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THE EXTENSION AND COMMUNICATION

PROGRAMME FOR THE EAST USAMBARA

CATCHMENT FOREST PROJECT

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East Usambara Catchment Forest Project

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by:

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<u>**EXECUTIVE SUMMARY**</u>

Objectives:

The extension and communication programme consultancy was commissioned by the East Usambara Catchment Forest Project (EUCFP). The terms of reference have an overall objective of developing a means of communication which can help the project present its objectives and ideas to the local people and enlist their cooperation as a way of sustaining the project activities. Specific objectives of the study includes: Identifying felt needs of the farmers; proposing extension packages which can meet the felt needs of the people so as to solicit their cooperation in safeguarding the forest reserves; identifying appropriate extension methods which can be used to reach these people; and to propose a training programme which can promote genuine participation of both extension agents and the general public.

Study Methodology:

In order to achieve the objectives as stipulated in the Terms of Reference a multi-method approach was used. The approach facilitated the collection of different types of data and information. This approach also led to an understanding of indigenous knowledge systems surrounding trees/forests. Even though each of these research methods were applied individually, they were developed and used in an integrated fashion and the resultant data were analyzed both individually and collectively.

Four target groups were identified and interviewed. These includes: farmers, extension workers, functional officers at the district and regional levels and the management of the East Usambara Agricultural Development and Environment Conservation Project.

Findings:

(i) <u>Farmers</u>:

- Women were found to be more marginalized than men. Therefore need for special attention;
- The literacy level is satisfactory;
- Labour for tree growing is a constraint at a household level because the time for farm activities for crop production often coincide with tree planting since rainfall is limited to certain months only;
- Most farmers in the study areas have been living in the same villages for an average of 28 years and farming in the land for at least 19 years. Therefore most of them have accumulated enough indigenous knowledge which can be tapped by the extension agents for the success of the project.
- Land is essentially acquired through inheritance and most land use decisions are made by men.
- Cassava serves as the main food crop in pre-harvest period while maize is the main crop in post-harvest period.
- There is a general decline in productivity of these staple food crop due to over cultivation and insufficient follow-periods.

- Most farmers had either planted or retained trees in their farms.
- Besides their own farms, farmers also get their woodproducts from forest reserves.
- Extension services are rather poor.

(ii) Extension workers:

- The number of women extension workers is very low.
- Most of the extension workers are experienced.
- Most of them perform only duties scheduled in their job descriptions, contrary to the prevailing general situation in Tanzania whereby extension workers perform duties other than those they were trained for.
- There is a general feeling of the need for further training among the extension workers.
- Most extension workers seem at the moment to be concerned mostly with forest patrols than visiting farmers. This trend should be change if the project is to attain its mission of participatory forest management.

(iii) Function officers:

- All interviewed functional officers at the regional and district level were experienced people.
- There is adequate number of field staff especially in Muheza district.
- Functional officers in Agriculture/livestock felt that there is a need for training/retraining of their staff.
- Those in forestry however, thought that their staff are well trained. The researchers feel that, it may be true that forestry staff are well trained in technical issues but definitely they lack extension and communication skills.

(iv) The potential collaborative institution:

The East Usambara Agricultural and Environmental Project.

- The success of the East Usambara Catchment Forest Project will be influenced to a great extent by the success of the East Usambara Agricultural Development and Environmental Project. In short the pressure in the forest reserves will be reduced only if farmers can get their felt needs from outside the reserves.
- There is need for collaboration between the two projects through joint training sessions and field activities.

Extension programme:

An extension programme is made up by:
- extension packages;
- extension methods;
- monitoring, evaluation, and feedback programme; and
- reorientation and training/retraining programme.

(i) Extension packages:

An extension package is the set of innovations proposed by a project for use by local people. Ideally this should be based on the local needs and conditions. In this study the following extension packages have been suggested as a starting point:

- buffer zones (both internal and external);
- agroforestry systems;
- community woodlots;
- small scale - forest based enterprises; and,
- enrichment planting.

(ii) Extension methods:

Appropriate methods which extension staff of the project can use fall into three main categories:

- individual methods;
- group methods;
- mass methods.

(iii) Monitoring, evaluation and feedback:

Monitoring is a continuous or periodic surveillance over the implementation of the project to ensure that input deliveries, work schedule, targeted outputs and other required actions are proceedings according to plan. Evaluation is a systematic approach to assessing as objectively as possible the relevance, effectiveness and impact of the project in the context of the project activities and the needs of the people. Feedback can be defined as applying promptly and effectively information gathered by the monitoring or evaluation processes to promote the achievement of the project objectives or to rectify factors impending its achievement.

(iv) Reorientation and training/retraining:

Reorientation is defined in this study as the process of enabling the extension agents or field staff actively participate in forestry development. Reorientation encompasses change in value systems and attitudes whereas training and retraining refer to a process of acquisition of knowledge and skills.

Reorientation will enable the field staff to:

- take initiatives, change their attitudes and develop commitment to forestry development; and
- participate in forestry activities by developing new relationships with villagers and subsequently institutionalizing their new roles and working styles.

The field staff need to be seen as "active and creative" as agents in their own right, not simply as respondents of stimuli. In order this to happen three strategies are needed:

- participatory workshops;
- field support; and
- institutional changes.

Training/retraining form a major element in the establishment and implementation of a forestry extension programme. Training/retraining in this study, for convenience is considered under two main headings:

- formal staff education and training in extension; and
- public information and training programme.

There must, however, be close coordination between all forms and levels of training to ensure that they serve common objectives and seek to reach these by compatible means.

ACKNOWLEDGEMENT

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EUADEC East Usambara Agricultural Development and Environmental Conservation Project

EUCFP   East Usambara Catchment Forest Project

1.   INTRODUCTION

1.1   Project Area
1.1.1 Location & Physical Features

The East Usambaras are a range of low mountains close to the coast in the north-eastern corner of Tanzania. They cover an area of 1,300 Km^2 between 4° 48' and 5° 13' S and 38° 32' and 38° 48' E. On their eastern edge they are only 40 km from the sea and are often readily visible from the port town of Tanga. Proximity to the Sea contributes to their high rainfall and probably also, in comparison with inland parts of Tanzania, to the exceptionally low temperatures experienced on their upper slopes.   Administratively the mountains fall into two districts Muheza and Korogwe, both part of Tanga Region.

The mountains rise steeply from the coastal plain (at 250 m) to from a plateau region at about 1000 m. Some of the individual peaks reach 1400 m. The plateau itself is dissected by many steep-sided ridges and valleys.

Rainfall is monsoonal, increasing with attitude from 1200 mm in the highest areas. Totals are higher on South-east facing slopes as they are exposed to the moist winds from the Indian ocean. Temperatures drop with attitude. The mean monthly maximum at Amani is 28.8^o C, compared with 30.4^{o}C in Tanga Town.

1.1.2 Land Use

For the last several hundred years, the inhabitants of the East Usambara have been the Wasambaa, while those in the low lands have been the Wabondei. The East Usambaras have always been more sparsely populated than the west.

Under German Colonial occupation a number of forest reserves were created and policed with vigour. Areas outside those reserves were cleared for coffee, sisal, rubber, oil palm and teak. During the British colonial period the coffee plantations were largely abandoned, and emphasis was placed on timber and tea production. As the problems of soil erosion and climate change resulting from the earlier forest clearance became evident plantation owners were banned from destroying more forests. Some plantation areas were also replanted as forest reserves under compulsory purchase orders.   The forest reserves established by the German administration therefore grew in size.

After independence, a number of factors led to an escalation of forest clearance. Many more concessions were made to local people, allowing them cultivation rights in the former forest reserves. There was a decline in the tea industry which resulted in exodus of tea workers seeking local land to cultivate, and this added to the influx of outsiders already looking for farming lands and jobs in the timber industry. The result was a great increase in population and smallholder farming at the expense of the forests. At lower attitudes the expansion has been mainly on public land and degazetted forest reserves, while at higher attitudes the expansion has taken place primarily on leased land belonging to the tea estates.

Accumulating national and international concern on the fate of the East Usambaras strengthened by the Amani Forest and Management Plan Project, led to a ban of industrial logging in the East Usambara Forest Reserves in 1986.

In order to protect these precious forests, two projects were initiated namely The East Usambara Agricultural Development and Environmental Conservation Project (EUADECP) and the East Usambara Catchment forest project (EUCFP). The former is working in the public land while the latter is mandated to work on the Forest Reserves.

