risks and reversing the trends. The points covered in Section 4 on demographic, agronomic, economic, legal and institutional issues could be used as the basis for a discussion on these opportunities;

e) the practical action that has been taken to counter the trends in specific cases. The plans drawn up in the four pilot villages, plus the experiences gained in the study visits to West Usambara and elsewhere, would provide useful material for illustrating this part of the information campaign.

(2) Study Tours: visits to other locations where comparable trends have been noted are a very useful way of spreading information and bringing in new ideas. Several points can be made on planning and implementing such visits:

a) a mixture of farmers and officials (agriculturalists and foresters) is probably the best composition for a study team. The farmers ensure that discussions are practical, and they take back relevant lessons directly to their fellow villagers; the officials bring in more specialised analysis and help to guide the discussions. 10-12 participants per study tour is the maximum number that allows everyone to contribute and gain fully from the experience;

b) selection of both farmer and officer participants is critical. The major criterion for selection should be the ability to understand the relevance of what is seen, and to transmit the information to others on returning home;

c) the places visited should have sufficient socio-economic and agro-ecological similarity to East Usambara for the experience to be relevant. The West Usambara visit was ideal in this respect, and more such visits should be arranged for other farmers and foresters. Babati appears to be equally appropriate, especially for village forest management;

d) programming the study tours over one week, with a mix of visits to farms and institutions seems ideal. Both the West Usambara and the Zanzibar study tour programmes were well designed in this respect;

e) the study tours should broadly focus on the following:
   - the situation in each area visited relating to demography, land and forest use, local economy and institutions, historical trends, comparison with the situation in East Usambara;
   - the nature and extent of past and present environmental damage, reasons for the damage, its relevance to East Usambara;
   - the steps that have been taken to raise productivity, conserve resources, repair past damage and prevent further degradation: the effectiveness, cost and applicability of these measures to East Usambara;
   - additional opportunities that exist for sustainable forest and land use, repair of past damage and prevention of its repetition: the costs and benefits of these measures and their relevance to East Usambara.

   Wherever possible instances of **successful** forest management and farm forestry should be visited. Though lessons can be learned from failures too, too many of them can be very discouraging to visitors.

f) follow up seminars and discussions when the participants return home are essential. These should bring together all the farmers and EUCFP staff who took part in the study tour, and village representatives who can benefit from and contribute to discussions on what was seen. This ensures that the lessons learned by the study tour participants are passed on to others, and raises the chances of appropriate innovations being adopted.

(3) Training Needs: EUCFP foresters, as well as EUCADEP agriculturalists and village co-ordinators should they become part of the same family, need training in three fields:

a) **Participatory planning methodologies**: the best way for project staff to become familiar with PLA methods is through practical experience of using them in the field. EUCFP foresters, ideally working with EUCADEP agriculturalists, should continue using the methods detailed in Appendix 6, both in the four pilot villages where planning has already started, and in the other pilot villages targetted in Phase II of the project. Regular workshops should be held, with field staff coming together to review the experience gained, as suggested above in relation to the study tours.

b) More formal training courses in PLA techniques are organised by a number of other projects operating in Tanga Region and elsewhere in Tanzania: EUCADEP, VDP, Tanga Coastal Zone Conservation and Development Project, Lindi and Mtwara Rural Integrated Project Support Programme (RIPS), Kilosa District Development Support Project, etc. Requests should be made to these institutions for EUCFP staff to participate in some of their courses to see how useful they are. There is no point in EUCFP duplicating the activities of other projects by trying to set up such training courses itself.

c) **Farm forestry techniques:** many EUCFP foresters need training in agriculture and agricultural extension methods to enable them to become effective agroforestry guides, while EUCADEP agriculturalists and village co-ordinators need training in forestry techniques to fill the no-man's land between agriculture and forest science. The best place for such training is likely to be the International Centre for Research in Agroforestry (ICRAF) in Nairobi, but further investigation is required.

d) **Participatory forest management and advice:** the conflict between the traditional role of the forester as policeman and the new role as the villagers' guide has been mentioned (para 7.03 (7)). Ideally this conflict should be resolved by splitting the two roles between two individuals, but if this is not feasible training of forest policemen in participatory management techniques is needed. The points noted above regarding acquisition of skills in participatory planning methods apply equally to training for participatory forest management.

(4) Selection and Use of Participatory Planning Methodologies: the most useful PLA methods in the context of village forest management and farm forestry development are those covered in Appendix 6, namely semi-structured interviews, triangulation, farm and forest transects, seasonal calendars, time frames and Venn diagrams.

There are numerous source books on PRA and PLA methods, such as IIED (1995), RIPS (1993), IIED/SCF (1991), etc, details of which are given in Appendix 13.

(5) Support Services: villagers need three different types of support service for planning and implementing village forest management and land use plans -

a) **advice on tree planting and village forest management:** this should be decentralised to as close to the village as possible. Survey assistance for demarcating the boundaries of forests to be managed by a village should be included;

b) **supply of materials,** particularly tree seedlings or seeds and polybags for village nurseries. EUCFP foresters should be responsible for this function, sourcing the materials as close as possible to the point of use, and charging farmers as near to the actual cost price as possible to ensure sustainability;

c) **finance for purchase of the materials required.** Five year budgets should be prepared as in the case studies at Appendix 9 and 10. Possible sources should be identified including EUCFP itself, EUCADEP, the VDP Self Help Fund, environmental NGOs and rural banks or savings and credit societies.

(6) Legal Reforms: enactment of the reforms proposed to the 1957 Forest Ordinance, as well as the Muheza District Land and Environmental Conservation By-Laws proposed in 1991, are essential to effective long term village forest management. EUCFP should use whatever influence it has at its disposal to hasten the enactment of these reforms. Case studies showing the problems which arise from legal uncertainties surrounding land tenure and village government powers would be helpful as lobbying material.

Meanwhile village governments which have serious forest management plans should be helped to obtain title deeds to their forest lands, and to get District Council endorsement of their forest management by-laws within existing legislation.

(7) Institutional Collaboration: to avoid the confusion that arises from many different projects working in isolation on village forest management and farm forestry development, often with conflicting policies and wasteful duplication of efforts, EUCFP should promote the closest possible co-operation between projects operating in these fields.

If at all feasible EUCADEP should be merged with EUCFP, and close coordination should be maintained with EUTCO, TSSDP, KFCP and VDP. One joint Steering Committee for all projects would be ideal. If this is not feasible, at least representatives of each project should attend the other projects' Steering Committee meetings as observers.

8.03 **Recommendations on Village Forest Management**

(1) Integration with Farm Forestry Development: although forest management and farm forestry are treated separately here because there are certain issues that are specific to each, the two must be viewed as component parts of an integrated whole. One component may start before the other (as in the case studies covered in this report) but an essential part of managing a village forest should always be planting trees on farms or other village land. This ensures:

a) that villagers have alternative sources of wood and other forest products, to substitute for those which they want to conserve in their natural forest land;

b) that a "mini-catchment" approach to land use is adopted, including sustainable use of all the forest, land and water resources available to the village.

(2) Completion of Forest Management Plans in 2 Pilot Villages: management plans for the two village forests that were taken as pilot projects in the consultancy should be completed, their implementation supported and the impact of EUCFP's involvement closely monitored and documented. The following specific steps are needed:

a) **Mpanga Forest:**
- responsibility for supporting the Forest Conservation Committee should be decentralised to the Maramba and Vuga foresters to facilitate rapid and frequent follow-up;
- the draft Forest Management Rules should be presented quickly to Muheza District Council for adoption as Village By-Laws;
- pitsawing in Ntuza should be stopped instantly with the help of the District Commissioner;

- the boundaries of Mpanga Forest should be maintained and patrolled by the villagers;
- tree planting and other soil and water conserving technologies should be pursued on village land by the EUCFP forester at Vuga working with the Agricultural Officer at Daluni.

b) **Handei Forest:**
- EUCFP foresters at Kwamkoro should keep a close watch on the situation at Handei, to ensure that further damage to the forest is prevented;
- further efforts should be made to convince the Village Government and local interest groups to accept EUCFP's offer of assistance in a participatory forest management exercise;
- support for village and on-farm tree planting in Mgambo should be intensified, by EUCFP foresters working closely with the EUCADEP agriculturalist at Misalai;
- at the first sign of resumption of pitsawing or other environmental malpractice in Handei, the heavy hand of the EUCFP forest policemen should be applied without delay.

(3) Future EUCFP Ventures in Village Forest Management: any further ventures by EUCFP into participatory village forest management should satisfy the following basic criteria:

a) EUCFP's intervention should be in response to a clear request made by a substantial proportion of the population of the village or villages concerned. If the initiative is primarily that of EUCFP, imposed on the village community or responding to an "orchestrated request", it is unlikely to be successful;

b) the location of any new venture should be one where EUCFP is confident that it has the staff and resources needed to service the endeavour effectively. Participatory forest management is a staff-intensive activity. If logistical and resource constraints mean that, realistically, EUCFP will be unable to allocate competent staff, vehicles and resources to work **regularly** with the village community and for **substantial periods of time**, it is probably better not to take on the additional challenge until the staff and resource situation improves.

(4) Forest Management Planning Strategy: the strategy outlined in Appendix 4 should be followed:

a) for surveying the forest with the villagers and identifying the use currently made of it and the threats to its conservation;

b) for assessing the opportunities for sustainable management of the forest and determining the most appropriate mechanism for grasping these opportunities.

A more comprehensive treatment of the participatory planning strategy developed in Babati District for "Helping Villagers Manage Their Own Forests" is in Wily 1995. This should be studied and adapted to East Usambara conditions following the proposed study visit to Babati in 1996.

(5) Forest Management Unit: the unit for village forest management should be as small and as close to the forest in question as possible. A sub-village is usually a more effective management unit than a whole village; if more than one village is involved the management task becomes even more complicated. Wherever feasible, forest owned by a whole village or more than one village should be divided into sections for management purposes, each section being managed by the local sub-village community.

(6) Forest Management Rules: the village should be encouraged to adopt realistic regulations for managing the forest, including graded access for a range of uses, penalties for infringement of the rules, and procedures for establishing substitute forest resources as detailed in Appendix 4 and 5. One example of a set of forest management rules is in Appendix 7. EUCFP should help the village government to get its rules accepted by the District Council as Village By-Laws.

(7) Time Scheduling: sufficient time should be allowed for building trust between EUCFP foresters and the village community, rearranging cancelled meetings, surveying forest boundaries, pursuing by-laws, etc. Within reason the priorities and timetable of the village government should be followed, avoiding attempts to "force the pace" to meet EUCFP targets or deadlines. EUCFP's role should be to support the village initiative, not to direct it or take it over. This will become much easier if the EUCFP input is decentralised, and is not dependent on people coming in from a distance.

(8) "Wielding The Stick": although the village government should in principle be fully in control of managing its own forest, if there are doubts about its sincerity or competence it should be made clear to the village community that, should this authority be misused such that the forest resource is in danger, EUCFP will not hesitate to "wield the big stick" in the interests of ensuring that the forest is not destroyed.

A delicate balance has to be found between participation and control in the relationship between EUCFP and the village. Using the analogy of "handing over the stick" from EUCFP to Village Government, EUCFP should not take both hands off the stick unless it is confident that the forest is safe in the village's hands.

(9) Separation of Policing and Guiding Roles: to avoid the misunderstandings and conflicts that may arise from the above, as far as is possible EUCFP should have one category of staff policing the forest and another guiding the villagers in forest management. Otherwise it is difficult for villagers to know which hat the forester is wearing at any particular time.
If it is not possible to divide the two roles between two people, careful orientation and training is needed to enable one person to perform both roles.

8.04 **Recommendations on Farm Forestry Development**

(1) Integration with Village Forest Management: the principles outlined in paragraph 8.03 (1) apply here also. Village tree planting and sustainable land management should be seen as integral parts of village forest management, though they are needed even when the village has no forest left to manage.

(2) Completion of Farm Forestry Plans in 2 Pilot Villages: the farm forestry planning process initiated by the team in the pilot villages of Ubiri and Potwe should be completed, implementation of the plans should continue to be supported, and the impact of EUCFP's

involvement should be monitored and documented. The following steps are needed at both Ubiri and Potwe:

a) the 1996 tree planting and nursery establishment programme agreed between the team and the two villages should be intensively supervised and supported;

b) the five year planting and development programmes discussed with the two villages should be agreed and costed by the end of the 1996 planting season, and sources of the materials and funds required should be sought;

c) a start should be made on linking on-farm and village tree planting to broader improvements in land use practices: soil and water conservation measures, inter-cropping, mulching, etc. Care should be taken, however, not to make the extension message so complex that it becomes incomprehensible and unimplementable.

(3) Future EUCFP Ventures in Village Forestry and Land Use Planning: similar criteria to those listed under new ventures in village forest management (para 8.03 (3)) should determine EUCFP's moves into new villages for farm forestry development:

a) the intervention should be in response to a clear request from the farmers for help with village tree planting. This is much easier to find than requests for help with village forest management;

b) EUCFP should not take on new villages unless it is confident that it can service them well. Otherwise there is a risk of raising expectations which are then disappointed. EUCFP's ability to respond and to service village requests will be greatly enhanced if access to EUCADEP staff and resources becomes possible.

(4) Farm Forestry Planning Strategy: the planning strategy outlined in Appendix 5 should be followed in order to:

a) survey the village's current sources of fuelwood, building poles, timber and other forest products, and assess the farmers' need for and experience of on-farm tree planting;

b) assess the sustainability of the current land use system and see what part agroforestry techniques can play in contributing to raised productivity as well as soil and water conservation;

c) identify new opportunities for sustainable land use management, and determine the most appropriate mechanism for extending these opportunities to farmers.

(5) Selection of Tree Species and Planting Locations: a range of different tree species should be promoted for a variety of uses: fuelwood, building poles, timber, food, fodder, shade, medicines, nitrogen fixation, soil conservation, water retention, etc.

A balance should be encouraged between species with different characteristics: fast and slow maturing, indigenous and exotic, water demanding and drought tolerant, suitable for inter-cropping, boundary planting, block farming. A list of tree species suitable for East Usambara conditions is at Appendix 12.