1.2. Problem Statement

The favour for more participatory approaches in managing the East Usambara Catchment forests is evident. This came on the growing realization that individual responsibility and people's action are far superior to anything that may be designed by commissars or bureaucrats, even if they masquerade as guardian angels (Umali 1982). The bottom line of this argument is that the general public can and should become full partners in forestry development and conservation. Stated in other words the formerly simple task of forestry has now taken a new and gigantic dimension owing to changing patterns in society and environment (Magno 1985). As such, forestry has become more of social or people's business (Castro 1984) and is now fast shedding its feathers as a purely physical activity.

The road, however, is not and never has been smooth to such metamorphosis (Magno 1985). Those who are familiar with efforts of some forest projects in Tanzania to "wrench" forestry's traditional stress on technical concerns and corporate profit, and turn attention to issues of social equity, poverty and popular participation would readily admit that such efforts did involve and are still encountering tremendous technical, institutional and political problems. Needless to say, the new role and posture that the East Usambara catchment Forest Project has taken would eventually entail bigger and more insurmountable difficulties on the part of the project management. Corresponding changes thus should be simultaneously made in the way foresters carry things in relation to people, particularly the rural poor who compose the bulk of the population of the East Usambaras and who are purportedly the main target of the envisaged participatory extension programme.

Experience gained so far has shown that most projects implemented by those who will benefit from them provide a certain guarantee that the work will be done and that future operations and maintenance will be taken care of (Bugnicourt 1982). When projects are implemented by outsiders with all resources provided, all planning and implementation process completed while the local populace watches it happen it is no wonder that the projects are not sustained (Mayfield 1985). The expected maintenance is not carried out and the local leaders do not emerge to take charge after the outsiders have gone. People's participation is said to occur when programmes/projects which are desired and utilized by the people are effectively sustained by them after the external support has been phased out.

However, despite of rhetoric on people's participation in forestry development in Tanzania, there is ample evidence that the performance is not encouraging and authentic participation is far from reality (Ndossi, 1990). This study is geared

towards realizing active and genuine participation in the East Usambara Catchment Forest Project.

1.3. Study Objectives

The overall objective of this study is to develop a means of communication which can help the project to present its objectives and ideas to the local people and enlist their cooperation as a way of sustaining the project activities.

Specific objectives of the study includes:
(i)   Identifying felt needs of the farmers.
(ii)   Proposing extension packages which can meet the felt needs of the farmers so as to solicit their cooperation in safeguarding the forest reserves.
(iii)   To identify appropriate extension methods which can be used to reach these people.
(iv)   To propose a training programme which can promote genuine participation of both extension agents and general public.

2. THEORETICAL ORIENTATION

2.1. The Need for New Forestry "Outlook"

Traditionally the public forest service in Tanzania has been a motive force in the sector. There is still an important place for the forester as a Skilled Manager and protector of forests. It is necessary however, to examine the roles involved in the forestry's support to rural development, and the alternative way of organizing it (Kajembe, 1988).

In many developing countries it is now recognised that forestry's administrative structures must be changed if "foresters" are to become agents of development instead of being only conservationists (FAO, 1981). The function of a forester in the field in Tanzania has been partly that of a policemen. Understandably this has widely led to friction at the local level between the forest service and the people, who see themselves being kept out of the forest in order that others may consume its produce. This makes it difficult for the forester now to be able to establish the rapport with the people which is necessary if he, or she is to be an effective extension agent (Wiersum, 1984). The role of the forester is not only purely technical but also social in the sense of making decisions in long interests of all concerned. On occasion it may involve the embarrassing problem of placing the interests of some distant public authority or private owner above the short term interests of the local population.

The question arises as to what role the forester should now perform, and what qualifications he required for it. The forestry profession has already undergone an evolution from one predominantly based on biological sciences to one oriented to the management of production (Commonwealth Forestry Review, 1979). The forester must now become in addition a manager of socio-economic systems, and also must be sufficiently conversant with agriculture and animal husbandry to be able to relate them to a broader needs of rural development (FAO, 1981).

Education, training and preparation for this broadened profession has to be rather different from the conventional patterns. Besides the biology of trees, the ecology of forests, and the uses of forest products, a forester need to learn enough about social sciences to have some insights into the life of forest dwellers and farming communities and enough about the theory and techniques of communication to make imaginative use of all the means of informing and persuading people (FAO, 1986). On the technical side, more attention should be given to fuel wood production, the forest foods and forage and to fast growing trees suitable for planting outside forest reserves.

2.2. Extension Task

Alongside the task of managing the forests is that of helping to get trees planted outside the forest reserves and collaborating with the agricultural services to promote the combination of trees with crop and livestock production systems (Wiersum, 1984). This should not be seen as a task of a new profession, but as a new job for foresters. Many of the skills required are those that they already possess, while others can be acquired through in-service training and be included in the education of future foresters. The supplies of tree products from outside and

inside the forest reserves are two parts of a single set of problems. To divide them between two separate corps of specialists would weaken both, and would destroy their unity of action (FAO, 1981). Moreover, the future relations with forest neighbours will be greatly improved if the forester is the producer of new benefits as well as the continuing guardian against over exploitation.

The various ways in which forestry can be adaptive to make it more responsive and effective in the context of rural development have in common the growing role of a forester as the extension agent. This does not necessary mean that forestry extension service should operate separately, especially as it could heighten the risk of farmers receiving contradictory advice from different sources. If possible advice on forestry might more effectively be channelled through existing agricultural extension machinery. It should be noted that, in the field, with various experts, there is a tendency of pushing contradictory advice at the expense of the whole development (Lele, 1984). Mcloughlin (in Lele, 1984) observed that, frequently "two men give farmers, not slightly, but radically different advice".

However, though broadly speaking forestry extension, adopts the same objectives of agricultural extension, of helping farmers to increase their income and raise their standards of living by improving farming practices and hence can use many of the methods used in agriculture, and even operate within the existing agricultural extension machinery, but, forestry extension possess two special problems not commonly found in agricultural extension. The first is that of long period that elapse before improved forest practices produce benefits (FAO, 1986). Where agricultural crops calendars can be measured in a few months it takes years or decades for trees to deliver their rewards. Secondly, communal custody and management of forests can only succeed with the consensus of and concerted action by entire community. In agriculture, an extension programme can be pointed towards success by initially convincing and aiding only a handful of farmers to try new practices on their farms. In forestry extension in most cases, such small trials cannot be depended upon. It will not do for a handful of dedicated farmers to plant tree seedlings in communal land, only to be trampled on the next day by cattle being grazed by other farmers (West 1978 & FAO, 1986).

Forest extension to a large extent, need collective adoption by the entire community in contrast to the adoption of decision which might be made by individual farmers in agricultural innovations (West 1978). Research has amply shown that there are always early and late individual adopters of agricultural innovations, the late adopters being influenced by early adopters (Rogers and Shoemaker, 1971). In collective adoption, however, there must be a reasonable consensus achieved and simultaneous consensus adoption. Collective adoption is more difficult to achieve due to problems of cooperative action, collective property rights and distribution of accrued benefits to the community (West 1978). For collectively programmes to succeed, they must reflect the needs of the whole society as well as taking into account local cultural practices in the community. The style of extension work must therefore be entirely participatory.

3. M E T H O D O L O G Y

3.1. Research Design

The research was cross-sectional in nature as it was carried out   at one-point in time. Multi-method approach was used. This multi-method approach facilitated the collection of different types of data and information. This approach also led to an understanding of indigenous knowledge systems surrounding trees/forests. Even though each of these research methods were applied individually, they were developed and used in an integrated fashion and the resultant data were analyzed both individually and collectively.

3.2. Study Location

The study was carried out in four project blocks namely kilangangua, Maramba, Longuza and Kwankoro. A total of 14 villages (Ubiri, Misozwe, Bamba, Churwa, Vuga, Mziya, Kambai, Kwamkole, Kimbo, Kilangangua, Kitivo, Mlesa, Gereza and Maramba) were purposely selected for the study. Proximity to the forest reserves was the main criterion used in the selection of these study villages.

The study population comprised farmers, forestry extension workers and Agricultural and Forestry functional officers at the regional and district levels. An attempt was also made to discuss with the management of the East Usambara Agricultural Development and Environmental Conservation Project (EUADEC).