(6) Seedling Distribution: tree seedlings should for preference be sold to farmers, wherever possible at the real market price, so that they value and look after them which they are less likely to do if the seedlings are distributed free. If it is necessary to subsidise the price initially in order to attract farmers to the scheme, this should be for no more than one year.

Other institutions distributing tree seedlings to farmers in East Usambara should be encouraged to follow the same policy if possible.

(7) Tree Nurseries: as soon as possible nurseries should be established in villages by villagers, so that the seedlings are produced close to the planting sites, and the owners gain experience of nursery management and value the seedlings more highly.

Individual farmers or small groups of women or men, as well as schools, are more suitable as owners of nurseries than whole villages. They can sell plants surplus to their own requirements as a small business.

(8) Trees in the Farming System: any opportunities for using tree planting as a way of improving other components of the land use system, or vice-versa, should be encouraged. For example:

a) planting fodder trees (Leucaena, Gliricidia, etc) on terraces or contour strips may be a way of helping farmers to cover the cost of the terraces and thereby adopt soil conservation measures which they would not otherwise consider;

b) planting shade trees such as Grevillea between rows of coffee or high value fruits or vegetables, or trees such as Cedrela as living stakes for vines of black pepper, may be a way of getting trees into the ground with a secondary purpose in mind.

However, care should be taken not to make the package of innovations too complex or too costly, such that neither the farmer nor the extension worker can understand or afford it. It is normally more effective to bring in one or a few innovations at a time, and to proceed sequentially.

(9) Farm Forestry Extension and Training: innovations such as the above need a combination of agricultural and forestry skills. EUCFP foresters should work closely with Ministry of Agriculture extension staff, and each should receive training and exposure to the other's discipline.

9 Conclusions and Acknowledgements

9.01 This short consultancy assignment has only made a start on tackling the constraints and opportunities for sustainable Village Forest Management and Farm Forestry Development in East Usambara. The writer hopes that the plans prepared in the pilot villages, together with the planning guidelines and recommendations for future action made in this report, will make a positive contribution to forest conservation and sustainable land use management in East Usambara communities.

9.02 The assistance given by the EUCFP team, by the farmers and officials in the four pilot villages, and by all those encountered in the course of study visits, research activities and field investigations, is gratefully acknowledged.

Antony Ellman
30 December 1995

Appendix 1

TERMS OF REFERENCE FOR CONSULTANCY ON

PARTICIPATORY VILLAGE FORESTRY PLANNING AND MANAGEMENT

Post Title: **Participatory Village Forestry Management Consultant**

Duty Station: Tanga, Tanzania

Duration: Maximum 90 days (three months)

1. Background

The East Usambara Catchment Forest Project (EUCFP) is working to towards effective conservation of forests in the East Usambaras, for preservation of biological diversity, and promotion of sustainable catchment forestry and land use management for the benefit of the local and the global communities. The Phase II of the EUCFP which started in February 1995 is implemented by the Forestry and Beekeeping Division with joint financial support from the governments of Tanzania and Finland and technical support services provided by the Finnish Forest and Park Service.

During Phase I of the EUCFP it became apparent that the local communities need to be fully involved in the conservation and management of the forests, whether reserved or un-reserved if the conservation objectives of the project are to be achieved. Two project activities identified in Phase I of EUCFP have been given high priority in Phase II of the project:

1. Management by villagers of pilot catchment forests on village lands; and

2. Adoption of farm forestry practices, both for soil conservation purposes and to provide alternative income earning opportunities to reduce dependence on natural forests.

A consultancy is required for planning these project activities with villagers and government staff, for developing and documenting participatory planning and implementation procedures, and for training project staff in appropriate participatory planning and management techniques.

Requests for assistance with protecting and managing village forest reserves have been received by EUCFP from Vuga, Hemsambia, and Daluni Kisiwani villages close to Mpanga Forest in Maramba Division, and from Mgambo and Misalai villages near the Handei Forest in Amani Division. Although these requests appear to be aimed primarily at controlling incursions by pitsawyers from outside the district, nevertheless they provide an opportunity for promoting village management of public forest lands which could establish a model for self regulation of forest use in East Usambaras.

Two of the villages selected for pilot Farm Forestry activities will be included in the consultancy. Potwe Ndondondo, where land was surveyed to be included in the proposed Amani Nature Reserve and where crop compensation estimates are very high, represents a

rather traditional village affected by forest reserves expansions. Ubiri represents a village with traditional population mixed with tea estate labourers. It is also a village where plans for tea and tree planting have been discussed and developed during the Tea Outgrower feasibility study conducted by Anthony Ellman and commissioned by the East Usambara Tea Company (EUTCO).

It is proposed the consultancy be undertaken by Mr. Anthony Ellman, CDC Agriculturalist currently attached to EUTCO. The consultant would work under the supervision of the EUCFP project management closely with a team of EUCFP staff. The EUCFP team would tentatively consist of Steven Mmasi, Matiko Wambura, Mwanaidi Kijazi, Kelvin Mndeme, Shedrach Mashauri, John Matukuru, Francis Patrick

2. Objectives

The objectives of the consultancy are as follows:

1. To analyse the opportunities and constraints related to village forestry and land management in the pilot villages;
2. To assess the appropriateness of different methods of addressing these opportunities and constraints;
3. To develop models for participatory village forestry planning and management; and
4. To train EUCFP project staff on issues relating to the above objectives:
    - on the job,
    - through study visits
    - through formal training sessions

3. Tasks

The consultants tasks working with the EUCFP team will be as follows:

(a) Survey and analysis of opportunities and constraints in village forest management

The team will analyse opportunities and constraints to ensure that the forests are managed by the village authorities in a manner which is both sustainable and replicable elsewhere in the District. For the task collection of the following information is required:

1. what natural resources exist in the public forest lands in question?
2. how are these resources currently used, and by whom?
3. what is the nature of the threats to conservation of the public forests?
4. what knowledge and experience of farm forestry practices already exist among the village populations concerned;
5. what innovative agro-forestry practices can be identified which are both technically feasible and of interest to the populations concerned.
6. what are the legal and institutional constraints to effective village forestry conservation and management.

(b) Formulation of village forestry and land use plans

In collaboration with the village governments concerned assist the village in the development of forestry management planning procedures and in the formulation of village forestry and land use plans. Specifically looking at following issues:

1. what plans do the village governments have in mind for protection of their forest resources?
2. what is the legal and institutional framework within which the village plan has to operate?
3. what additional inputs or controls are required for implementing these conservation plans?
4. how would these inputs be best administered by and for the benefit of the village communities concerned?

(c) Study visits

The consultant will participate in the planning and organisation of study tours to see village forest management and farm forestry practices used e.g. in the LAMP-project in Babati and Singida, the FBD village forestry planning in Musoma, and the village forest management work in Zanzibar.

(d) Training

The consultant will assist in training EUCFP staff on the job in the process of working with villagers in the development of village level forest and land use plans.

In collaboration with EUCFP project management and others the consultant will also develop and implement formal training sessions on participatory working methods. The formal training should draw on the experience of other projects and individuals working in Tanga Region, e.g. the VDP, IUCN, J.Kessy, the Kambai Conservation Group and the Tanga Region Coastal Zone Conservation and Management Project.

(e) Documentation and reporting

The consultant working closely with the EUCFP team members will document these village forestry planning and management, and farm forestry experiences in a form that can be used for training of farmers and project staff, and which will be useful for forest conservation and utilisation elsewhere in the country. The final Village Forestry and Land Management Plans will be presented both in Kiswahili and English.

4. Work programme

Activity	Time needed
Survey and analysis	3 weeks
Plan formulation	2 weeks
Study visits	3 weeks
Training workshop	2 weeks
Documentation	2 weeks

5. Expected outputs

1. Four Village Forestry and Land Management Plans;

2. A plan for future EUCFP activities in Village Forestry Management;

3. Proposals for selection and use of participatory planning methodologies; and

4. Recommendations on support services needed by villages for the preparation and implementation of village forestry and land use plans.

The Consultant will prepare a report on the consultancy to be submitted to the EUCFP by 31 December 1995.

Appendix 2.

WORK PROGRAMME

17.8.95-17.9.95	Preparatory work, reading project documents, drawing up programme with EUCFP staff.
18.9.95-23.9.95	Drafting Village Forest Management and Farm Forestry Guides; introductory meetings with Governments of Potwe Ndondondo, Vuga and Hemsambia Villages.
25.9.95-30.9.95	Introductory Meeting with Ubiri Village Government; field surveys in Potwe Ndondondo; follow-up meeting at Hemsambia (abortive).
1.10.95-7.10.95	Field Surveys and Village Mapping in Ubiri; preparations for West Usambara Study Tour.
9.10.95-15.10.95	Planning West Usambara visit; drafting Potwe and Ubiri Farm forestry Plans; follow-up meeting and forest survey at Vuga and Hemsambia; preliminary meeting with Mgambo Village Government.
16.10.95-20.10.95	Study Tour to West Usambara.
23.10.95-29.10.95	On leave (election period).
30.10.95-3.11.95	Writing up Study Tour report, drafting Village Forest Management rules.
6.11.95-11.11.95	Discussions with FPS Manager and EUCFP staff; meeting at Mpanga on Forest Management Rules; village mapping at Potwe Ndondondo.
13.11.95-18.11.95	Forest Survey at Ntuza (aborted); redrawing village maps; report preparation.
20.11.95-25.11.95	Discussion/Seminar on Forest Management Rules; Farm Forestry Planning Meeting at Ubiri; preparations for Mgambo Village Meeting and Zanzibar Study Tour.
27.11.95-2.12.95	Revisit Potwe for Farm Forest Plan; Village Meeting at Vuga to finalise Forest Management Rules; Mgambo Village Meeting for Handei Forest Management (aborted).
5.12.95-13.12.95	Dar es Salaam and Zanzibar for Farm Forestry and Forest Management Study Tour.
14.12.95-15.12.95	Write up Study Tour and Consultancy Reports.
18.12.95-22.12.95	Meeting at Ubiri; write up consultancy report.

Appendix 3.

VILLAGE FOREST MANAGEMENT AND FARM FORESTRY OUTPUTS FROM

EUSFP PHASE II PROJECT DOCUMENT

6.2 Component 2 - Catchment Forestry

Output 2.3 Assist establishment of local community management of catchment forests on a pilot basis, e.g. Mpanga Forest and the Handei forest adjacent to Mgambo and Misalai villages.

Activity 2.3.1 Village and ward meetings.
Activity 2.3.2 Consultative agreements on the management and ownership rights of community catchment forest reserves.
Activity 2.3.3 Surveying, mapping, boundary opening and demarcation (if needed)
Activity 2.3.4 Using PRA approach in developing management plan with villagers (Musoma experience)
Activity 2.3.5 Assist villagers (when need arises) to manage these forests
Activity 2.3.6 Monitoring Activity

Four villages in Maramba Division of Muheza District, Vuga, Hemsambia, Daluni Kisiwani, and Daluni Kibaoni lie near the Mpanga natural forest. The villagers surrounding this forest have requested the Project to assist in protecting the forest. A similar situation exists with another catchment forest, which lies adjacent to Handei and Misalai villages in Amani Division. These forests are located on public land and has good catchment properties.

The management plans for these two forests will be developed with the local people in these six villages, by using a Participatory Rural Appraisal (PRA) and participatory planning approaches. Various management options will be explored, to determine the best approach. Local authorities, institutions and other projects will also be involved, as appropriate.

As a follow-up to the national Tanzania Forestry Action Plan and regional plans, FBD has been developing a pilot approach to village and district-level land use and forestry planning. Such operational plans are intended to be implemented by local people themselves, with support from technical officers. Outside inputs and resources will be kept to a minimum.

In late 1993, FBD began work on this local-level planning approach in Musoma Rural District of Mara Region. Due to the promising results obtained, FBD plans to expand this activity to other regions. FBD's experience can be used to assist the Project in developing a participatory management approach for the Mpanga Forest.

Monitoring and follow-up of activities will be done by villagers and Project staff. Since this will be a pilot effort, it will be important to carefully monitor and document activities, to determine whether or not this approach may be applicable elsewhere.

6.3 Component 3 - Farm Forestry

Output 3.1 Conduct grassroot awareness-raising campaigns on conservation, reforestation, agroforestry and other farm forestry and land use management practices.

Activity 3.1.1 Prepare extension programme for work with villagers

In Phase I, the Project initiated awareness-raising efforts with villagers, through holding meetings on forest conservation and fire protection issues. In 1993, initial work has been done to develop an extension programme for the Project. This work will be further developed in Phase II, in collaboration with other extension agents working in the Project area.

Activity 3.1.2 Meetings and follow-up meetings

Under the extension programme, the Project will arrange for village meetings to raise people's awareness on conservation and agroforestry issues. Also, the Project will be conducting follow-up meetings to evaluate the impact of the previous meetings. Particular efforts will be made to encourage the participation of women in these village meetings, or, if necessary, to hold separate meetings for women at the village level.

Activity 3.1.3 Organising study tours to SECAP, Arusha, Kilimanjaro, etc.

Farmer study tours will be organized within the region and outside, e.g. Arusha and Kilimanjaro, to allow farmers to "learn by seeing" others' activities concerning agroforestry and environmental conservation. Villagers from pilot villages will be given priority for study tours, but representatives from other villages will also be included. At least one-third of the study tour participants will be women farmers.

Activity 3.1.4 Video and film shows
Activity 3.1.5 Distribution of extension materials (calendars, posters, stickers)

Under the awareness-raising campaign programme, the extension agents will collaborate with extensionists from other sectors and projects, e.g. EUCADP, to conduct video and film shows relevant to agroforestry and environmental conservation issues. Other extension materials, such as calenders, posters, stickers, etc., will be provided to villagers and other institutions.

Activity 3.1.6 Work with schools on environmental education issues

In addition to school tree nurseries, the Project staff will look for other possibilities of working with schools on environmental education issues. Project staff, for example, may be able to give lessons on forest conservation in primary schools in the Project's area. This will help to sustain the awareness-raising campaign.