3.3. Sampling Procedure for the Farmers

The population of farmers was stratified according to gender, land size and number of livestock owned. As a result three categories came into being namely: High, medium and low. In each category five farmers were selected randomly. In some villages it was difficult to get enough people especially women in the high category and as a result the number of farmers interviewed in each village is not necessarily the same.

3.4. Data Collection Procedures

Reconnaissance visits were made to the study areas. During the visits discussions were held with village leaders and key informants on conservation issues related to the project. The experience gained during these visits proved helpful in designing the study.

Questionnaires were administered to the three categories of respondents: farmers, field-level extension workers and functional officers at the district and regional levels. Other methods used in data collection at farmer level were meetings and participant observations. In these meetings a technique known as a "problem census" was used. During these group meetings local people were asked to form small working groups and deliberate on major problems as regards to forests. Thereafter each working group presented their deliberations to other groups and

subsequently one combined list of problems was made. The next stage was to assign priority through voting. This technique resulted into a clearer picture of the problems and constraints as perceived by the land users.

Participant observation involved the observation of community and household activities. It provided the context within which all other methods were developed. It functioned as the initial medium for learning about social and environmental interrelationships.   Within the context of unstructured observations, a blend of activities occurred:

(i)   Discussions were held with residents;
(ii)   Questions were asked about specific aspects of village life;
(iii)   Time was spent listening to farmers talk among themselves; and
(iv)   The researchers sometimes participated in some activities of farm life.

The process of participant observation was primarily used to tie together the more discrete elements of data gathered by other methods. Thus, an iterative process between participant observation and other research methods evolved. The other methods allowed aspects of life in the study villages to be isolated and studied out of the context of the community life.   Participant observation permitted these elements to be examined within the context of the social system. At times, this resulted into a more complete understanding of both the individual elements and the whole. In other situations new question about life in the study area emerged.

3.5. Data Analysis

The collected data were coded and entered into the Computer. The data were analyzed manually (especially data from informal discussions and observations) and by the use of the statistical package for social sciences (SPSS) available at the Computer Centre of the Sokoine University of Agriculture.

3.6. Limitations of the Study

(i)   **Uncooperative village leadership:**
        Some village leaders like those of Kizara village were not very cooperative and as such the study team decided not to take data from such villages.

(ii)   **Language barrier:**
        Most members of the study team couldn't speak the native language "Kisambaa" and sometimes it was difficult to communicate.

(iii)   **Political barriers:**
        There were some political barriers which sometimes delayed the field work. For instance in Kimbo village, the study team was not allowed to interview the farmers until a permit was obtained from the ward headquarters at Mnyuzi.

(iv)   **Conflicting ideas:**
        Farmers normally get people from different projects with relatively different messages and they sometimes become confused.   For instance most

farmers couldn't distinguish the role of the East Usambara Agricultural Development and Environmental Conservation Project and that of the East Usambara Catchment Forest Project.

(v)   **Material expectations:**
Most farmers expected to be given something by members of the study team after interviewing them.   And when   nothing was given they become demoralized.

4. RESULTS AND DISCUSSION

The chapter discusses the results obtained from farmers, extension workers, functional officers at the district and regional levels and the management of EUADECP.

4.1. Farmers
4.1.1. Socio-Economic Factors
4.1.1.1. Gender

In this study a total of 230 farmers were interviewed. Out of this, 165 or 72% were men and 65 or 28% were women. This can be explained by the fact that most women in the study area fell under low category (See section 3.3).

It should be noted however, that though most woman fell under low category during stratification exercise and hence relatively few were interviewed, it is not necessary that the felt needs in terms of tree/forest products and services of men and women are the same.

Therefore it would be a gross mistake to target the extension services to men only. Studies from elsewhere showed that as forest/tree resources become scarce, the balance between what people need and what they can obtain shifts. For rural families, the struggle to survive becomes even harder (FAO/SIDA n.d.). The effects on women are particularly severe because women are more dependent than men on tree and forest products, and because they are taking an ever increasing share of family work as men seek cash incomes further afield. Furthermore, in failing to recognise the importance of forestry resources to women, development experts often introduce technologies/innovations that cut women off from a critical resources.

Therefore, if The East Usambara Catchment Forest Project is to succeed in conserving the forest resources in a sustainable basis, the balance between women and their forest resources must be restored . The message of this study is therefore twofold, first, extension workers of the project have much to learn from rural women. Women have a detailed knowledge of their surrounding flora that few experts can match. Also, only women can identify accurately how projects are likely to affect them, and in what ways they need help. Secondly, projects that aim to foster local community development like the East Usambara Catchment Forest Project can be more effective with the support of women no matter how marginal these women are.

4.1.1.2. Education

The study showed that in the study villages there are only 3.9% people with secondary education, 70.8% with primary education and 25.3% with no education. From these figures it seems that the level of literacy is rather satisfactory.

There is no development without education. Education is more than the transfer of knowledge and experience, it is important for forestering creativity (Kajembe, 1988).

An important prerequisite for creativity is curiosity; the desire to know more, to ask why (FAO, 1987).

Formal education is important for: creating awareness, positive attitudes, values and motivation; stimulating self-confidence and self reliance; expanding "aspiration frontiers" of the rural poor, generate respect and faith in peoples' power. Also the level of education of a society has relevance to the type of extension methods to be used.

Studies have revealed that it is the comparatively better educated and well to do farmers who generally absorb the bulk of government inputs (Shukla & Dalvi, 1984). It is however, possible to redress such a bias in The East Usambara Catchment Forest Project in favour of the illiterate people by giving them special attention and using different extension methods to reach them. This calls for a change in behaviour and attitudes of the extension workers so as to establish rapport with this group of people.

4.1.1.3. Labour

The study showed that 99% of the labour force is provided by the family and hired people (see table 1 below) .

Table 1: Main Source of Labour

	Percentage (%)
Family only	57.9
Family and hired	41.1
Hired only	0.5
Traditional work groups	0.5
T o t a l	100.0

Labour is usually a constraint to forestry activities at a household level because the time for farm activities for crop production often coincide with tree planting since rainfall is limited to certain months only. Although the opportunity cost of farm labour is said to be zero, planting of trees often takes place at the time when labour requirements in agriculture are also at peak. During such rainy seasons the opportunity cost of farm labour is indeed high and this acts as a constraint to forest activities especially tree planting. Therefore if the project needs to involve people in project activities this fact should be taken into account seriously.

4.1.1.4. Land

Most farmers in study areas have been living in the same villages and farming in the same land for a quite sometime. Table 2 below shows that in average farmers have been living in the same villages for 28 years and farming in the land for at least 19 years.

Table 2. Period of living and farming in the land (years)

Years Village	Living Mean	Std. Dev.	Farming Mean	Std. Dev.
Ubiri	33.2	(13.4)	21.6	(16.3)
Misozwe	22.1	(18.9)	11.8	(12.9)
Bamba	25.2	(17.7)	18.4	(14.6)
Churwa	18.0	(11.9)	11.2	(9.5)
Vuga	45.5	(22.4)	28.6	(16.9)
Mzia	26.6	(17.5)	17.4	(15.1)
Kambai	23.2	(16.1)	13.1	(9.0)
Kwamkole	40.2	(21.7)	23.4	(15.9)
Kimbo	21.2	(14.0)	18.9	(12.0)
Kilangangua	28.8	(19.8)	25.7	(21.7)
Kitivo	21.0	(12.3)	11.1	(7.1)
Mlesa	27.4	(16.0)	19.7	(9.5)
Gereza	36.7	(24.9)	17.7	(20.7)
Maramba	30.1	(22.1)	31.0	(25.0)
Entire population	28.3	(19.1)	18.7	(15.4)

The time spent in the land is considerable and it can be postulated that the farmers in the study areas have accumulated enough indigenous knowledge about their environment; the asset which the project can use to its advantages.

Another aspect which the study looked into, was the way land is acquired. The study showed that 54.5% acquired the land through inheritance, 24.0% through purchase and 21.5% through borrowing. The mode in which the land is acquired has implications on how it is going to be used. Those people who just borrowed the land for example, are not normally convinced that they will reap the benefits of tree crops eight to ten years after planting. Therefore the project should look into the land tenure system before advocating tree planting at a household level. For instance in this study 11% of the sample population felt that they are not going to use the land indefinitely and one cannot expect such people to have a long term commitment required by most forest conservation innovations (See table 3 below).

Table 3. Possibility to use the land

Category	Percentage (%)
Possibility to use the land indefinitely	89.0
No possibility of using the land indefinitely	11.0
All	100.0

Similarly the study looked into the way land use decisions are made at a household level. It was revealed that most decisions on land use in the study areas are made by men (See table 4 below). This means that even if there are advantages of targeting at women as a disadvantageous group as pointed out in 4.1.1.1, extension workers should approach this issue courteously by involving the men during the process.

Table 4. Land use decisions

Who can make decision	Percentage (%)
Husband only	52.9
Husband and wife	12.6
Wife only	27.7
Relatives	6.8
All	100.0

4.1.2 Agricultural production system

In the study areas cassava serves as the main food crop in pre-harvest period while maize is the main food crop in post-harvest period - see table 5 below.

Table 5. Main food crops

Food crop	Pre-harvest	Post-harvest
Maize	31.7	82.1
Cassava	50.0	14.2
Bananas	14.7	2.3
Others	3.6	1.4
All	100.0	100.0

Besides these two crops being very important as food crops, farmers feel that there is a decline in productivity over the years. They gave reasons to this trend as due to over-cultivation of the land and insufficient fallow as table 6 below shows.

Table 6. Reason for decline in production

Reason for productivity decline	Percentage (%)
Over cultivation	59.8
Insufficient fallow period	17.2
Others	23.0
All	100.0

Both these problems of over-cultivation and insufficient fallow periods can be addressed by introducing agroforestry innovations. Similarly, the project should try to encourage the use of fertilisers and other improved agronomic practices as at the moment very little fertilisers, improved seeds and pesticides are used as table 7 below shows.

Table 7. Use of improved agronomic practices

Response (percentage) %	Practice		
	Yes	No	All
Fertilizer	5.1	94.9	100.0
Improved Seeds	4.5	95.5	100.0
Pesticides	2.9	97.1	100.0

This means that the project extension workers should not confine their advice in forestry only but should also give advice to farmers in agricultural issues. It should be noted that, there is a salient correlation between agricultural production and forest conservation. When farmers cannot produce enough in their land they will keep on cutting more forests. In this context farmers are held responsible for the destruction as if they have alternative choice of resources to depend on for their livelihood, while they really don't. In the context of basic survival, today's needs tend to overshadow consideration for the environmental future. It is low productivity and hence poverty that is responsible for the destruction of forest resources and other natural resources, not the poor (The World Commission on Environment and Development, 1987).

4.1.3. Forestry production system

4.1.3.1 Farm trees

It was striking to see that 65.9% of farmers in the study areas had either planted or retained trees in their farms. This indicates that farmers know the importance of trees and they know the advantages of trees in agricultural production. It is important for extension workers to start from this basis that farmers already, know the advantages of trees. In this respect, the extension workers have more to learn from than teach farmers. But unfortunately, they are not learning. No one is taught at college/university to listen to farmers or attempt or explore their potential.

To change this set up, we should start by changing extension workers basic education so that they learn much more about the interactions within a typical farming system and a little bit more about farmers priorities and potentials. This would help them understand that the priorities they reflect, which are in
most cases government/project priorities are not necessarily consonant with the priorities of a farm family.

Similarly, in order to target the extension messages properly it is important to know the target audience thoroughly well. In this context, it is interesting to see that in the study areas trees are mostly planted and retained by men (see table 8 below).

Table 8. Tree planting and retention

Village	Tree planting %					Tree retention %				
	Husband	Wife	H&W	Others	All	Husband	Wife	H&W	Others	All
Ubiri	100.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
Misozwe	71.4	28.6	0.0	0.0	100.0	87.5	12.5	0.0	0.0	100.0
Bamba	50.0	10.0	10.0	30.0	100.0	33.3	33.3	0.0	33.4	100.0
Churwa	50.0	30.0	0.0	20.0	100.0	44.4	55.6	0.0	0.0	100.0
Vuga	38.5	7.7	15.4	38.4	100.0	38.5	7.7	23.0	30.8	100.0
Mziya	28.6	0.0	28.6	42.8	100.0	38.5	0.0	15.4	46.1	100.0
Kambai	35.7	7.2	21.4	35.7	100.0	58.8	17.6	17.6	6.0	100.0
Kwamk.	72.7	9.1	9.1	9.1	100.0	41.7	0.0	16.7	41.6	100.0
Kimbo	66.7	33.3	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
Kilangan.	33.3	16.7	16.7	33.3	100.0	50.0	16.7	16.7	16.6	100.0
Kitivo	9.1	27.2	45.5	18.2	100.0	11.1	33.3	33.3	22.3	100.0
Mlesa	71.4	0.0	14.3	14.3	100.0	75.0	0.0	18.8	6.2	100.0
Gereza	100.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0
Maramba	48.0	14.4	15.2	22.4	100.0	53.5	15.0	13.4	18.1	100.0

H&W= husband and wife

It is pity that in the study areas and may be in most parts of rural Tanzania women who bear the full burden of household maintenance, including provision of most of forest products as table 9 shows have little or no decisions on trees to be planted and retained.

Table 9. Rights to collect forest products

Gender	Percentage (%)
Wife	34.1
Husband	2.3
Husband & Wife	17.3
Members of the Clan	34.1
Free access	12.2
Total	100

It should be emphasised that any tree planting strategy at a household level will primarily affect women labour, while decisions about women's labour are largely in the hands of men. Touching the interests of both men and women is therefore of crucial important for the project to succeed. This can be achieved for example by enhancing agricultural production through agroforestry systems that provide multiple benefits including fuelwood for home use. All too often these issues have been relegated to the back end by rural development project promoters as awkward impediments to (male-oriented) technical fixes (Kajembe, 1988).

It needs no emphasis therefore, to say that when a project fail to specifically identify and address women needs as already discussed in 4.1.1.1, it may aggravate the situation for women and those aspects of the family for which they provide. Women can participate mainly in problem identification when they do not have time or resources to participate in the implementation. Formally or informally women evaluate new efforts against traditional benefits and shortfalls (Kajembe, 1988).

Their role in forest conservation may range from total responsibility to indirect supportive activities such as cooking meals for their working men.

4.1.3.2. Source of forest products

The study showed that farmers get most of their forest products from their own farms as well as from forest reserves - see table 10 below.

Table 10. Source of forest products

Village	Source: Firewood %					Poles %				
	Househ. Farm	Forest Reserv.	Public Land	Other	Total	Househ. Farm	Forest Reserv.	Public Land	Other	Total
Ubiri	14.3	14.3	14.3	57.1	100.0	27.3	27.3	36.4	9.0	100.0
Misozwe	58.3	25.0	8.3	8.4	100.0	33.3	33.3	16.7	16.7	100.0
Bamba	50.0	11.1	22.2	16.7	100.0	22.2	27.8	22.2	27.8	100.0
Churwa	52.9	11.8	5.9	29.4	100.0	22.2	33.3	11.2	33.3	100.0
Vuga	17.6	64.8	0.0	17.6	100.0	12.5	56.3	12.4	18.8	100.0
Mziya	56.2	0.0	0.0	43.8	100.0	43.8	12.4	0.0	43.8	100.0
Kambai	76.4	11.8	0.0	11.8	100.0	52.6	21.1	0.0	26.3	100.0
Kwamk.	38.5	7.7	7.6	46.2	100.0	26.7	20.0	6.7	46.6	100.0
Kimbo	25.0	33.3	33.3	8.4	100.0	28.6	50.0	7.1	14.3	100.0
Kilangang	33.3	33.3	11.1	22.3	100.0	25.0	50.0	12.5	12.5	100.0
Kitivo	54.5	27.3	0.0	18.2	100.0	30.8	61.5	0.0	7.7	100.0
Mlesa	45.0	35.0	0.0	20.0	100.0	42.9	28.5	14.3	14.3	100.0
Gereza	60.0	10.0	10.0	20.0	100.0	44.4	22.2	0.0	33.4	100.0
Maramba	25.0	50.0	25.0	0.0	100.0	20.0	70.0	0.0	10.0	100.0
All	45.5	22.5	9.1	22.9	100.0	31.5	35.0	10.0	23.5	100.0

From the figures in table 10, it is obvious that there is a considerable pressure in the forest reserves. This confirms the belief held by the management of The East Usambara Catchment Forest Project that something should be done to safeguard the reserves. It is however, a bear fact that unless these people are given alternative sources of getting the products they will keep on encroaching. Broadly speaking both short term and long term strategies should be considered. It seems that the only way out of this dilemma is to allow farmers to get their needs from the forest in a short term by creating buffer zones. This concept will be elaborated later in Chapter 5, but in the long run, the only feasible way is to ensure that farmers get most of their forest needs from their land. As pointed out elsewhere this can be achieved by encouraging agroforestry systems as well as communal individual woodlots. This point will also be discussed in details in chapter 5.