Output 3.2 Assistance in developing effective and ecologically-sound conservation and farm forestry practices in seven pilot villages.

Activity 3.2.1 Identification of pilot villages

Within the EUCFP Project area (Muheza and Korogwe Districts) are located 54 villages. The Design Team proposes to focus its farm forestry efforts initially in seven pilot villages.

The following criteria were used in selecting the seven pilot farm forestry villages:

1. Villages that are affected by enlargement or gazettement of forest reserves and where crop compensation has been carried out in Phase I, e.g. Mwembeni (gazettement) and Kwagunda (enlargement)

2. Villages near areas where forest illegalities, e.g. pit-sawing, encroachment, forest fires, etc., occur, e.g. Folofolo Kiuzai (encroachment, pit-sawing) and Kwagunda (forest fires)

3. Villages that participated in the management plan preparation for Marimba and Bamba Ridge Forest Reserves, e.g. Kwatango and Bamba Mavengero.

4. Villages that participated in the socio-economic study undertaken in 1993 to prepare the Project's extension programme, e.g. Bamba Mavengero.

5. Villages next to ANR, with a majority of tea estate labourers, and where shortages of land, fuelwood, and other forest products are experienced, e.g. Potwe Ndondondo, Kwagunda, and Ubiri.

In addition, the Project staff will also conduct general awareness-raising campaigns and work with Village Conservation Committees in other villages located in the Project area.

Based upon the above criteria, the following villages have been identified tentatively as possible pilot villages for Phase II farm forestry activities:

Korogwe District:

1. Kwagunda (Korogwe Division)
2. Folofolo Kiuzai (Magoma Division)
3. Potwe Ndondondo (Bwembwera Division)
4. Ubiri (Korogwe Division)

Muheza District:

5. Kwatango (Ngomeni Division)
6. Mwembeni (Muheza Division)
7. Bamba Mavengero (Maramba Division)

The Project extension staff will need further discussions with villagers in the Project area, to decide if these villages would be the most suitable ones.

Activity 3.2.2 Conduct a survey of trees in farms with the villagers (PRA)
Activity 3.2.3 Identification of "desirable" tree species

The Project staff will conduct a survey of trees retained in farms and their use. This information will help the Project's extension agents to know and learn from villagers the traditional agroforestry systems, if any, and encourage the use of these systems.

The Project will conduct a survey of "desirable" tree species in the pilot villages before embarking on nursery establishment in the pilot villages. Species to be considered are those suitable for agroforestry practices and fast-growing species suitable for fuelwood and building poles. The survey will consider women's and men's knowledge on these species.

Activity 3.2.4 PRA exercises, develop village-level forestry and land use plans with villagers

Activity 3.2.5 Exchange ideas with agriculture and livestock extension agents and work as a team

Participatory Rural Appraisal (PRA) techniques will be exercised in the pilot villagers, whereby villagers will be trained to develop plans for their own development activities. The FBD's approach to integrated village-level land use planning will be used. This work will require close collaboration with extension agents in related sectors.

Activity 3.2.6 Identification of contact farmers, schools (demonstrations)

The contact farmers will be selected in each of the pilot villages, for demonstration of agroforestry practices. The farmers will be selected from among those who volunteer, with at least one-third of the pilot farmers being women.

The Project will also select contact schools, especially for nursery activities. The number of contact farmers from each pilot village will be done after contacting and discussing with agricultural, livestock and community development agents, and deciding upon the criteria for selection.

Appendix 4.

STRATEGY AND PROGRAMME FOR HELPING VILLAGE GOVERNMENTS TO PREPARE VILLAGE FOREST MANAGEMENT PLANS

1 Introduction: a strategy and programme for preparing a village forest management plan cannot be drawn up without the full participation of the village population. Some villages will have clearer ideas than others on the kind of initiatives and controls they need for managing their forests, and the amount of outside assistance required will also vary depending on the pressure on the forest and the nature of the threats to its survival.

It is essential that the initiative and the lead in drawing up a forest management plan is taken by the villagers and the village government, not by outsiders. Hence this note should only be seen as a general guide to EUCFP personnel, which will need modification in the light of field visits, discussions with villagers and surveys of the forests in question.

2 Strategy: the basis of preparing a village forest management plan should be -

(1) Discussions with all sectors of the village community to obtain a clear picture of:
- a) the nature and extent of the forest resources available to the village;
- b) the uses currently made of these resources (purpose, users and controls);
- c) the threats to sustainable utilisation (illicit users, disregard for regulations, increased number of people dependent on the forest);
- d) experience of earlier attempts to control forest use;
- e) alternative resources which might be used to reduce pressure on the forest.

(2) Field surveys, conducted jointly by village leaders, elders, women's representatives and EUCFP/FBD staff:
- a) to identify boundaries and measure the extent of the forest;
- b) to agree on the scale of uses that can be made of the forest (for fuel, building, grazing, medicines and other uses) without risking its destruction;
- c) to decide what controls are both necessary and feasible for different uses and categories of users.
- d) to examine alternative reources which could be drawn on as a substitute for over-use of the forest.

(3) Socio-economic and administrative surveys, conducted by village representatives and outside advisers:
- a) to count the numbers and types of people who have legitimate claims on the forest;
- b) to estimate the numbers and types of people who use the forest illegally;
- c) to consider the mechanisms that could be adopted for controlling illicit or unsustainable use of the forest resources.

(4) Incorporation of the above data in a draft village forest management plan, formulated by a group of village representatives with advisers from EUCFP and the District Council.

(5) Discussion of draft village forest management plan by village government and presentation to village community.

(6) Endorsement of village forest management plan by District Council and EUCFP/FBD, and formulation of appropriate bye-laws.

The role of EUCFP personnel throughout this process should be to facilitate and support discussions and negotiations, but not to dominate the proceedings. An important function of the advisers will be to ensure that the views and needs of all sectors of the village community are heard and incorporated in the plan, including those interest groups such as women, landless, etc who are often overlooked. Methods of achieving this objective without causing resentment will become clear in the course of the field work.

3 Sequence: a possible sequence of events may be as follows:

(1) Day 1: local EUCFP representative contacts Village Government Chairman to suggest a meeting with EUCFP advisers and to agree a suitable date. Normally at least 3 days should elapse between contacting the VGC and the date agreed for the meeting. EUCFP representative should leave a letter with the VGC (draft attached), as a guide for the VG to consider before the meeting.

(2) Day 4 (or later depending on when is suitable for VG and EUCFP): meeting of EUCFP representatives with VG. The main purpose of the meeting is to hear the views of the village community on management and protection of their forest, and to start pulling together information on the following:

a) the location, nature and size of the forest resource to be managed;
b) historical and current uses made of this resource;
c) people having and claiming rights to use the forest;
d) people using the forest without rights;
e) existing controls on forest utilisation, sanctions available, their effectiveness;
f) views on strategies for future control of forest utilisation;
g) alternative opportunities for those who will be excluded from the forest;
h) views on outside assistance felt to be needed by the village for implementing the forest management plan.

(3) Day 5: a start to the field work, including:

a) Forest walk: may be undertaken in the afternoon of Day 4 if the village meeting finishes early enough;
b) Village census: part of the EUCFP team could remain in the village with some VG representatives to start the census. This should cover population statistics as well as land holdings, land use, crop and livestock production.

(4) Day 6: completion of the field work, including:

a) continuation of the village census;
b) identification of claims to rights in the forest;
c) discussion on present and future strategies for controlling forest use;
d) discussion on substitute activities for those excluded from the forest.

(5) Day 7: Formulation of draft village forest management plan by Village Government and EUCFP representatives.

(6) Day 10: Discussion of draft plan by VG and EUCFP: draft left with VG for more detailed discussion within the village.

(7) Day 20: Meeting of whole village to discuss and agree the plan before submission to District authorities.

NB: A MORE COMPREHENSIVE GUIDE TO FACILITATION OF VILLAGE FOREST MANAGEMENT HAS BEEN PREPARED BY LIZ WILY (ORGUT CONSULTING, 1995) -

"HELPING VILLAGERS MANAGE THEIR OWN FORESTS"

ANNEX 1: LIST OF QUESTIONS TO BE CONSIDERED BY VILLAGE GOVERNMENT

.....Village Governemnt has requested assistance from EUCFP in preparing a village forest management plan to utilise and protect its forest resources.

EUCFP is happy to assist ..... Village in this process, and will send a team to work with the village in drafting such a plan.

Before the arrival of the team the Village Government is requested to give thought to the following questions, which will be helpful in formulating the forest management plan:

1 What Area: what is the size of the forest, where are the forest boundaries, landmarks, what land types does it include, what are the important resources in the forest?

2 What Uses: what quantities of fuelwood, grazing, building poles, timber, thatching grass, beekeeping, fruits, minerals and medicines are taken from the forest; what additional uses does it have for rituals, water catchment, etc;

3 What claims: how many people claims rights to use the forest resources, who are they, what rights do they claim, are these rights disputed?

4 What controls: how is access to the forest controlled, are there forest guards, are they effective, what legislation and penalties exist, are they practised?

5 What conflicts: what are the types and causes of conflicts over forest resources, between whom, how frequent, how are they settled, how could they be prevented?

6 What alternatives: what alternative resources does the village have access to, which could be used to reduce pressure on the forest? How could use of these resources be encouraged and controlled?

7 What plans: what plans does the village have for restricting and policing forest use? Do they consider gazetting it as a forest reserve, introducing alternatives, or other forms of control? What role is anticipated for village, district and central governments?

8 What proposals: how does the village propose to formulate a village forest management plan, survey and demarcate the forest, prepare a land use plan, administer and finance the programme? What assistance is expected to be required from EUCFP or other external sources?

Appendix 5

STRATEGY AND PROGRAMME FOR HELPING VILLAGE GOVERNMENTS TO PREPARE A FARM FORESTRY ACTION PLAN

1 Introduction: effective conservation of forested areas in East Usambaras, whether in State Forest Reserves or on village lands, requires that the village population has access to alternative sources of fuelwood, building poles, fodder crops, thatching grass and other forest products from sources outside the forest. One way of achieving this is to promote planting of trees and woody perennials by villagers, whether in blocks, interplanted with annual crops or as boundary strips, both on individual farms and on village lands.

Such tree planting has added importance in controlling soil erosion on steep lands, and in protecting the water catchment.

Selection of appropriate species, planting locations and methods of promoting such a farm forestry programme will vary from village to village according to the previous experiences of the villagers, availability of suitable land, ecological conditions, population density, etc. Preparation of a workable strategy and programme for farm forestry development requires the full participation of the village population concerned. The role of EUCFP is to assist the villagers with technical and organisational expertise, and where necessary with supply of plants or other materials.

This note provides a general guide to EUCFP personnel for farm forestry planning. It will need modification and adaptation in the light of discussions with villagers, field visits and surveys of the villages and areas in question.

2 Strategy: the basis of preparing a farm forestry action plan should be -

(1) Discussions with all sectors of the village community to obtain a clear picture of:
- a) current sources of fuelwood, building poles, grazing, thatching grass and other forest products available to farmers;
- b) present and anticipated demand for these products, adequacy of supply at the moment and expected shortfall in future;
- c) likely effect on supply of these products if access to State or village forests is limited or banned (if this is likely to happen);
- d) extent of soil erosion and threat to water resources from deforestation;
- e) experience of earlier attempts to plant trees on village or farm lands, including-
  - * species used and source of plants
  - * whether individual or village planting
  - * whether boundary or interplanting
- f) village preferences regarding species, nurseries, planting method and location;
- g) resources expected to be needed for initiating or expanding the farm forestry programme.

(2) Field surveys, conducted jointly by village leaders, elders, women's representatives and EUCFP/FBD/Kilimo staff -

a) to examine a sample of farms where trees have been planted and to assess the outcome;
b) to assess the opportunities for incorporating trees in the farming system, either as intercrops, fodder crops, soil improvers or for soil and water conservation.
c) to examine any village woodlots that have been established and to assess the lessons learned;
d) to identify the extent of areas suitable for individual or village tree planting;
e) to visit tree nurseries in the area and assess their experience;
f) to agree what tree species are preferred, where and on what basis the villagers would like to plant them;
g) to decide what controls will be needed on existing sources of forest products while the new supplies develop.

3) Quantitative surveys, conducted by EUCFP personnel with village representatives -
a) to assess the number of farmers interested in participating in the programme and the expected scale of tree planting;
b) to calculate the number of seedlings and other production inputs required;
c) to draw up a budget for the farm forestry programme, and to assess possible funding sources.

4) Study tours by village leaders and EUCFP staff, if considered feasible, to visit successful farm forestry programmes in other Districts (eg SECAP, Lushoto).

(5) Incorporation of the data collected through the above, in a draft farm forestry plan for the village formulated by village representatives with advisers from EUCFP, FBD, Kilimo and the District Council.

(6) Discussion of the draft plan by the village government and presentation to the village community.

(7) Endorsement of plan by District Council, EUCFP, FBD and Kilimo/EUCADEP, identification of funding sources and formulation of appropriate village bye-laws if required.

3 Role of EUCFP: the role of EUCFP personnel throughout this process should be -

(1) to facilitate and support discussions and negotiations, but not to dominate the proceedings. An important function of the advisers will be to ensure that the views and needs of <u>all</u> sectors of the village community are heard and incorporated in the plan, including those interest groups such as women, landless, etc which are often overlooked.

(2) to liaise between the different organisations involved, and to define the contribution which each is best equipped to provide.

(3) to ensure that advice is available on the agricultural components of the plan as much as on the forestry components.

(4) to identify the needs of the programme for external assistance, while taking great care to avoid raising unrealistic expectations.

The team should consist of the locally based foresterand a more experienced forester from EUCFP headquarters or field office, together with an agriculturalist from Kilimo or EUCADEP. Maintaining continuity in follow up on the meetings and surveys is essential for achieving objectives. The precise role of local and regional staff in these respects will become clear in the course of the field work.

4 Sequence: a possible sequence of events may be as follows:

(1) Day 1: local EUCFP representative contacts Village Government Chairman to suggest a meeting with EUCFP and other advisers and to agree a suitable date. Normally at least 3 days should elapse between contacting the VGC and the date agreed for the meeting.

(2) Day 4 (or later depending on when is suitable for VG and EUCFP): meeting of EUCFP and other representatives with VG. The main purpose of the meeting is to assess the scope and need for village or farm level tree planting, to hear the views of the village community on the proposal, and to start pulling together information on the questions listed in section 2 above.

(3) Day 5: continuation of field work, including:

a) Farm and forest transects: these may be started in the afternoon of Day 4 if the village meeting finishes early enough;

b) Village census: part of the EUCFP team could remain in the village with some VG representatives to start the census. This should cover population statistics as well as land holdings, land use, crop and livestock production, identification of major constraint areas.

(4) Day 6: completion of the field work (more or less time may be needed depending on the size and diversity of the village population and land resources), including:

a) continuation of the village census;
b) identification of tree species preferred for different purposes;
c) identification of suitable sites for nurseries and for village/on-farm tree planting;
d) discussion on present and future strategies for promoting tree planting and protecting soil, water and forest resources;
e) discussion on interim controls for protecting natural forest while farm forests come into bearing.

(5) Day 7: Formulation of draft village farm forestry plan by Village Government and agency representatives.

(6) Day 10: Discussion of draft plan by VG and agencies: draft left with VG for more detailed discussion within the village.

(7) Day 20: Meeting of whole village to discuss and agree the plan before submission to District authorities.

Appendix 6.

PARTICIPATORY LEARNING AND ACTION TECHNIQUES

1 Introduction

Throughout the consultancy Participatory Learning and Action (PLA) techniques such as Semi-Structured Interviewing, Triangulation, Participatory Mapping, Farm Transects etc were used, both to ensure that the village members see the resulting plans as their own rather than the project's, and to enable the project staff to gain experience of working with such non-traditional methods of enquiry and extension.

This appendix does not attempt to be a full guide to PLA techniques but gives a brief outline of the most useful of the methods used, including some that were not fully exploited for lack of time. Some sources are also indicated for further reading and training in use of the most important methods**.**

2 Semi-Structured Interviewing (SSI)

This is one of the main tools in PLA, and was extensively used in the consultancy. It is a form of guided interviewing without a formal questionnaire. A checklist of topics is prepared on to which discussion may be led. The list attached to the Planning Guide for Village Forest Management (Appendix 4, Annex 1) is one example. The six questions - When? What? Where? Why? Who? How? - is another. Questions which are seen to be irrelevant or touchy are skipped, while others which come up in response to farmers' answers or comments are pursued.

SSIs should be conducted with both individuals and groups. Sensitive issues such as illegal pitsawing in Mpanga and Handei were better dealt with in individual discussions where people are less embarrassed to talk openly. Group discussions such as the initial meetings with village governments held in all villages were useful in getting a debate going and bringing out different or conflicting views on a topic. Key informants or specialist "focus groups" - people who have special knowledge of a topic or have experience from elsewhere of one of the innovations being considered (eg Mzee Mkeka at Mpanga, schoolteacher at Ubiri) - were useful providers of new insights.

A purposively selected sample of interviewees should be drawn up, including farmer leaders, rich and poor households, innovative farmers who have tried out some of the recommended techniques, women farmers who are both members and heads of households, immigrants who have come recently to the area, poor farmers who have very limited resources, traditional farmers who are known to have resisted new ideas, teachers, shopkeepers, religious leaders, political figures, etc.

This ensures that a wide cross-section of people are consulted, including many whose views would not normally be heard in group discussions. Each interview is used as a cross check on information obtained from other interviews or sources. Useful guidelines for SSIs are in IIED/SCF 1991.

3 Triangulation

This is another method of cross checking on information received from a number of sources, which was extensively used in the course of the consultancy. It means looking at a subject or a problem from three (or more) different angles.

For example in SSIs:

a) there should ideally be at least three members of the interviewing team (in the present case a forester, an agriculturalist and a socio-economist), all of whom ask questions in their particular fields, participate in the discussions and compare notes on the findings afterwards;

b) the same or similar questions are posed separately to three or more different people or groups and their responses are compared;

c) the same or similar questions are put in three or more different contexts - individual informants, group meetings, focus group discussions - and the results are compared.

4 Participatory Mapping:

This is a useful method both for seeing how different people and groups in a village perceive their environment (men and women, big and small farmers, insiders and outsiders, etc), and also for identifying and quantifying areas suitable for planting trees, forests needing protection, etc etc.

At Ubiri and Potwe groups of 10-20 villagers participated in constructing a map of their village on the ground. Any local materials that come conveniently to hand are used: sticks, stones, tree branches, seeds, ash, water, etc. When the map is complete a discussion is held to see what conclusions can be drawn from it - the extent of land shortage, forms of land use, distribution of holdings, availability of water, forest, etc.

The map should be left on the ground as long as possible to stimulate further discussion within the village, and should be redrawn on paper as a permanent record. The Ubiri map, for example, was drawn in the schoolmaster's compound and was used by schoolchildren for several days before it deteriorated. Sketches of the maps drawn at Ubiri and Potwe are reproduced in Appendices 9 and 10.

5 Farm or Forest Transect

Another form of map is a transect resulting from a walk through a forest, village or farm. This was used in all the pilot villages: a walk round the perimeter of Mpanga Forest, surveys of a sample of farms in Potwe, etc.

A group of farmers with the PLA team walks through the village, forest or farm noting everything that is passed on the way: crops, trees, soil types, water sources, buildings, etc. It provides a useful cross check and supplement to the village map.

6 Seasonal Calendar

This is a calendar showing month by month the major activities, constraints and opportunities faced by villagers throughout the annual cycle. It helps to identify the periods of greatest labour demand, highest risk of food shortages, climatic variations, periods suitable for planting trees and other crops, etc.

A seasonal calendar can be drawn as a graph or histogram, either on the ground so that a large number of villagers can see and participate in its construction, or on a large sheet of paper if a smaller group of people is involved. Alternatively it can be simply discussed in a meeting if the variables or conclusions sought are relatively simple.

Seasonal calendars were discussed in the pilot villages to determine which months nurseries should be established, what area of trees could realistically be planted and cared for without competing too much for land or labour needed for other activities, etc.

7 Time Trends

Time trend analysis is a useful way of identifying important changes in the village over time: when, how and why a forest has been encroached on; the extent to which land has become more or less available, rainfall more or less abundant and reliable, etc. Trends can be drawn on paper or on the ground, or just discussed in group or individual interviews.

This technique is useful in showing both actual and perceived changes in features of the village, and in factors affecting the opportunities and risks to which the village members are subject. It was much used in gaining an understanding of the history of misuse of Mpanga and Handei Forests, and in discussing farmers' perceptions of the effect of forest clearance on climate.

8 Venn Diagrams

A Venn diagram is a way of showing which are the key institutions and individuals in a village community, the relations between them and their importance for decision making.

Groups of villagers draw, either on the ground or on paper, a series of interlocking circles representing each institution or individual. The circles overlap or touch each other where there is interaction betwween the people or institutions they represent; if there is no interaction the circles do not touch. The distance between them demonstrates the relative importance of the institutions or individuals.

Venn diagrams can be used to show either the actual situation or the situation that would be preferred, for example with the different institutions concerned with forest conservation and development in East Usambara.

9 Ranking

These are various methods for placing things in order of priority: for example, lists of tree species which farmers prefer for planting on their farms or in woodlots (Appendix 12). Ranking is also useful for getting access to sensitive information such as relative wealth and influence. People are quite ready to say that x is richer than y or this field is more fertile than that one, but are less willing to attach absolute figures to their own or some one else's wealth or influence.

Several different methods of ranking have been developed: preference ranking, pairwise ranking, matrix ranking, wealth ranking. They are well described in IIED/SCF 1991 and in Indo-German Changar Project 1995.

10 Training in PLA Techniques

Most of the above techniques were used to some degree in the course of the consultancy, and proved useful both in gaining understanding of the village situation and as learning exercises for farmers and staff.

Practical use of PLA techniques is probably the best method of learning about them, but a combination of practical application and more formal training can accelerate the learning process. Some of the institutions which run such training courses in Tanzania are listed in paragraph 8.02(3) of the main report. A useful manual on PLA training is IIED 1995.

Appendix 7.

CASE STUDY NO. 1:

MPANGA FOREST RESERVE, VUGA AND HEMSAMBIA VILLAGES, MARAMBA DIVISION

1 Background

Vuga and Hemsambia are two adjoining highland villages above Daluni Kisiwani in Kigongoi Ward of Maramba Division, Muheza District, Tanga Region. Each village spreads over an area of approximately 10 sq km. Vuga has 9 sub-villages with a total population of 2,556, while Hemsambia has 7 sub-villages and a population of 712 (details are in Annex 1). The average size of holding is about 4 acres of cultivated land per household, with a range from 2-12 acres. Maize, cassava, beans, cocoyams and bananas are the main food crops grown; sugarcane, cloves and cinnamon are the major cash crops, but Vuga and Hemsambia lack reliable income earning enterprises.

The two villages are surrounded by remains of natural forest which have been greatly encroached upon in recent years, both by pitsawers and for purposes of cultivation. Between Vuga and Hemsambia lies a small area of forest called Msitu wa Mpanga, which is jointly owned by the two villages. Mpanga is an important water catchment forest for Vuga and Hemsambia, as well as for the population centres at the foot of the northern section of the East Usambara Mountains.

Many perennial streams originate in Mpanga Forest and in an adjoining forest area called Ntuza. Village elders believe that from pre-colonial days the forest has been their main source of rainfall, and that misfortune will come to the area if trees in Mpanga Forest are cut. During the Kilindi wars in the 19th century Mpanga is said to have been used as a look out point from which approaching enemies could be seen and attacked. Clan elders were buried in the forest and it became an important sacrificial site for rainmakers as well as a source of traditional medicines.

Despite its importance to the population of the two villages and of surrounding areas, Mpanga Forest has been badly damaged in recent years by pitsawing and excessive extraction of wood for fuel and building purposes. Traditional controls, where people cutting trees in Mpanga would have been required to supply a black sheep for sacrifice to appease the ancestors, have lost their strength since many people who have cut trees have not performed this sacrifice and have apparently suffered no ill effects. Government sanctions have also been ineffective since Mpanga is on public or village land, and is therefore subject only to rules protecting certain tree species which may not be felled without a permit, and forbidding cultivation within a certain distance of a water course. These rules, however, are not rigorously enforced.

In June 1994, therefore, the Chairman of Hemsambia Village Government requested EUCFP to gazette Mpanga Forest as a State Forest Reserve, seeing this as the only sure way of protecting it against further damage.

2 Sequence of Events

The EUCFP forester in charge of Maramba Division recognised the importance of helping the two village governments protect their forest, and forwarded the request to EUCFP Headquarters.
It was clear that it would be very costly to gazette and conserve this small block of forest, which does not adjoin an existing Forest Reserve, under the State Forest Ordinance. A more suitable approach appeared to be protection by village by-laws under local government legislation, with assistance from the Forest Department and EUCFP.

EUCFP therefore decided to take Mpanga as a case study of participatory forest management involving Village Governments, District Council and EUCFP. The aim has been to help the two village governments draw up a conservation and management plan for their forest reserve, and to establish a management institution and agree a set of rules governing use of the forest.

The first meeting was held on 11.4.94, when the approach was discussed and agreed in principle. Several further meetings were held in June and September 1994, but there was then a gap of over 8 months until May 1995 when the villages requested an urgent survey of the forest boundaries. This was completed in August 1995: the boundary of the forest was marked and cleared by the villagers, and the area was found to be 30 ha. A series of further visits, meetings and negotiations then followed, as outlined in Annex 2, to discuss maintenance of the forest boundaries, management of the remaining forest resource and planting of trees to substitute for natural forest utilisation. These discussions culminated in a decision by the two villages to close the forest for a period of five years and to adopt a set of rules for policing it and subsequently managing its use, as detailed in Annex 3.

3 Problems Encountered

It became clear early in the negotiations that, while the majority of the population of the two villages wanted Mpanga to be conserved, certain individuals had a vested interest in continuing to extract wood from the forest and the leadership of the two villages was far from united in their determination to stop the illegal logging.

The reasons for this were that -

(1) much of the logging that had taken place between 1993 and 1995 was financed by wealthy businessmen from Tanga and Iringa, apparently with the connivance of the then Village Chairman of Vuga who ultimately lost his position over this issue. There was some feeling among the Hemsambia population that they should be allowed to extract an amount of the remaining timber equivalent to what Vuga had felled, in order to "catch up" with Vuga before the forest was finally closed to logging.

(2) the sub-villages closest to Mpanga, which make most use of the forest for collecting fuel, building materials and grazing, were understandably less enthusiastic about closing the forest to such uses than were their more distant counterparts.

(3) one influential villager who has powerful connections in the region apparently recently obtained a licence from a District Council forester to fell three trees in Ntuza.

Although this was resented by the majority of villagers, the powerful position of the licence-holder made many people frightened to confront him.

(4) the distance between Vuga and Hemsambia (at least one hour's walk) and the poor communications between the two villages and Maramba (45 minutes drive followed by 45-90 minutes walk) made scheduling of meetings and following up on their outcome extremely difficult.

The result of these constraints has been that helping the villages to formulate a forest management plan for Mpanga has been a lengthy and complicated process. During the period of the consultancy four visits were made to the area by the team before an effective meeting with the two village governments was achieved. Even now there are opposing voices, and pitsawing in Ntuza has not been totally stopped. Indeed it can be argued that it has only stopped in Mpanga because no trees worth felling remain. However, there have been significant achievements which are listed below.