4.1.3.3 Forest reserve awareness

The study showed clearly that most people in the study areas are aware of the presence of the forest reserves as table 11 shows.

Table 11. Forest reserves awareness

Village	Aware	Not Aware	Total
Ubiri	90.9	9.1	100.0
Misozwe	91.7	8.3	100.0
Bamba	94.1	5.9	100.0
Churwa	100.0	0.0	100.0
Vuga	94.1	5.9	100.0
Mziya	100.0	0.0	100.0
Kambai	94.7	5.3	100.0
Kwamkole	100.0	0.0	100.0
Kombo	93.8	6.2	100.0
Kilangangua	75.0	25.0	100.0
Kitivo	100.0	0.0	100.0
Mlesa	100.0	0.0	100.0
Gereza	100.0	0.0	100.0
Maramba	90.9	9.1	100.0
All	95.7	4.3	100.0

Besides this general awareness about the presence of forest reserves, farmers interviewed showed a clear knowledge as regards to the benefits that the forest reserves can bring to them, these include: fuelwood, building materials, rain and also catchment aspects as table 12 below shows.

Table 12. Benefits from forest reserves

Village	Fuel wood	Building	Rain Materials	Catchment	Total
Ubiri	10.0	20.0	60.0	10.0	100.0
Misozwe	25.0	50.0	25.0	0.0	100.0
Bamba	14.3	14.3	71.4	0.0	100.0
Churwa	0.0	30.8	69.2	0.0	100.0
Vuga	7.7	23.1	46.2	23.0	100.0
Mziya	7.1	14.3	71.4	7.2	100.0
Kambai	21.4	14.2	64.4	0.0	100.0
Kwamkole	11.8	17.6	58.8	11.8	100.0
Kombo	20.0	10.0	70.0	0.0	100.0
Kilangangua	8.3	33.3	50.1	8.3	100.0
Kitivo	45.5	27.3	18.2	9.0	100.0
Mlesa	9.0	0.0	86.5	4.6	100.0
Gereza	18.2	36.4	36.4	9.0	100.0
Maramba	20.0	60.0	20.0	0.0	100.0
All	14.4	21.2	58.0	6.4	100.0

From the figures in table 12, above it is rather interesting to see how most farmers can make a positive correlation between the presence of forests and rainfall. Most of them during the discussions said that when they were young the rainfall was plenty but now there is rather little rainfall. It is therefore important for the extension workers to build their messages on this seemingly wide-spread local knowledge. During the study, the researchers were even told about the fact that there are

people who are specialists on rain making and this activity is done in special ritual areas. Even today besides the areas being conserved farmers still know and could locate both sacred trees and ritual forest areas as table 13 below indicates.

Table 13. Sacred trees/forests

Knowledge	Yes %	No %	All %
Ritual forests	36.1	63.9	100.0
Sacred trees	33.7	66.3	100.0

From the figures in table 13, one can deduce that the knowledge about sacred trees and ritual forests is being possessed by few people who are rather specialists. Nobody is allowed to cut a sacred tree or any tree in ritual forests. It is obvious that if extension workers can tail their conservation extension messages within this sacred tree/ritual forests framework they can be easily successful because they will be operating within the acceptable cultural norms.

However besides this seemingly good knowledge on the benefits from the forest reserves, farmers also mentioned problems which seem to be connected to the presence of these reserves such as land shortages, shortage of forest products because of restrictions, vermin etc. (See table 14 below).

Table 14. Problems caused by the presence of forest reserves

	PROBLEM				
Village	Land shortage	Shortage of tree products	Vermins	Others	Total
Ubiri	50.0	25.0	0.0	25.0	100.0
Msozwe	25.0	25.0	25.0	25.0	100.0
Bamba	33.3	66.7	0.0	0.0	100.0
Churwa	14.3	28.6	57.1	0.0	100.0
Vuga	57.1	18.6	14.3	0.0	100.0
Mziya	40.0	20.0	20.0	20.0	100.0
Kambai	0.0	100.0	0.0	0.0	100.0
Kwamkole	0.0	50.0	0.0	50.0	100.0
Kombo	28.6	42.9	14.2	14.3	100.0
Kilangangua	66.7	0.0	0.0	33.3	100.0
Kitivo	0.0	0.0	0.0	100.0	100.0
Mlesa	25.0	0.0	25.0	50.0	100.0
Gereza	40.0	60.0	0.0	0.0	100.0
Maramba	75.0	25.0	0.0	0.0	100.0
ALL	37.5	31.3	14.1	17.1	100.0

It is rather contradictory, as farmers say that because of the forest reserves they don't get the products but as discussed elsewhere forest reserves is one of the sources where farmers get their forest products. This contradiction in our opinion is a result of fact that, most farmers get these products from the reserves rather illegally. They are trespassers on their own land. This is not a very health environment especially for a project which would like to involve the people. It is our opinion that the project should work out strategies of instilling the sense of

ownership to the local people. This can be achieved by allowing them to collect forest products legally for their own use. During the study it was observed that in some villages people were allowed to collect fuelwood on specified days. But it was observed during the study that farmers enter the forests in non specified days as well. This ambiguity can be removed by creating buffer zones. On the issue of land shortage, the only long term solution to this problem is to intensify landuse practices outside the reserves either through practising agroforestry or through using other improved agronomic practices.

4.1.3.4 Extension services

It is often noted that most foresters are sceptical about people's participation in forest activities and generally do not regard extension work as the duty of forest officers (Kajembe, 1988). This is not hard to explain given their training and experience in large scale commercial forestry. It was noted in this study that forest extension agents and other extension agents from other fields seldom visit the villages studied (see table 15 below).

Table 15. Extension services

	Visits %		
Type of extension service	Yes	No	All
Forestry	13.8	86.2	100.0
Agriculture	20.7	79.3	100.0
Community development	13.6	86.4	100.0

But, instead of blaming the extension agents, an important factor to be considered beyond the interaction of the extension agents and villagers; is the relationship of the extension agents to their immediate superiors in the district/region offices; since it is they who have the control over the locally available budget for extension activities. But even where these extension agents managed to visit the villagers, according to this study they were not easily approachable and do not listen to people's problems as table 16 below shows.

Table 16. Attitude of extension agents

Attitude	Yes %	No %	All %
Approachability	33.7	66.3	100.0
Listening	41.1	58.9	100.0

It is high time that public forest institutions, whose mandate has been to protect and manage forest reserves, are re-oriented to work with farmers. Forest extension agents should be oriented to support and strengthen participatory management efforts, and they should be trained to listen and adapt to, and collaborate with, the target groups and show respect for local customs, attitudes and beliefs. In recognition of local customs, it may imply that, for example, female extension workers are specifically appointed to address female forest/tree product suppliers and users.

Involvement of the target groups and existing local institutions in design, implementation and evaluation of forest activities is important for widespread adoption and sustainability of innovations. Since technologies and practices

imposed from outside may lead to suspicious and even active sabotage from the target groups; utilization of traditional innovation channels may also be considered. For example in this respect the study showed that only 11.4% of the sample population said they were consulted before the forests were declared to be forest reserves. Even this number is doubtful if at all is to be relied upon.

Similarly it seems that extension agents relied very much on oral methods in delivering the messages, despite the fact that the level of literacy in the study areas is relatively high as discussed elsewhere (see table 17 below) and hence they could also use written materials.

Table 17. Message delivery

Method of message delivery	Percentage %
Oral	92.6
Written	3.3
Both (oral & written)	4.1
All	100.0

4.1.3.5 Problems threatening East Usambara Forest Reserves

The study showed that illegal pit sawing is the main problem threatening the survival of the forest reserves followed by fires caused mainly by hunters. Encroachment by farmers especially those who farm cardamom has been categorized also as relatively serious problem although those who were interviewed see that its, intensity has been reduced in recent years. See table 18 for these problems.