4 Achievements

The achievements resulting from the interaction of EUCFP with Vuga and Hemsambia Village Governments can be summarised as follows -

(1) a survey of Mpanga Forest has been completed, a map has been drawn and the boundaries have been more clearly demarcated in a collaborative effort between the two villages and EUCFP;

(2) an Mpanga Forest Conservation Committee has been set up with representatives from both villages, to prepare and implement controls on forest use;

(3) a set of rules governing use of the forest has been agreed by the two villages and forwarded to the District Executive Director for approval as a Village By-Law;

(4) the ongoing destruction of the forest resource, previously hidden, has been brought out into the open and its rate greatly reduced if not yet totally halted;

(5) a programme for on-farm tree planting in the two villages and gap planting in Mpanga Forest has been proposed, and implementation will start in 1996;

(6) public awareness of the importance of forest conservation, and of the part that villagers must play in it, has increased though it will still take some time to translate this into effective practical action.

5 Forest Rules

The Mpanga Forest Rules drawn up by Vuga and Hemsambia Village Governments with advice from EUCFP are attached (Annex 3). It can be seen that they are very rigid, allowing no use whatever to be made of the forest for a period of five years other than sacrifice and collection of traditional medicines by approved persons with agreement of the Forest Conservation Committee. The thinking behind this was -

(1) that the forest needs a period of total rest to recover from years of misuse;

(2) that there is anyway very little left in the forest which would be useful for building, burning or grazing;

(3) that allowing people into the forest on certain days to collect firewood and other forest products, as is done in some reserves, would make it difficult to control more destructive practices like cutting wood or poles which would be likely to follow behind the firewood collection;

(4) that a total ban on use of the forest resource will give farmers more incentive to plant trees elsewhere as an alternative source of fuel and building materials.

There is some justification for these arguments, which were strongly pressed by the majority of the villagers. It would therefore have been wrong for their advisers to press for a more liberal regime at that stage [5]. However, it will be very important to ensure:

(1) that the regulations are respected;

(2) that as soon as they are accepted as Village By-Laws offenders are disciplined as the rules lay down.

(3) that a phased transition to a more realistic gradation of rules is introduced once the forest destruction has stopped.

Support both from EUCFP and from the District Administration will be needed to this end.

6 Tree Planting

Throughout the discussions on protection of Mpanga Forest, it was emphasised that its prime importance is as a catchment
forest rather than as a major supplier of wood and forest products. Mpanga represents a very small proportion of Vuga and Hemsambia's needs for forest products: it affects only a few sub-villages, and even to these it has little to offer. There is a clear need for a major tree planting programme, both on farms and on village land.

Discussions in the meetings have so far led to the following action:

(1) a request for 3,000 *Grevillea* seedlings to be planted on the Mpanga Forest boundary in the 1996 long rains;

(2) requests from 43 Vuga farmers for a total of 615 *Grevillea*, Teak and Cinnamon seedlings for planting on their own farms (Hemsambia list is still in preparation);

[5] The draft rules initially proposed by the consultant for discussion with Vuga and Hemsambia villages suggested some forest uses to be freely permitted, others to require approval from the Forest Conservation Committee, others to be totally banned. This is the model adopted in Babati District (Wily, 1995), and it is likely to be found more appropriate in the long run. A note on the original draft rules is appended to Annex 3.

(3) plans by 4 women's groups to establish nurseries and to plant *Grevillea* woodlots on village land, size and timing still to be agreed.

These initiatives will need intensive follow up, with targets and plans for tree planting over the next 5 years to make every sub-village self-sufficient in fuelwood within the next 10 years.

6 Lessons of Mpanga

Several lessons can be drawn from the experience of EUCFP's interaction with Vuga and Hemsambia villages over Mpanga Forest Reserve:

(1) the involvement of two villages, each with several sub-villages separated by walking distances of up to two hours, makes co-operation difficult to achieve and even more difficult to sustain. The difficulties experienced in arranging meetings with a quorum from both villages, organising rosters for boundary clearing, patrolling the forest, etc, illustrate this point. The idea of dividing the forest into sections, one to be managed by Vuga and one by Hemsambia, or of dividing even further to sub-village level, was quite tempting but has so far been resisted as it would introduce other problems of its own;

(2) the involvement of politically or economically powerful personages in forest destruction makes it very difficult for poor people to defend their rights and their property, but equally provides an opportunity for an organisation like EUCFP to play the role of "honest broker";

(3) imposition of strict initial regulations on forest use, and of heavy penalties for infingement of rules, is not a bad way to start the process of forest protection and recovery: it allows scope for relaxation if early experience shows that flexibility would not be risky;

(4) official responses to village government requests for assistance in conserving their forest resources need to be prompt and sustained. The delay between the approach by Hemsambia in June 1994 and the start of serious action in mid-1995, though understandable in terms of other pressures on EUCFP resources, did allow continuation of pitsawing and made it more difficult to build unity between the villages, Government departments and project authorities.

(5) measures to conserve existing forest resources must be linked to steps to enlarge and enrich these resources by new tree planting, both on farms and on village land. Though protection of Mpanga Forest was correctly seen as top priority in the present case, the enthusiasm that can be built up in the early stages of such a conservation programme provides an opportunity for supplementary tree planting initiatives which should not be missed.

7 Next Steps

Mpanga Forest Conservation Committee will need continued support and monitoring by EUCFP. The draft rules still have to be enacted as village by-laws; clearing and planting of

the forest boundaries has to be maintained; enforcement of the regulations must be ensured; closer integration with both farm and village tree planting will be needed.

The case study provides a useful example from which important lessons can be learned.

Annex 1: Village and Sub-village Population, Vuga & Hemsambia

Village	Sub-village	Adult population	Child population	Total population
Vuga	Kumbamtoni	71	75	146
	Mpale	68	105	173
	Gombero	74	81	155
	Changaikwa	49	76	125
	Mkuzi	101	155	256
	Kwetango	40	38	78
	Mpanga	61	45	106
	Shashui	543	594	1,137
	Mgambo	280	100	380
	Sub-total	1,287	1,269	2,556
Hemsambia	Mkongoloni	63	60	123
	Bagamoyo	43	50	93
	Maweja	42	34	76
	Nkodongo	76	78	154
	Ngomei	38	43	81
	Kwebago	25	44	69
	Mwezili	57	30	87
	Sub-total	367	345	712
TOTAL		**1,589**	**1,574**	**3,163**

Annex 2: Mpanga Forest Reserve - Sequence of Meetings and Events 1994-95

11.4.95	first formal meeting of Vuga and Hemsambia village governments with EUCFP. 27 farmers, 6 officers.
12.4.94	follow up meeting. 13 farmers, 11 officers.
4.6.95	village government meeting, 16 farmers present.
7.9.94	meeting of Vuga village council, 68 farmers present.
8.9.94	meeting of Vuga village government with Maramba Divisional Executive Officer.
9.9.94	meeting of Hemsambia village council, 81 farmers present.
10.9.94	meeting of two village governments, 29 participants.
19.5.95	20 farmers assist EUCFP surveyor with clearing the forest boundary.
20.5.95	13 farmers continue the above.
19.7.95	27 village government representatives meeting.
21.9.95	consultancy team meets informally with Vuga representatives.
29.9.95	consultancy team meets informally with Hemsambia representatives.
11.10.95	consultancy team starts 3 day visit to Vuga and Hemsambisa.
12.10.95	meeting with Vuga and Hemsambia village governments, 32 farmers, 5 officials. Mpanga forest and farm walks.
13.10.95	continuation of forest and farm walks.
8.11.95	forest rules meeting with Mpanga Forest Conservation Committee.
1.12.95	meeting to confirm Forest Consevation Rules.

NB: this schedule has been prepared from EUCFP files and consultant's records. It has to be confirmed and completed by the EUCFP forester in charge at Maramba.

ANNEX 3

MPANGA VILLAGE FOREST CONSERVATION AND MANAGEMENT PLAN VUGA AND HEMSAMBIA VILLAGES

1 Background

Vuga and Hemsambia Villages, Kigongoi Ward, Maramba Division, Muheza District, Tanga Region, share ownership of Mpanga Forest which borders on the two villages. The two Village Governments and Village Assemblies have decided to conserve their forest together for their own benefit and for the benefit of future generations.

These rules and plans for conservation and management of the forest have been drawn up by the governments of the two villages with help from advisers from the East Usambara Catchment Forest Project (EUCFP). They were brought before a meeting of the two Village Assemblies on 1.12.95, and after inclusion of necessary amendments have been forwarded to Muheza District Council for approval as a Village By-Law.

2 Mpanga Forest Conservation Rules

2.01 Mpanga Forest is CLOSED for a period of five years from the end of 1995 to the end of December 2000.

2.02 The following uses of the forest are forbidden:

(1) burning charcoal and cutting firewood;

(2) any action which causes damage to sacrificial sites or water sources;

(3) pitsawing;

(4) cutting building poles, rafters and twine;

(5) clearing fields for cultivation;

(6) hunting animals;

(7) digging for minerals;

(8) building houses;

(9) grazing animals;

(10) cutting grass for fodder or thatching;

(11) collecting leaf vegetables or mushrooms;

(12) harvesting honey or beeswax.

2.03 The following uses are permitted for inhabitants of Vuga and Hemsambia villages only, provided they first obtain the approval of Mpanga Forest Conservation Committee:

(1) collection of traditional medicines for treating the villagers, ie roots, leaves, bark or other [arts of trees, provided the tree is not felled or damaged;

(2) sacrificing according to traditional procedures.

Approval for these purposes shall be given by the Chairman and Secretary of Mpanga Forest Conservation Committee, together with the Chairmen of Vuga and Hemsambia Village Governments.

2.04 Modifications to these regulations may be made by the two Village Governments at the end of the five year period 1995-2000.

3 Fines

3.01 Any person found guilty of breaking these rules shall be fined as follows:

(1) Ordinary members of Vuga and Hemsambia villages:
Tshs 5,000

(2) Members of Village Government or Forest Conservation Committee:
Tshs 10,000

(3) Non-residents of Vuga and Hemsambia villages:
Tshs 20,000

3.02 Disputes arising from these regulations shall be taken before the local magistrate's court.

3.03 Money collected as fines shall be put in a Mpanga Forest Conservation bank account, and used for protecting or improving the forest.

4 Mpanga Forest Conservation Committee

4.01 A committee shall be chosen by the two villagesfor purposes of protecting Mpanga Forest Reserve. The Chairman shall be chosen from one village and the Secretary shall be chosen from the other. Each village will elect two other members. The Chairmen of the two villages shall be ex-officio members of the committee.

4.02 The responsibilities of the Committee shall be as follows:

(1) To oversee implementation of Mpanga Forest Rules and to administer issue of permits for collecting medicines and sacrificing;

(2) To call and hold meetings of the Committee with the villagers, and to invite experts when needed for conservation of the forest;

(3) To oversee clearing of the forest boundaries and digging of beacons, in co-operation with the Chairmen of the two villagegovernments;

(4) To advise the members of Vuga and Hemsambia villages on planting trees on their farms, on the forest boundary and along the roadsides, and to obtain materials needed for this purpose with the help of EUCFP

4.03 All members of the two villages have a responsibility to report any instances of illegal use of the forest to the Forest Conservation Committee.

NOTE: These rules were jointly drafted by the two village governments and the EUCFP team. A few clauses suggested by the EUCFP team were not accepted by the Village Governments or were deferred for later consideration. These are recorded here in case they should be wanted by the Forest Conservation Committee at a later stage:

(1) allowing certain additional uses of forest products by village members, with permission from the committee, including collection of honey and wax, leaf vegetables and mushrooms, thatching grass and fallen wood for fuel for home use only;

(2) appointment by each village of two forest patrolmen, who take turns to inspect the forest at least once a week and to report any findings to the committee;

(3) organisation by the committee of groups of villagers to clear the forest boundaries or carry out other maintenance work as required;

(4) a forest improvement and tree planting programme under which:

a) each Village Government establishes a tree nursery to produce seedlings for planting in Mpanga and Ntuza Forests and for distribution to villagers;

b) each household plants a minimum of 30 trees on its land each year, with the target of each village achieving self-sufficiency in fuelwood and building poles by the year 2002.

Appendix 8.

CASE STUDY NO. 2:

HANDEI VILLAGE FOREST, MGAMBO VILLAGE, AMANI DIVISION

1 Background:

Mgambo-Miembeni is a long-established village in Misalai Ward of Amani Division. It covers a land area of approximately 618 ha, and in 1994 had a population of 1,103 living in 8 sub-villages. Mgambo is greatly influenced by its proximity to tea plantations of the East Usambara Tea Company (EUTCO). There is an estate camp with a population of around 500 immediately adjoining the main part of Mgambo Village, and most village households have at least one member working regularly for EUTCO.

When the tea estates were established in the 1950s, on land previously logged and planted to coffee by German settlers, a significant proportion of the remaining village land was still forested. However, with population expansion and no opportunity for extending the village boundaries given the proximity of EUTCO's tea and fuelwood plantations, almost all the indigenous forest has now been cleared for cultivation or grazing. The only block of natural forest that remains is Handei, a small area of about 16 ha on the escarpment to the west of Mgambo leading down towards Lwengera Valley in Korogwe District.

Handei Forest is believed to be the site of an important battle between rival Kilindi Chiefs in the early 19th century. It has great ritual significance both as a burial site and for rainmaking and other ceremonies. Elders of both Mgambo and Kazita (a sub-village of the nearby village of Misalai which was traditional home of the Kilindi Chiefs) used Handei as a sacrificial site and viewed it as an important water conservation area. For this reason there were until recently strong sanctions protecting its use, felling of trees in particular being totally forbidden. Many young people were frightened even to go into Handei Forest, for fear of supernatural sanctions.

In recent years, however, these sanctions have become much less effective. Shortage of agricultural land, linked to growing disregard for traditional authority, has led to encroachment of the forest boundaries for cultivation purposes and to felling for pitsawing of many of the most valuable trees. There has been some replanting of trees close to Handei Forest boundary, but despite this the extent of forest has been greatly reduced.

Some time in 1993, the then Village Executive Officer (VEO) of Mgambo is reported to have requested EUCFP assistance in conserving what remains of Handei Forest. EUCFP decided to take it on as a pilot project for village forest management.

2 The Proposal:

EUCFP's proposal, incorporated as one of the tasks in the present consultancy assignment, was to assist Mgambo Village Government (MVG) in drawing up a conservation and management plan for Handei Forest, including a programme of substition tree planting on the villagers' own farms. The plan would be prepared and implemented jointly by MVG and EUCFP, using PRA and PLA techniques.

3 Sequence of Events:

7.6.95: the first meeting of EUCFP foresters with MVG was held. Both the VEO and the EUCFP staff member who had initiated the plan had moved on to other jobs by this time, and the current VEO and MVG members said they had no knowledge of the original proposal. Nevertheless the suggestion for a joint survey of the forest, and for preparation of a forest conservation and management plan, seemed to be well received. The MVG said they would put the proposal to the Village Assembly and come back to EUCFP with a request for a surveyor.

17.9.95: three months later no meeting of the Village Assembly had been held. After a number of reminders from EUCFP a second meeting with MVG was ultimately arranged. It was not well attended and there seemed to be less enthusiasm for the Handei proposal, perhaps related to the fact that the son of an influential man in Mgambo (Ward Chairman of CCM) was widely known to be pitsawing in Handei, and the MVG Chairman was frightened to challenge him. Some underlying fears were also voiced privately, that EUCFP's real intention might be to take over the forest and close it to village use. This was of course hotly denied by the EUCFP team. Despite these doubts, the MVG said they still supported the proposal and would arrange a date for the team to inspect the forest, with MVG representatives, prior to a full survey.

16.10.95: after several more reminders and a resounding silence from the MVG, a further meeting was at last arranged to walk the forest boundaries. When the EUCFP team arrived the MVG Chairman was nowhere to be seen. Only 3 delegates were present and they were unwilling to escort the team to the forest in the absence of the Chairman. They said that the national elections due at the end of the month were part of the reason for the delay. They also said, however, that the Chairman was frightened that people would accuse him of "selling Handei to EUCFP" if he allowed project representatives to enter the forest. A letter was written to the Chairman reaffirming that EUCFP's intention is solely to help MVG conserve Handei Forest and requesting him to fix a date for visiting the forest after the national elections (29.10.95), and to stick to it. The letter was copied to the Ward Chairman of CCM, and was discussed openly with MVG members, IUCN, etc.

24.11.95: an MVG meeting was arranged, but was postponed till two days later at short notice.

26.11.95: the MVG meeting was cancelled for lack of a quorum. A second letter was written to the Chairman expressing EUCFP frustration at MVG's continuous equivocation and asking him either to invite EUCFP to assist properly or to say outright that no help is needed. The letter was copied to the Ward Chairman.

2.12.95: an MVG meeting was held but the Handei issue was not discussed as Ward officials were present for a different agenda.

21.1.96: word reached EUCFP that pitsawing in Handei is continuing apace. EUCFP forester with a police escort confiscates a load of Mnyasa planks found in Handei Forest, together with the pitsaw of the CCM Chairman's son.

4.2.96: an MVG meeting was held without information to EUCFP. Following the meeting the Chairman wrote a letter to EUCFP saying that the village has unanimously agreed that they will conserve their forest themselves, coming to EUCFP for assistance only if they need it.

5.3.96: a major fire coming up the escarpment from Lwengera Valley destroyed a large area of Eucalyptus planted around Handei Forest, as there has been no firebreak maintenance for a long time.

25.3.96: a heavy rainstorm dislodges boulders on the edge of Handei Forest, which roll down towards Lwengera Valley causing much damage.

3 Reasons for Stale Mate:

There seem to be three main reasons for the reluctance of MVG to accept EUCFP involvement in conserving Handei Forest:

(1) the inability of MVG's weak Chairman, despite the support of the majority of Mgambo village population, to stand up to the more powerful CCM Chairman whose son, in partnership with the current VEO, was the chief culprit in pitsawing in Handei;

(2) some fear that EUCFP participation in protection of Handei Forest, despite emphatic reassurances to the contrary, might lead ultimately to a State take over of the forest. The example of compulsory forest acquisitions in the nearby villages of Antakai and Zilai, with delayed payment of compensation, was pointed to by MVG members in support of this fear. This may be a diversionary tactic masking the real reason described above, but it is not without significance;

(3) loss of respect for elders and less faith in efficacy of traditional rituals, linked to the mixed population of Mgambo and to the fact that many people have now cut trees in Handei with no apparent harm to themselves.

4 Conclusion:

The attempt to use participatory planning methods to help MVG protect its village forest has so far failed. Pitsawing is continuing, forest fires are not being controlled, some tree planting is taking place but the extent of the village forest reserve is declining.

The case study illustrates the difficulty faced by an elected village government, especially with a population as diverse as Mgambo's, in disciplining its fellow villagers even when the actions of a few are clearly against the interests of the majority.

It can be argued that it is unrealistic to expect a total handover of responsibility for forest management to be effective, and that the presence of an outside authority which will take disciplinary action if the village government fails to use its powers is needed. This can be helpful both in enabling the village government to pass the blame for unpopular disciplinary actions on to some one outside the village community, and also in ensuring that weakness on the part of the village government does not have the disastrous effects seen so far in Mgambo.

Appendix 9.

CASE STUDY No 3:

UBIRI FARM FORESTRY PLAN

1 Background

Ubiri is a long established village on the edge of the escarpment leading westwards from the East Usambara mountains down towards Lwengera Valley, which separates East from West Usambara. To the east Ubiri is bounded by tea estates of the East Usambara Tea Company (EUTCO). Most of the village land is cultivated with annual crops or is open grassland; there is almost no remaining forest, the result of shallow soils, frequent fires and exposure to strong winds.

Ubiri is strongly influenced by its proximity to the tea estates, to which almost every family supplies at least one regular worker. Nearly half the households also pluck tea as tenants on EUTCO land, or grow Eucalyptus on their own land under contract to the company.

The village has a major shortage of wood for fuel and building purposes. Many farmers as well as village institutions have planted trees on their land, and the village government has recently leased out 50 ha of unused village land to EUTCO for Eucalyptus planting. There is thus strong interest in tree planting at Ubiri, and the village was therefore chosen as a pilot project for EUCFP's farm forestry programme.

2 Approach Adopted and Sequence of Events

A participatory approach to planning was adopted, using various PRA methods to identify and stimulate farmer interest in planting more trees on their own land. The value of tree planting for fuelwood and building materials, food and fodder, and for water catchment purposes was already widely accepted. There was less appreciation of the value of trees for soil and water conservation. A series of meetings was held with Ubiri Village Government (UVG) and women's groups, a village map was prepared, farm surveys were made and Ubiri representatives participated in study tours to West Usambara and Zanzibar.

The objectives of these exercises were:

a) to obtain an overview of the human and natural resources at Ubiri as a basis for planning;

b) to enable both the EUCFP team and the UVG to get a clearer picture of current and anticipated supply and demand for forest and wood products at Ubiri;

c) to have a better understanding of current forms of land use and of the possibilities for integrating trees into the farming system;

d) to identify both farmers and groups who are interested in establishing nurseries and planting trees on their land, and to discuss with them the quantities and species that they wish to plant;

e) to identify with the farmers and groups the most suitable locations for establishing nurseries and planting trees;

f) to draw up jointly with the villagers a draft planting programme, budget and input requirements for a five year farm forestry plan.

The sequence of events followed is at Annex 1. The first draft of Ubiri's farm forestry plan is at Annex 2.

3 Ubiri Village Profile

As result of the above exercises, and building on knowledge of Ubiri which the consultant already had from previous work there in connection with the outgrower tea and fuelwood project, the following profile of the village was prepared.

Ubiri has 10 sub-villages, 6 of which are along or close to the edge of the escarpment, 4 of which are part way down the slope towards Lwengera (see attached transcript of village map prepared by village representatives with EUCFP forester). The total village population is 626 people in 122 households, with the breakdown shown in Annex 2, Table 1. About 25% of households have moved to Ubiri over the last 20-30 years, mainly from West Usambara; most of the remainder are indigenous Wasambaa.

The average farm size is only 2.5 acres per household, with a range of 1 - 6 acres. The major crops grown are bananas, cassava and maize in the highlands, and maize, beans, groundnuts and rice on plots lower down the escarpment. Many households have plots in both highland and lowland subvillages which enables them to grow a variety of crops and spread their risks. There are a few livestock in the village: 39 cows, 112 goats and 30 sheep at the time of the survey.

To supplement their farming income almost every household has at least one member working as a tea plucker for EUTCO. In addition some 40 households pluck tea as tenants on 1 acre plots allocated to them by EUTCO on a renewable annual lease.
Many farmers have registered their interest in planting tea on part of their holdings as outgrowers to EUTCO, but so far only one farmer has been enabled to do so.

A few farmers have planted trees on the boundaries of their holdings: Grevillea, Eucalyptus, Leucaena, mango and pawpaw. Three individual farmers and Ubiri Primary School have planted a total of about 5 acres of Eucalyptus under contract to EUTCO: the form of the agreement is attached at Annex 3. UVG has recently entered into an agreement with EUTCO to lease out 50 ha of unused village land for establishment of a Eucalyptus plantation: after two harvesting cycles the land will revert to the village. The lease agreement is attached at Annex 4.

4 Land Use Practices and Interest in Planting Trees

Despite the exposure of their soils to heavy rain and strong winds, and despite the steep slopes and shallow soils on which crops are grown, Ubiri farmers have adopted very few soil conservation measures. Cultivation is as often up and down the slopes as along the contours,

terraces are not built and windbreaks are not established. It is fortunate that the soil structure is relatively strong, as otherwise there would be terrible soil erosion.

There is much greater awareness of the need to protect water sources than to protect soils: no *Eucalyptus* is planted near valley bottoms or streams, and many farmers express interest in planting trees in and around the village, which they believe will increase mistiness and reduce the unreliability of rainfall.

Discussion of tree planting on farms also attracts much interest: mainly boundary planting or in blocks. Farmers' immediate motivation is to increase supplies of fuelwood and building poles, and to obtain food (especially fruit trees) and fodder for their animals. Their main interest is in fast growing exotic species (*Eucalyptus, Grevillea, Casuarina*), but interest is also shown in indigenous trees, particularly those seen in the TAFORI nursery during the study tour of West Usambara: *Cordia abyssinica, Acrocarpus fraxinifolia, Croton megalocarpus, Albizia schemperiana, Delonix regia, Cassia* spp.

The interest in indigenous species may be partly because farmers know that they are "politically acceptable" and hence easy to get help with, partly because they know the value of the timber, partly because they know the reputation of exotic species like Eucalyptus for water extraction. Nevertheless most farmers would only plant a few indigenous trees because of their slow growth rate, and because of the difficulty of establishing them: they are aware of the disastrous experience of the neighbouring village of Kwemwewe in 1994, when large numbers of indigenous trees were planted but almost none survived.

5 Farm Forestry Planning Proposals

Resulting from the PLA exercises described in paragraph 2, and drawing on the experience gained by Ubiri representatives on the study visits to West Usambara and Zanzibar, a provisional farm forestry plan was drawn up with UVG and women's groups and is reproduced at Annex 2.

There are gaps in the plan which are being pursued with UVG and women's groups by the EUCFP foresters at Kwamkoro and Mikwinini (the next village to Ubiri). The intention is to complete the plan before the end of the 1996 planting season, basing future projections on the experience of the 1996 season.

6 Progress in Implementation to Date

Four nurseries were established at Ubiri in late 1995 by farmer groups (2 men's, 1 women's, 1 youth's). One nursery was established by the school and one by an individual farmer. The species planted are *Albizia, Cassia, Casuarina, Cordia, Croton, Eucalyptus* and *Grevillea*. Other trees requested are cinnamon, clove, coconut, coffee, cypress and orange.

The *Eucalyptus* trees planted by the school, by EUTCO and by farmers on contract to EUTCO are doing well and are beginning to transform the local environment. Pockets of other species on farmers' farms are also being well tended.

7 Lessons Learned and Next Steps

Ubiri is one of the villages in East Usambara which has shown greatest interest in tree planting, being so short of fuel and building materials and so exposed to wind and weather. It has experimented with a range of different approaches to tree planting: individual and group nurseries, individual and village fuelwood contracts, individual boundary and block planting of various species. These need to be closely supported and monitored by EUCFP foresters.

So far the main interest and experience has been in planting trees in blocks or on field boundaries for their wood value, rather than interplanted with annual crops or on terraces with more of an environmental objective. This should be the next step, but care should be taken not to make the extension message, and its requirement for expertise and materials, more demanding than either the farmer or the extension officer can handle. A gradual approach is recommended.

ANNEX 1: SEQUENCE OF EVENTS IN UBIRI FARM FORESTRY PLANNING

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16.9.95	first UVG meeting arranged to discuss farm forestry planning. The meeting was cancelled because of a funeral
25.9.95	a joint UVG and Women's Group meeting was reconvened. 9 male farmers, 25 female and 5 EUCFP representatives present. The meeting was terminated halfway through because of a second funeral.
2.10.95	UVG meeting was held, and a plan for follow up action was agreed. 13 farmers and 4 EUCFP representatives present.
3-4.10.95	two day visit to Ubiri made by EUCFP team for participatory village mapping exercise (copy attached), transect walks, farm surveys and semi-structured interviewing.
5.10.95	Women's Group meeting held to discuss tree nurseries and other group activities. 20 women farmers and 4 EUCFP representatives attend.
17-20.10.95	four day study visit to farm forestry and village forest management sites in West Usambara. Three Ubiri farmers (Village Chairman, Chairperson of Women's Group and one village elder) participate.
14.11.95	follow up data collection at Ubiri for completing draft farm forestry plan.
24.11.95	UVG meeting held to present and discuss draft plan. 17 men, 9 women and 3 EUCFP representatives attend.
5-12.12.95	seven day study visit to farm forestry sites in Zanzibar, with one Ubiri representative (Women's Group Secretary).
19.12.95	UVG and Women's Group meeting arranged for viewing tree nurseries, finalising farm forestry plan and discussing follow up to Zanzibar study tour.