Table 18. Problems threatening the survival of East Usambara Catchment Forests

Village	PROBLEM				
	Illegal Pit Sawing	Encroachment	Fire	Others	Total
Ubiri	60.0	20.0	0.0	20.0	100.0
Msozwe	83.3	16.7	0.0	0.0	100.0
Bamba	14.3	0.0	71.4	14.3	100.0
Churwa	25.0	25.0	25.0	25.0	100.0
Vuga	66.7	22.2	0.0	11.1	100.0
Mziya	81.8	18.2	21.4	28.6	100.0
Kambai	28.6	21.4	21.4	28.6	100.0
Kwamkole	27.3	18.2	18.2	36.3	100.0
Kombo	44.4	11.1	33.3	11.2	100.0
Kilangangua	66.7	0.0	33.3	0.0	100.0
Kitivo	54.5	27.3	18.2	0.0	100.0
Mlesa	71.4	0.0	21.4	7.2	100.0
Gereza	30.0	7.7	30.8	30.7	100.0
Maramba	40.0	40.0	20.0	0.0	100.0
ALL	47.1	14.7	23.5	14.7	100.0

4.2. Extension Workers

4.2.1. Socio-economic factors

In this study 16 extension workers were interviewed.   4 at block and 12 at substation level. This means that every extension worker at block level supervises about 3 extension workers. In terms of gender, out of 16 extension workers only 3 were women a ratio of 1:4 (women:men). In terms of education, only 2 extension workers have diploma in forestry, 5 extension workers have certificate in forestry and 9 extension workers are just primary school leavers without any forestry training. In terms of age, the average age of extension workers is 33 years, while average period spent in stations is 6.5 years with average job experience of 13 years as table 19 below shows.

Table 19. Age and job experience of extension workers

Variable	Mean	Standard Deviation
Age (years)	32.63	10.31
Period in Station (years)	6.47	5.26
Job experience in years	12.69	7.92

From the figures in table 19, it is obvious that the project has extension workers who are rather experienced, because most of them have been working for quite sometime in the same areas such that they have acquired a considerable amount of local knowledge and most likely they know the culture of their clients.

4.2.2. Job description

The study showed that 68.8% of the extension workers were given schedule of duties when they were employed. It is also encouraging to see that 62.5% said they don't perform tasks other than those they were trained for. General experience in Tanzania shows that most extension workers normally perform duties other than those they were trained for. Moreover 56.3% feel that the training they got at colleges is very relevant to their work.   See table 20 below.

Table 20. Job description

	Percentage %		
Item	Yes	No	All
Given schedule of duties	68.8	31.2	100.0
Perform other duties	37.5	62.5	100.00
Training helpful	56.3	43.7	100.00

Besides the fact that most of the extension workers felt that the type of training they got at colleges was relevant to the type of work they are currently doing, but still they felt strongly that there is need of getting more training as table 21 below shows.

Table 21. Need for further training

percentage %

Item	Yes	No	All
Need for further training	86.7	13.3	100.0

Areas of interests which were mentioned include: Forest extension, seed collection methods, general forest management, nursery management, animal husbandry, botany and survey. It was rather strange to see that though these extension workers are foresters, still they feel the need of getting some training in animal husbandry. This shows that though they indicated that the type of training they got at colleges was relevant; the need for more training shows that the training at the colleges was not sufficient. Also the most striking phenomenon was that the need for extension training came out very vividly.

In terms of training duration, 55.3% indicated that the training should range between 3 - 9 months while 44.7% indicated that the training should range between one and two years (see table 22 below).

Table 22. Training duration

Responses	
Duration (months)	Percentage %
3	31.2
6	11.4
9	12.4
12	8.5
24	36.5
Total	100.0

It can be speculated from the data that those with diploma/certificate need short duration training while those who are primary school leavers, need long duration training. It is recommended that the project should find out ways whenever possible to satisfy this desire as a way of motivating them.

4.2.3. Self assessment

78.6% of extension workers said that they give equal importance to all tasks mentioned in their schedule of duties, and also 85.7% said they normally delegate their duties and powers to other people. Similarly 71.4% assessed themselves as doing the tasks relatively well but indicated that in most cases they don't portion equal time to all tasks (see table 23). Observations in the field indicated that patrol of forests takes the lion share in terms of extension workers' time. Very little time is given to discussion with local people on forestry issues. This is not a very health situation. As indicated elsewhere, it is high time foresters learn how to work with people not with trees. At the moment foresters in the project areas and in most other places in Tanzania, work with trees rather than people.

Table 23. Job performance

	Percentage %		
Variable	Yes	No	All
Equal importance to tasks	78.6	21.4	100.0

Delegation of tasks	85.7	14.3	100.00
Goodness of performance	71.4	28.6	100.0
Portioning equal time to all tasks	35.7	64.3	100.0

4.2.4. Frequency of farm visits

53.3% of extension workers indicated that they visit farmers daily or weekly see table 24. This is a rather contradictory to the results obtained from the farmers. Most farmers said that they have been seldom visited by extension workers. It is the opinion of the researchers that what the extension workers said was more or less wishful thinking. It seems that most of the extension workers at the moment are concerned mostly with patrols rather than visiting and discussing with the farmers.

Table 24. Frequency of farm visits

Visit	Percentage
Daily	33.3
Weekly	20.0
Monthly	6.7
Seasonally	6.7
As needed	33.3
Total	100.0

Similarly, 6.2% of extension workers said that when ever they want to extend any message they use individual methods, while 43.8% said they use group methods and 50% said they use combination of individual and group methods.

It is the task of forestry extension staff to provide the people with an opportunity to learn, by methods, and circumstances appropriate to them; and to stimulate in their clients mental and physical activity which leads to effective learning. To achieve their objectives, forestry extension methods must meet these major requirements. People learn in different ways, some by listening, some by observing, and some through discussion. A person will generally, learn more effectively by using a combination of two or more of those methods. Studies suggest that the more varied the methods of extension used in an area, the more people change their attitudes and practices.

Different extension methods have been found to be more effective, in different situations and at different stages in the adoption process. All people do not learn at the same speed. Some may be ready to adopt a new practice and need to know how to carry it out, while others are, as yet, scarcely aware that it exists or are just beginning to show an interest in it. For these reasons, the use of a variety of extension methods, suited to the needs of the people, and used either consecutively or in some cases simultaneously, is necessary to carry out an effective forestry extension programme.

According to this study forest extension workers in the project use only two methods, individual and group. There are also potentials for using mass methods. This will be elaborated further in Chapter 5. Although most extension workers in the project assessed their performance as good, but also they mentioned that they are facing some problems such as transport, low pay, lack of appropriate knowledge and security see table 25.

Table 25. Problems facing extension workers

Problem	Percentage %
Transport	35.7
Low payment	21.4
Lack of appropriate knowledge	28.6
Security	14.3
Total	100.0

In terms of Cooperation with other extension workers, 93.8% said that they have some cooperation with other extension workers working in the area such as agricultural extension workers, livestock extension workers etc.

4.3.   Functional Officers

4.3.1   Working experience

In this study two Tanga Regional Functional Officers (Regional Forest Officer and Regional Agricultural and Livestock Extension Officer) were interviewed. Similarly, both District Forest Officer and District Agricultural and Livestock Development Officer for Muheza district were interviewed.

The Regional Forest Officer has been working in Tanga for 10 years, whilst the Regional Agricultural and Livestock Extension Officer has been working in the region for only 3 years. In the case of District Functional Officers, the District Forest Officer has been working in Muheza for 13 years whilst the District Agricultural and Livestock Development Officer has been working in the district for 7 years. The time spent by all officers is long enough to know what is going on in the region/district. Though East Usambara Catchment Forest Project extends to Korogwe district, no attempt was made to interview the Korogwe District Functional Officers, this was deliberately done because the area covered by the project is relatively smaller compared to the area which falls under Muheza district. The researchers believed that whatever information was collected from Muheza will be relevant to Korogwe district.

4.3.2 Staff position

In terms of forestry, the region has 1 B.Sc holder who is also a Regional Forest Officer, 25 Diploma/Certificate holders and 35 Forest Assistants with or without vocational training. In terms of agriculture, the region has 16 B.Sc/M.Sc holders, 32 diploma holders, 5 Certificates and 4 untrained see table 26 below.

Table 26. Tanga Region staff position in Agriculture/ Livestock and Forestry

Agriculture/Livestock		Forestry	
Qualifications	Number	Qualifications	Number
M.Sc/B.Sc	6	B.Sc	1
Diploma	32	Diploma/Certificate	25
Certificate	5	Untrained/Vocational training	35
Untrained/Vocational training	4		
Total	57		61

On the other hand Muheza district staff position in forestry and agriculture/livestock includes: 2 Diploma holders, 2 Certificate holders and 21 Untrained staff in the Department of Forestry while in agriculture there are 2 B.Sc holders, 84 Diploma/Certificate holders and 44 Untrained staff see table 27 below.