ANNEX 2: DRAFT UBIRI FARM FORESTRY PLAN

MPANGO WA KUPANDA MITI MASHAMBANI NA KIJIJINI
KIJIJI CHA UBIRI

1 Utangulizi

Serikali ya kijiji cha Ubiri, Wilaya ya Korogwe, baada ya mawasiliano marefu na washauri wa Mradi Hifadhi Misitu Usambara Mashariki (EUCFP), imeamua kuendeleza upandaji wa miti katika mashamba ya wakulima pamoja na maeneo ya kijiji. Mpango huo unaeleza malengo na utaratibu wa upandaji miti yaliyokubaliwa na kijiji, pamoja na mahitaji ya vifaa, ushauri na pesa inayoombwa kutoka kwa EUCFP.

2 Kijiji cha Ubiri

2.01 Kijiji kina kaaya 122 na idadi ya wakaaji ni 626, kama ilivyoonyeshwa hapo chini. Ukubwa wa mashamba kwa wastani ni ekari 2.5 kila kaya; shamba iliyo kubwa zaidi ni kama ekari 6 na iliyo ndogo sana ni ekari 0.5. Idadi ya mifugo inaonyeshwa hapo chini.

Table 1: Taarifa za Wakaaji na Mifugo, Ubiri

Idadi ya Watu	**Kiume**	**Kike**	**Jumla**
Wenye uwezo	139	167	306
Wasio na uwezo	10	13	23
Watoto	157	163	320
Jumla	306	343	649
Idadi ya Mifugo			
Ngombe	-	-	39
Mbuzi	-	-	112
Kondoo	-	-	30

2.02 Kijiji kina Msitu wa Asili inayoitwa Msitu wa Ubiri, ambayo ina umuhimu wa tambikio na madawa. Lakini eneo lake imepungua sana: inabaki kama ekari 3 tu.

2.03 Kwa hivyo wakaaji wa kijiji wana shida sana ya kuni, nguzo wa kujengea, mbao, nk, na wameamua kupanda miti katika mashamba yao pamoja, na kuongeza eneo la msitu wa kijiji, kama inavyoelezwa hapo chini.

3 Mahitaji ya Miche ya Kupanda

3.01 Ramani ya kijiji iliyoambatanishwa inaonyesha eneo la mashamba, misitu, malisho na sehemu inayofaa kupanda miti kijijini.

3.02 Wakulima 47 wamejiandikisha kupanda miti katika mashamba yao kwa msimu wa vuli 1995. Orodha ya maombi imeambatanishwa. Kwa wastani kila mkulima anataka miche 100: aina ya miti inayoombwa ni: mikabera, mnyasa, mtambaa, michungwa, n.k.

3.03 Wakulima wengine (35) wanapenda kupanda miti kwenye mipaka ya mashamba yao. Wakulima 44 wameamua kupanda kwenye "Block Farm". Wakulima 15 wanapenda Kilimo Mseto, yaani mchanganyiko ya miti na mazao katika mashamba yao.

3.04 Wakulima wanapenda kuanzisha vitalu 5 kama taarifa inayoonyesha. Mahitaji ya miche na mahitaji mengine yanaonyeshwa kwenye jedwali hapo chini.

Table 2: Malengo na Mahitaji ya Kupanda Miti, 1996-2000

	95-96	96-97	97-98	98-99	99-00	Jumla
Ekari za kupanda miti	...	...	...	...	...	...
Idadi ya wapandaji	...	...	...	...	...	...
Mahitaji ya Miche	30,000	...	...	...	...	...
Namba ya Vitalu	-	5	...	...	...	...
Mahitaji ya mbegu (kg)	-	...	...	...	...	...
Mahitaji ya mifuko (kg)	-	...	...	...	...	...

4 Mahitaji ya Pesa

4.01 Ili kutekeleza malengo yanayoonyeshwa hapo juu, kijiji kitahitaji fungo la pesa inayoonyeshwa katika Table 3.

4.02 Serekali ya kijiji imeamua kwamba, miche na mbegu ya kuanzisha vitalu yakipatikana bila malipo mwaka 1995-96, miaka ya mbele wenye vitalu watalipa gharama za mbegu na vifaa na kuuza miche kwa wakulima ili kupunguza gharama za mradi na kuhakikishia kwamba wakulima wanaheshimu mali wanayopokea.

4.03 Licha ya mbegu na vifaa, kijiji kinaomba kwamba Mradi wa EUCFP iendelee kuwaletea ushauri wa kitaalam pamoja na kupanga "Study Tours" ili wakulima waweze kujifunza kutokana na zoezi ya wenzao. Gharama za huduma hayo yamo kwenye makisio ya Table 3.

Table 3: Makisio ya Mpango Kilimo Msetu, Ubiri 1995-2000

	95-96 Tshs	96-97 Tshs	97-98 Tshs	98-99 Tshs	99-00 Tshs	Jumla Tshs
Miche						
Vifaa vya Vitalu						
Ushauri						
Ziara						
Jumla						

5 Mwisho

Tunataka kuutekeleza mpango huu kama tulivyopanga ili kuondoa tatizo la kuni, mbao, majengo n.k. na kuhifadhi msitu wetu unayobaki.

Sahihi..... (Mwenyekiti)

Sahihi..... (Katibu)

Sahihi..... (Bw Miti)

Appendix 10.

CASE STUDY NO.4:

POTWE NDONDONDO FARM FORESTRY DEVELOPMENT PLAN

1 Background

Potwe Ndondondo is at the foot of the escarpment on the southern extremity of the East Usambara Mountains. Although in Muheza District it is just as easily reached from Korogwe. It borders on Kihuhwi Teak Forest Reserve to the east, Potwe Sisal Estate to the south and Kwamsambia Forest Reserve to the north.

Potwe has some degraded wooded highland on the slopes of the mountain, and flatter agricultural land at the foot of the escarpment. An area of about 150 ha of Potwe's forest land was taken into Kwamsambia Forest Reserve in 1994, to be incorporated in the proposed Amani Nature Reserve. Although the village received a similar area of land from the sisal estate in exchange, as well as financial compensation for crops and houses, this move made the farmers more conscious of the need to plant trees and conserve their natural resources. Potwe was therefore chosen as one of the pilot villages for attention under EUCFP's farm forestry programme.

2 Approach Adopted and Sequence of Events

The same participatory approach to planning was adopted at Potwe as that described in Appendix 9 for Ubiri. The schedule of meetings held with the Village Government, farm surveys, participatory mapping and study tours involving Potwe representatives is at Annex 1. As result of these exercises a first draft of Potwe's farm forestry development plan was prepared and is at Annex 2.

3 Village Profile

Potwe has 9 sub-villages with a total population of 3,134 in 570 households (1988 census figures). Breakdown is shown in Table 1 of Annex 2.

The village covers a total land area of approximately 1,500 ha. The average farm size is 3 acres (1.2 ha) with a range from 1 to 6 acres. Most farmers have highland as well as lowland fields. Some obtained land in the sisal estate, but this was not equitably distributed and has been the cause of some dissension.

Some households have livestock: at the time of the survey there were around 63 cows, 292 goats and 54 sheep in the village.

Potwe is running short of woodland for fuel and building poles, particularly since the acquisition of part of its highland for inclusion in the Nature Reserve. There is a small area of natural forest in the village, about 2 ha, which has ritual importance.

Many Potwe farmers used to work on sisal estates, but with the decline of the sisal sector they have had to seek other income earning opportunities. Many carry produce up the escarpment

to Kwamkoro for sale to EUTCO estate workers: tomatoes, onions, coconuts and "mnazi" (a liquor made from coconut sap).

4 Interest in Planting Trees

Some farmers have planted trees on their holdings, mainly on the boundaries, and mainly *Grevillea*, *Albizia* and teak. They are now interested in a range of trees: mango, coconut, orange, clove, cinnamon, coffee as well as more *Grevillea*, *Albizia*, teak, *Acrocarpus* and to a lesser extent *Eucalyptus*.

Three tree nurseries have been established and some 47 farmers have placed orders for seedlings which they will plant in 1996.

5 Farm Forestry Planning Proposals

Resulting from the participatory planning exercises and from experience gained by Potwe farmers who participated in the study visits to West Usambara and Zanzibar, the provisional farm forestry plan reproduced at Annex 2 was drawn up.

Like the Ubiri plan, there are gaps which are being pursued by the EUCFP forester posted at Potwe. The intention is to complete the plan by the end of the 1996 season.

6 Lessons Learned and Next Steps

Potwe farmers have been forced by their growing land shortage and exclusion from natural forests to take tree planting more seriously in order to supplement supplies of firewood and building materials. The nurseries established for this purpose and the immediate tree planting programme which is planned for 1996 need active support by the EUCFP forester.

Potwe's lowland farms are very suitable for boundary planting and interplanting with non-competitive and nitrogen-fixing species like *Grevillea, Albizia, Leucaena* and *Gliricidia*. Promotion of these technologies should be the next step in the farm forestry planning process.

Annex 1: Schedule of Meetings and Exercises

14.9.95	first meetiing of EUCFP team with Potwe Village Government scheduled; cancelled at short notice
20.9.95	meeting of EUCFP team (5 members) with Village Government (30 male farmers, 3 female)
26.9.95	farm surveys (4 farms) by consultant and 2 EUCFP foresters
27.9.95	continuation of farm surveys (6 highland and lowland plots)
1-30.10.95	EUCFP forester and Ministry of Agriculture extension officer collect data and requests for tree seeds and seedlings
17-20.10.95	Village Chairman and Women's Group Chairperson participate in Study Tour to West Usambara
11.11.95	Participatory village mapping exercise (12 male and 6 female farmers participating)
27.11.95	draft plan and village map discussed with village chairman and committee members
1-30.12.95	nursery establishment
5-12.12.95	Village Chairman participates in 7 day study visit to Zanzibar

ANNEX 2

MPANGO WA KUPANDA MITI MASHAMBANI NA KIJIJINI
KIJIJI CHA POTWE NDONDONDO

1 Utangulizi

Serikali ya kijiji cha Potwe Ndondondo, Wilaya ya Muheza, baada ya mawasiliano marefu na washauri wa Mradi Hifadhi Misitu Usambara Mashariki (EUCFP), imeamua kuendeleza upandaji wa miti katika mashamba ya wakulima pamoja na maeneo ya kijiji. Mpango huo unaeleza malengo na utaratibu wa upandaji miti yaliyokubaliwa na kijiji, pamoja na mahitaji ya vifaa, ushauri na pesa inayoombwa kutoka kwa EUCFP.

2 Kijiji cha Potwe-Ndondondo

2.01 Kijiji kina kaaya 570 na idadi ya wakaaji ni 3,134, kama ilivyoonyeshwa hapo chini. Ukubwa wa mashamba kwa wastani ni ekari 2.5 kila kaya; shamba iliyo kubwa zaidi ni kama ekari 6 na iliyo ndogo sana ni ekari 0.5. Idadi ya mifugo inaonyeshwa hapo chini.

Table 1: Taarifa za Wakaaji na Mifugo, Potwe Ndondondo

Idadi ya Watu	**Kiume**	**Kike**	**Jumla**
Wenye uwezo	574	630	1,204
Wasio na uwezo	84	96	180
Watoto	817	933	1,750
Jumla	1,417	1,659	3,134
Idadi ya Mifugo			
Ngombe	-	-	63
Mbuzi	-	-	292
Kondoo	-	-	54

2.02 Eneo la ekari... yaliyokuwa mashamba ya kijiji, yakipakana na Msitu wa Kwamkoro, yameingizwa kwenye Forest Reserve na kulipiwa fidia. Eneo la ekari 375 katika Shamba ya Mkonge imegawiwa kwa wanavijiji, lakina eneo hilo halina miti.
2.03 Kijiji kina Msitu wa Asili inayoitwa Msitu wa Potwe, ambayo ina umuhimu wa tambikio na madawa. Lakini eneo lake imepungua sana: inabaki kama ekari 5 tu.

2.04 Kwa hivyo wakaaji wa kijiji wana shida sana ya kuni, nguzo wa kujengea, mbao, nk, na wameamua kupanda miti katika mashamba yao pamoja, na kuongeza eneo la msitu wa kijiji, kama inavyoelezwa hapo chini.

3 Mahitaji ya Miche ya Kupanda

3.01 Ramani ya kijiji iliyoambatanishwa inaonyesha eneo la mashamba, misitu, malisho na sehemu inayofaa kupanda miti kijijini.

3.02 Wakulima 47 wamejiandikisha kupanda miti katika mashamba yao kwa msimu wa vuli 1995. Orodha ya maombi imeambatanishwa. Kwa wastani kila mkulima anataka miche 100: aina ya miti inayoombwa ni: mikabera, mitiki, mshai, kahawa, karafu, mdalasini, kakao.

3.03 Wakulima wengi (26) wanapenda kupanda miti kwenye mipaka ya mashamba yao. Wakulima 8 wameamua kupanda kwenye "Block Farm". Wakulima 7 wanapenda Kilimo Mseto, yaani mchanganyiko ya miti na mazao katika mashamba yao.

3.04 Wakulima 5 wanapenda kufungua bustani ya miti, kwa mahitaji yao pamoja na kuwauzia wenzao.

3.05 Mahitaji ya miche, mbegu, mifuko na vifaa vingine, pamoja na gharama zake, yameonyeshwa kwenye makisio ya mpango hapo chini.

Table 2: Malengo na Mahitaji ya Kupanda Miti, 1996-2000

	95-96	96-97	97-98	98-99	99-00	Jumla
Ekari za kupanda miti	...	...	...	...	...	...
Idadi ya wapandaji	...	...	...	...	...	...
Mahitaji ya Miche	5,000	...	...	...	...	...
Namba ya Vitalu	-	3	...	...	...	...
Mahitaji ya mbegu (kg)	-	...	...	...	...	...
Mahitaji ya mifuko (kg)	-	...	...	...	...	...

4 Mahitaji ya Pesa

4.01 Ili kutekeleza malengo yanayoonyeshwa hapo juu, kijiji kitahitaji fungo la pesa inayoonyeshwa katika Table 3.

4.02 Serekali ya kijiji imeamua kwamba, miche na mbegu ya kuanzisha vitalu yakipatikana bila malipo mwaka 1995-96, miaka ya mbele wenye vitalu watalipa gharama za mbegu na vifaa na kuuza miche kwa wakulima ili kupunguza gharama za mradi na kuhakikishia kwamba wakulima wanaheshimu mali wanayopokea.