Table 27. Muheza district staff position in Agriculture/ Livestock and Forestry

Agriculture/Livestock		Forestry	
Qualifications	Number	Qualifications	Number
B.Sc	2	B.Sc	-
Diploma/ Certificate	84	Diploma	2
Untrained/Vocational training	44	Certificate	2
	-	Untrained/Vocational training	21
Total	130		25

From tables 26 and 27, it shows that both the region and district have adequate manpower, the resource which the East Usambara Catchment Forest Project can utilize to its advantage. It is suggested that those extension workers who work directly under the region/district and who are close to the project should be involved in the project operations. But if this is to happen smoothly, district functional officers should be fully involved so as to ensure common chain of command.

4.3.3 Staff training

Both Regional and District Forest Officers believes that most of their staff are well trained but they lack working gears like transport. On the other hand both Regional Agricultural and Livestock Extension and District Agricultural and

Livestock Development Officers think that their staff lack expertise in extension and agro-chemicals.

It can be speculated that, Forestry Functional Officers tend to think more on technical aspects and the researchers feel that in technical aspects it may be true that the forestry department staff are well trained but definitely they are deficient in extension methods, most likely much more than those in agricultural/ livestock department.

4.3.4 Knowledge about the East Usambara Catchment Forest Project

The study shows that both Regional and District Functional Officers interviewed know about the East Usambara Catchment Project. But it was clear that they haven't been involved adequately. The Regional Forest Officer for instance thought that since the project is in his region, he should be informed about the project fully, currently it seems the relationship is rather personal than institutional.

4.4 Potential Collaborative Institution The East Usambara Agricultural Development and Environmental Conservation Project (EUADECP)

As pointed out in section 1.1.2, the East Usambara Catchment Forest Project is mandated to work on the Forest reserves whilst EUADECP is mandated to work in the public land. From the previous discussion it is clear that, sustainable conservation of the East Usambara Forest Reserves depends entirely on what is going on the public land. In other words the success of the East Usambara Catchment Forest Project will be influenced to a great extent by the success of the East Usambara Agricultural and Environmental Project. In short the pressure in the forest reserves will be reduced only if farmers can get their felt needs from outside the reserves.

It therefore needs no emphasis that there is need for a collaboration between the two projects.   Extension workers from the two projects should coordinate their activities. This study revealed that at the moment there is confusion between the activities of these two projects. It should be noted that, in the field, with various experts, there is a tendency of pushing contradictory advice at the expense of the whole development.

May be the starting point for collaboration between The East Usambara Catchment Forest Project and The East Usambara Agricultural Development and Environmental Conservation Project is to exchange reports and to have a joint training sessions of extension workers/facilitators.   It is the opinion of the researchers that there is enough will power between the management of both projects. May be the challenge is when to start. The start should be today because time is too short for us all.

CHAPTER V

5. EXTENSION PROGRAMME

5.1. Extension Packages

An extension package is the set of innovations proposed by a project for use by local people (Kerkof, 1990). Ideally this should be based on the local needs and conditions.

5.1.1. Buffer zones

Buffer zones are interfaces between human and conservation activities (Hall & Rodgers, 1992). Boundary issues or buffer zones in tropical natural resource management initially arose when areas of land were set aside as forest reserves - almost 150 years ago in India and more recently elsewhere. The boundary was supposed to divert opportunistic exploitation to other areas, leaving within it an intact and viable forest stand (Hall & Rodgers op.cit.).

Buffer zones are thus an integral part of the protected area concept, contributing to ability to conserve the biological and resource values within the protected area. The overall goal of furthering the conservation of a resource is accomplished in two ways. Firstly, suitable habitat like the "Amani nature reserve", is provided, to allow species to extend their ranges. Berkmuller & Mukherjee (1989) term this the "extension" function. Secondly, a sustainable supply of natural resources is made available to resident or local people, reducing their dependence on protected area core resources - this is the "socio-economic" function.

The challenge for the management of The East Usambara Catchment Forest Project is thus to combine these functions in an effective way. One important

category of exploitation arise from this management situation. Concessions allow traditional gathering of renewable products from the buffer zone where it is accepted that this will not appreciably change the ecosystem. In this case local people are allowed to hunt and gather forest product within the buffer zone.

But the idea of "internal buffer zones" within the protected area should be seen by management of the East Usambara Catchment Forest Project as a temporary measure. In a long run the idea of organized interventions outside the protected areas to relieve pressure within seems to be more viable strategy. In this case it is important to encourage "external buffer zones". In these zones coordinated tree planting and other sustainable agroforestry-based systems should be demonstrated by the extension workers. That is where the coordinated effort between EUADECP and EUCFP become important as already discussed in chapter IV. It is suggested that the external buffer zone should be termed the "Support Zone Development Programme" - to stress its purpose of supporting the community rather than its defence for the protected core zone.

This type of package is already in operation at Serengeti National Park, for example, where there is a "core" area, free of exploitative landuse, buffered by game reserves and game controlled areas. In the game reserves trophy hunting takes place and in the game controlled areas there are concessions which permit pastoralism and limited cultivation.

It should be emphasised that, the socio-economic function of buffer zones is very important for local communities to have a stake in ensuring long term sustainability. For this to happen there must be empowerment through joint management and resource ownership (Poffenberger, 1989, 1990 In: Hall and Rodgers, 1992). This philosophy has been successful demonstrated for semi-arid land wildlife in Zimbabwe, through operation campfire where local participation is the dominant feature (Frost, 1991).

If a concerted approach to buffer zone management is to be achieved in the East Usambara Catchment Forest Project, there must be a wider recognition of the role of the interested parties and how they interact. Harmonisation integrates the strengths and roles of the different interest groups, particularly the synergetic potential of reciprocal linkages between the local community, and the project personnel. Identifying linkages and bringing them into sharper focus emphasizes complementarity of role and stresses that the factor common to all buffer zones situation is pressure on land from local community. Pair-wise relationships among the local community and the project can thus be summarized:

> ... The local community provides the project with
> access to socio-economic information revealing
> context and initial situation as amply discussed
> in Chapter IV. the project provide the local
> community with inputs of support technology and
> expertise.

In the light of this package, attention should centre on actions considered acceptable in buffer zones and what benefits might be expected from these. Berkmuller and Mukherjee (1989) call for land use surveys (within and adjacent to a buffer) to allow qualitative assessment of community dependence on butter zone resources.

Frustration with progress may be discouraging initial buffer zone initiatives in the project but this is time to promote this concept, not to allow it to decline. The various stakeholders have been identified in Chapter IV and their positions and interests recognized; and all seem to be responsive to involvement in collective dialogue. The long time - scale necessary to organize buffer activities appropriately are acknowledged (WWF, 1989), 1990) and we are beginning to understand implications of this.

There is much to be learned from persevering with buffer zone programme. As sites for enlightened integrated development they offer much useful experience for application in the East Usambara Catchment Forest Project. If buffer zones cannot be made into successes, it is not only the protected areas that are at risk; it is the stability of rural land use generally.

5.1.2 Agroforestry Systems

Agroforestry is defined as a holistic approach to land use, based on the combination of trees and shrubs with crops, pastures on the same land unit, either in sequence or at the same time (Lundgren, 1982). Whereas formal agroforestry science is based on systematic placement of trees relative to crops and pastures, local people are often more concerned about the fit of the whole agrofestry systems, and trees in particular into the land scape (Chambers, et. al. 1989).

Agroforestry or interplanting of trees and crops, is generally considered to be the preserve of specialists (Tanzania Business Times, 1992), but experience from the study areas shows that it is simply a big name for something the local people have been doing for centuries without any external help. It is obvious therefore that a wide variety of both traditional and relatively new systems or practices can be classified as agroforestry.

Some important features of agroforestry systems appropriate for the East Usambaras are:

(i)   Whenever possible they should be carried out on a
        person's own land, or on land held under secure
        title;

(ii)   Alternatively they may be on poorly stocked public
        forest land leased to an individual or to a community
        for a reasonable period of time;
(iii)   They should aim to create a system under which forestry
        and agricultural or animal production can continue
        permanently;
(iv)   Where possible there should be a beneficial interaction
        between trees, animals or agricultural crops and the
        environment such as providing shelter or fixing nitrogen in the soil;
(v)   The persons taking part in the programme should do so willingly and should
        be quite clear as to how they will benefit from it;
(vi)   The benefits should be related to the particular needs
         of the people or to earning opportunities which they
         consider to be important; and
(vii)   The rewards should be big enough to compensate them for
         any extra work involved and for any possible reduction
         in agricultural crops.