4.03 Licha ya mbegu na vifaa, kijiji kinaomba kwamba Mradi wa EUCFP iendelee kuwaletea ushauri wa kitaalam pamoja na kupanga "Study Tours" ili wakulima waweze kujifunza kutokana na zoezi ya wenzao. Gharama za huduma hayo yamo kwenye makisio ya Table 3.

Table 3: Makisio ya Mpango Kilimo Msetu, Potwe Ndondondo, 1995-2000

	95-96 Tshs	96-97 Tshs	97-98 Tshs	98-99 Tshs	99-00 Tshs	Jumla Tshs
Miche						
Vifaa vya Vitalu						
Extension						
Study Tours						
Jumla						

5 Mwisho

Mpango huu ukitekelezwa vizuri, wakaaji wa kijiji cha Potwe Ndondondo hawatakuwa na shida ya kuni, nguzo, mbao na mahitaji yao mengine ya miti, na msitu wao utahifadhiwa.

Saini:..... (Mwenyekiti)

Saini:..... (Katibu)

Saini..... (Bw Miti)

Appendix 11.

PROPOSED ITINERARY FOR EAST USAMBARA CATCHMENT FOREST PROJECT STUDY TOUR OF SECAP AND TAFORI, LUSHOTO, 17-20 OCTOBER 1995

Tuesday 17 October

12.00 hrs	Team arrives Lushoto from Tanga, arranges hotels
14.00 hrs	Briefing at SECAP office (Waldmuller, Shebuge, Nandrie, Saria/Pallangyo)
15.00 hrs	Briefing at TAFORI, visit tree nursery (Msangi, Mwihomeke, Shemkongwa)

Wednesday 18 October (accompanied by Saria/Makundi)

08.00 hrs	Leave Lushoto for Mabugai Agro-forestry Demonstration Plot (visit 08.30-09.00)
09.00 hrs	Drive to Peter Kime's Passion Fruit Farm, Mabugai (visit 09.15-10.00)
10.00 hrs	Drive to Halide Mnkande's farm, Kibaoni Longoi (visit 10.15-11.00, see Grevillea, pears, multi-purpose trees planted on contours and boundaries)
11.00 hrs	To Clement Shemboko's farm, Rangwe (see fruit tree nursery, 11.30-12.00)
12.00 hrs	To Paul Penzel's farm, Malindi (see fruit trees, coffee, Grevillea, dairy, fodder crops, vegetable garden)
13.00 hrs	To Lukozi for lunch
14.30 hrs	Visit Chambogo Local Authority Forest Reserve, see trees planted in Protected Zone and Open Zone, discussions with Mr Nandrie and Village Chairmen
17.00 hrs	Return to Lushoto

Thursday 19 October (accompanied by Shebuge/Makundi)

08.00 hrs	Leave Lushoto for Soni and Mzungu. See private nursery of Amiri Omari (08.30-09.00) and Kwamongo Hilltop Afforestration Programme (09.00-10.00) - explanation by Mr Shiyo and Village Chairman/Representative
10.00 hrs	Drive to Magila Primary School (Teacher-in-charge Mr Shemdoe), see school tree nursery and tea/Eucalyptus plantations (visit 10.15-11.00)
11.00 hrs	Drive through Mponde (tea smallholdings, Eucalyptus plots) to Bumbuli
12.00 hrs	Lunch in Bumbuli
13.00 hrs	Drive to William Mauya's farm, Kwalei. See bench terraces, fruit trees, indigenous tree species (visit 13.30-14.00)
14.00 hrs	Drive to Mbelei, see Kiguha/Kijewa hilltop afforestation, boundary planting. Explanation by Mr Komba (Divisional Extension Officer, Soni), Mr Shiyo (Forester), and Kiguha/Kijewa

	Village Chairmen
16.00 hrs	Return to Lushoto, seeing traditional agro-forestry plots en route

Friday 20 October

08.00 hrs	Round-up discussion at SECAP (TAFORI to participate
10.30 hrs (approx)	Depart for Tanga

TENTATIVE SCHEDULE FOR EAST USAMBARA PROJECT IN ZANZIBAR

Date	Time	Activities	Place	Responsible
6.12.95	08:00	Introduction	Maruhubi office	Mr Thabit
	08:45	Local based management	Kisakasaka	Mr. Khatib/villagers
	12:00	Woodlot local based management	Cheju	Mr. Soud/Villagers
7.12.95	08:00	Woodlot Beekeeping Small-scale nursery	Muwanda	Mr. Iddy/farmers
	11:30	Woodlot Small-scale nursery	Gamba	Mr. Saidi/Remmy Punda afe
	13:00	Local based management	Kiwengwa	Mr. Iddy
8.12.95	08:00	Central nursery	Mwanyanya	Ms. Khadija
	09:15	Nature trail Botanical garden Plantation Erosion Ruins	Masingini	Mr. Othman
9.12.95	08:00	Central nursery Nature trail Colobus monkey	Jozani	Mr. Mtumwa
	11:00	Agroforestry	Muungoni	Mr. Saidi/ Ms.Zuwena
	12:30	Beekeeping	Muyuni	Ms. Mwajuma/ Mr. Mkamba
10.12.95		Optional		
11.12.95	08:00	Agroforestry On-farm trial	Bambi	Mr. Saidi
	09:30	Innovative farmer	Chwake	Mr. Fadhil/ Soud
	11:30	Government plantation	Dunga Jendele	Mr. Tahir
	13:00	Species trial	Kibele	Mr. Mohdsoud

ZANZIBAR STUDY TOUR

TASKS FOR IMPLEMENTATION

1. Visiting Farmers' tree planting and wood lots in different districts.

2. Visiting Farmers' agroforestry plots - includes where farmers incoorporates crops with trees and animals in ther farming system, and on-farm agroforestry trial.

3. Small scale nurseries - these are farmers (groups or individuals) owned home/village nursefries established to provide seedling for their own needs and for sale to generate income.

4. Local Mangement Forests - these are the natural forests where villagers decided to take care of the them and came up with idea. Here the villagers can express themselves how and why they came up with this idea and how worth it is.

5. Beekeeping activities - apart of conservation trees for wood products you will see how we encourage farmers to get non-wood products and income in their forests through beekeeping a process which also reduce forests destruction.

Appendix 12.

FARM FORESTRY SPECIES SUITABLE FOR EAST USAMBARA

SPECIES	LOCAL NAME	USES	FEATURES
Albizia gummifera	Mshaimamba	Firewood, timber, fodder, soil conservation, shade	N fixing, fast growing, coppices
Albizia schimperiana	Mshai	As above	As above. Best planted under other trees
Acrocarpus fraxinifolius	Mkapasi	Fuel, timber, mulch, shade, soil conservation, windbreak	Fast growing, germination difficult, competes with crops
Azadirachta indica	Mwarubaini Neem	Medicines, fodder, soil conservation, insecticide, shade	Fast growing, coppices, good avenue tree
Calliandra calothyrsus	Calliandra	Fodder, fuel, poles, bee forage, soil conservation	N fixing, fast growing, coppices
Cassia siamea	Mjohoro	Fuel, poles, timber	
Casuarina equisetifolia	Mvinje Msindano	Fuel, poles, timber, mulch fodder, soil conservation	N fixing, fast growing
Cedrela odorata	Msedrera	Supports black pepper	Pollards
Citrus sinensis	Mchungwa Orange	Fruit	Better at low altitude
Cordia africana	Mfufu Mringaringa	Fuel, timber, shade, mulch, soil conservation	Slow growing, boundary demarcation
Croton megalocarpus	Mkuti	Fuel, timber, shade, mulch, tool handles	Fast growing, competes with crops, coppices
Delonix regia	Mkakaya	Fuel, shade, ornamental	Fast growing, competes
Eucalyptus saligna	Mkaratusi	Fuel, poles, timber, shade bee forage	Fast growing, coppices, competes for water and nutrients
Gliricidia sepium		Fuel, poles, fodder, mulch soil conservation	Fast growing, coppices
Grevillea robusta	Mkabera Mgrivea	Fuel, timber, fodder, mulch shade	Good for intercrop, moderate to fast growing
Hakea saligna	Mhakia	Fuel, shade, windbreak, soil conservation	Fairly fast, shelterbelt in tea

Leucaena leucocophela	Mbegu Mpopote	Fuel, fodder, mulch, soil conservation	N fixing, alleycrop, invasive
Mangifera indica	Mwembe	Fruit, fuel, soil conservation	
Milicia excelsa	Mvule	Timber, fuel, shade	Slow growing, hardwood
Newtonia buchananii	Mnyasa	Timber,fuel, fodder, shade	Fairly fast as hardwood
Persia americana	Mparachichi Avocado	Fruit, oil, shade	Grows fast, good for boundaries
Sesbania sesban		Fuel, poles, fodder, soil conservation	Grows fast, coppices, intercrops
Tectona grandis	Mtiki Teak	Fuel, timber, poles	Best at low altitudes, high value hardwood

Appendix 13.

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Appendix 14.

CONTACTS MADE IN THE CONSULTANCY

1 Tanga:

1.01 East Usambara Catchment Forest Project
- (1) MIL Katigula, Project Manager
- (2) Stig Johannson, Chief Technical Adviser
- (3) Stephen Mmasi, Asst Deputy Project Manager
- (4) Mwanaidi Kijazi, Deputy in charge, Extension
- (5) Luciana Mshana, In charge, Survey and Mapping

1.02 Regional Administration
- (1) L.L.J. Massawe, Regional Forest Officer

1.03 Tanga Coastal Zone Conservation Programme
- (1) Monica Gorman, Community Development Adviser

2 Muheza District

2.01 District Administration
- (1) F.M. Shelutete, District Commissioner
- (2) D.O. Izina, District Executive Director
- (3) E.E. Lyamere, District Forest Officer

2.02 Members of Parliament
- (1) J.S. Semwaiko, MP Muheza
- (2) H. Kitandula, MP Maramba

3 Kwamkoro Field Station
- (1) Bruno Mallya, Asst Forest Officer i/c
- (2) Frank Mahenge, Asst Forest Officer
- (3) Agnes Boi, Forest Asst

4 Maramba Field Station
- (1) Emmanuel Msoffe, Asst Forest Officer i/c

5 Longuza Field Station
- (1) Jared Otieno, Asst Forest Officer i/c
- (2) John Matukoro, Asst Forest Officer
- (3) Kelvin Mndeme, Asst Forest Officer

6 Vuga and Hemsambia Villages

6.01 Vuga
- (1) Yohanna Chambo, Chairman, Village Government
- (2) Frederick Makelemo Mahemo, Diwani
- (3) Chadi John Daffa, Secretary, Mpanga Forest Committee
- (4) Mussa Kisusi, Chairman, Mpanga Sub-village

(5) Paulo Mbwana, Member, Village Government
(6) Francis Tunguli, Forest Assistant, Gombero
(7) Anna Kiangu, Secretary CCM
(8) Shaban Shemkingo, Agricultural Assistant, Daluni
(9) Mzee Keka, Village Elder
(10) Farmers

6.02 Hemsambia
(1) Omari Mwasingo Mwadare, Chairman, Village Government
(2) Athumani Kitojo, Chairman, Mpanga Forest Committee
(3) Francis Shunda, Member, Mpanga Forest Committee
(4) Farmers

7 Mgambo Village
(1) Yahaya Omari, Chairman, Village Government
(2) Haji Saidi, Village Executive Officer
(3) Filipo Mdoe, IUCN Village Co-ordinator
(4) Moses Waziri, CCM and Village Government Secretary
(5) Ali Mwichande, CCM Ward Chairman
(6) Farmers

8 Ubiri Village
(1) Hizza Allen, Chairman, Village Government
(2) Francis Mganga, Secretary
(3) Ali Mohammed, Village Executive Officer
(4) Abdullah Kirefu, Member, Village Government
(5) Beatrice Shumari, Chairperson, Women's Group
(6) Doris Mganga, Secretary, Women's Group
(7) Farmers

9 Potwe Village
(1) Francis Machupa, Chairman, Village Government
(2) Francis Patrick, Forest Assistant
(3) Daima Shabani, Chairperson, Women's Group
(4) Chaka Simba, Chairman, Potwe Mpirani
(5) Agatha Mhando, Teacher
(6) Petro Joseph Shemzungu, Member, Village Government
(7) Farmers

10 West Usambara

10.01 Soil Conservation and Erosion Control Project
(1) Luis Waldmuller, Project Manager
(2) Richard Shebuge, Agricultural Extensionist
(3) Joseph Nandrie, Forester
(4) S Pallangeyo, Horticulturalist

10.02 Tanzania Forest Research Institute
(1) T.H. Msangi, Forest Officer i/c
(2) Stephen Mwihomeke, i/c Agroforestry

(3) A.S. Shemkongwa, i/c Nursery

10.03 Farmers and Village Leaders
(1) Peter Kime, Mabughai
(2) Khalid Mnkande, Kibaoni Longoi
(3) Mrs Shemboko, Rangwe
(4) Paul Penzel, Malindi
(5) Chambogo farmers
(6) Amiri Omari, Shashui
(7) Francis Shemdoe, Headmaster, Magila School
(8) William Mauya, Kwalei
(9) Godfrey Mandiye, Mbelei

11 Zanzibar
(1) Abdalla Jae Ibrahim, Forest Officer
(2) Ameir Hamid, Regional Forest Officer, South
(3) Ali Rashid Sululu, District Forest Officer, South
(4) Mtumwa Ame, i/c Jozani Station
(5) Jafar Ishak Khamisi, Ecologist
(6) Bi Zuwena, Farmer
(7) Mkamba Khamisi, Beekeeper
(8) Yazidi Makame, Farmer

12 FINNIDA/FPS
(1) Seija Kinni, Finnish Embassy, Dar es Salaam
(2) Matti Määttä, Forest and Park Service, Finland