Some patterns for the distribution of trees in agroforestry systems are:

-   In one or more rows round the edges of field or landholdings;
-   In alternate rows with food crops;
-   In alternate strips of two or more rows with strips of food
    crops or grazing lands preferably following the contours;
-   As scattered trees amongst food crops, or sheltering
    tethered livestock or poultry;
-   In vegetable gardens, round buildings or homesteads; and
-   In scattered small groups of trees often in areas difficult

to cultivate for food.

The cultivation of trees around the edges of fields and landholdings requires some degree of agreement with the adjoining landholders to forestall complaints that trees are affecting production in the adjoining fields. Trees grown round boundaries or in one or more rows between crops can normally produce fuelwood, poles, small sawn timber or possibly fodder depending on the species selected and the form of management adopted by the owner. They can, in time, be managed to give a reasonably consistent return in material or income to the owner. Scattered trees among food crops, in vegetable gardens or around buildings may often be fruit or general purpose trees, some of which may yield fodder in the dry season. The benefits of such trees in terms of shelter for tethered animals or for the occupants of buildings is hard to quantify, but is nevertheless recognised by local people who carry out many domestic activities in the shade of such trees.

Trees grown in small groups in areas difficult to cultivate for food crops may be most suitable for fodder or for topping for fuelwood. The sites may be used for growing timber species, while providing some shelter for animals, but it is usually difficult to demonstrate to local people the benefits of planting trees from which they are unlikely to see some major benefits during their life time.

Agrofestry provides opportunities for people to meet local needs for both food crops and forest products, and in this case agroforestry is appropriate package for the East Usambara where both forest products and food crops have been mentioned by the local people as important.

5.1.3 Community woodlots

These are intended in this project to meet the general requirements of community for fuelwood, poles, light construction timber or similar products, where these needs cannot be met by individual agroforestry efforts proposed in Section 5.1.2 above. Studies from elsewhere in Tanzania show much better participation by individuals than community (Kajembe, 1988). However, more recently, a clearer understanding has been emerging that both are appropriate on occasion. Community woodlots however, faces two major constraints, namely suitable areas of land for planting and the willingness of the community to form an organisation to plan and carry out the necessary work and the distribution of benefits. They can be organised in this project by established groups such as schools, religious organisations or by "ad hoc" groups formed on the initiative of extension agent.

The establishment of community woodlots will almost certainly affect a large number of people who may have previously used the land on a seasonal basis and their interests must be taken into account in planning of the work. If they feel excluded they are unlikely to cooperate in the protection of the area no matter how important others feel about this and problems of trespass may make the scheme almost unworkable.

5.1.4 Erosion control or improvement of water supplies

This usually requires community action and often involves the land of several individual members of the community. It requires a strong commitment by the

people concerned to carry out the work and to accept any changes in use of the land involved. In this case the project is advised to initiate an aid scheme such as food for work which can bridge the gap between effort and deferred benefits.

The benefits are unlikely to be reflected in terms of forest production, unless tree are grown along contour bounds, on filter strips along streams.

In general, this work is likely to be undertaken in conjunction with the East Usambara Agricultural and Environmental Conservation Project.

5.1.5 Small scale - forest based enterprises

Small scale forest-based enterprises e.g. the collection of medicinal plants or wild fruits, the collection of honey, the supply of material for local handicrafts may be promoted on an individual or community basis by extension process. In many cases the resources already exist. For example, in recent days the business of ornamental plants (flowers) has been on the increase both at home and international markets. It is worth to note that the world's probably most popular pot-plant today, *Saintpaulia ionantha* (The Usambara violet), in nature is found only in Tanzania - mainly in the catchment forests of the Usambaras, Nguru and Uluguru mountaints (Temu, 1993). This species alone is said to make an annual sells of about 30 million dollars in Europe. Of course, at the moment Tanzania is not receiving a single cent from these sales. Extension workers in the project can start with this species to encourage alternative income generating initiatives so as to relieve the forest from the pressure causes mainly by pit-sawing.

5.1.6 Enrichment planting

The East Usambara Forest Catchment is in poor condition after decades of logging without proper management. This calls for enrichment planting in order to speed-up the natural regeneration. However, the situation in Tanzania is that most nurseries feeding catchment forests raises exotic species instead of indigenous ones (Temu & Lulandala, 1991). Many exotic species have no good catchment properties. Some are too competitive hence eliminating or suppressing the indigenous ones. An example is *Maesopsis eminii* planted in East Usambara Mountains, which is now virtually a weed in the area. Indigenous tree species which are good for catchment afforestation include: *Albizia spp, entandrophragma deinngeri Euclea divinorum, Fagaropsis capensis Ficalhoa laurifolia; Ficus spp; Ilex mitis Newtonia buchananii, Parinari excelsa, Podocarpus usambarensis, Prunus africana, syzygium guienense, xymalos monospora.*

These packages are not exhaustive but they can at least serve as a starting point. Extension workers should always try to get new knowledge from local people and researchers so that they can come up with new packages suitable for sustaining the East Usambara Catchment Forest Project.

5.2. Extension Methods

Appropriate methods which extension staff of the project can use fall into three main categories:

- Individual methods;
- Group methods; and
- Mass method

5.2.1. Individual methods

Individual, face to face, contact has been found in most cases to be the most effective way of facilitating the learning process in an individual. Personal contacts have many important values such as:

- the personal influence on an extension agent is important
  in securing cooperation and participation in extension
  activities and in adoption of improved practices;
- people will listen to the advice and suggestions of
  extension staff whom they feel they know and like personally, and whose
  knowledge they respect; and
- immediate feedback is obtained on whether the message
  has been understood in the sense intended.

These factors pose considerable potential for the East Usambara Catchment Forest Project which has relatively experienced and mature extension staff. Most of the project extension workers were found to have a considerable depth of field experience an asset which is required for establishing the trust and mutual respect necessary between the extension agents and their clients.

5.2.1.1 Home visits

(i) Purpose of making home visits

Discussions made with extension agents showed that in most cases they tend to visit their clients at their homes. Some of the purposes of making home visits are:

- to acquaint the extension staff (Particularly new members)
  with the client and his family, to exchange traditional
  courtesies, and to establish a friendly working
  relationships;
- to obtain first hand - knowledge of the living and working
  conditions of the client and his family and problems faced
  by them;
- to supply general information on forestry matters to that
  family;
- to answer specific requests for help (e.g. requests for
  information, seeds, plants, or other materials) whenever
  possible;
- to explain in detail, and demonstrate where practicable,
  recommended forestry practices (e.g. nursery techniques
  or the establishment of small woodlots);
- to adjust general recommendations on forestry practices
  given in pamphlets or in radio programmes to suit the
  person's particular situation or problems;

- to follow up and observe the results of recommended
  forestry practices which have already been adopted;
- to identify and arose interest in problems the
  person may not yet have recognised as such;
- to plan an activity such as a meeting or demonstration;
- to invite the person and his family to take part in
  a planned activity; or
- to recruit, train or encourage a local volunteer leader
  to organise or lead a local forestry development
  committee.

(ii) <u>Advantages and disadvantages of home visits</u>

Some of the advantages of making home visits are:
- the extension staff gain first-hand knowledge of the actual
  problems faced by their clients and are able to see the
  circumstances in which they arise;
- they help to develop the good will and confidence of the
  family visited in the extension agent and in the advice
  given; and
- individual teaching provided in this way is most effective
  as it can take place in the way, and to the speed, most
  suited to the client.

Some disadvantages of home visits which should be avoided as far as possible
through good planning are:

- visits are expensive in terms of time and transport required
  and can only be made at times convenient to the client;
- the number of people who can be contacted within a given
  period is limited;
- a tendency may develop to visit some families with whom
  good relations have been established, more frequently,
  at the expense of trying to establish better relations
  with others; and
- this situation may result in loss of contact with the
  community as a whole and cause jealousy and resentment
  amongst some members of it.

It is useful to have a simple checklist of steps for planning and making home visits,
to ensure that each visit is effective and makes the use of the time involved. such
checklists will develop and improve with local experience but some points which
should appear in initial checklist are as follows:

. <u>Planning the visit:</u>
  - suggest a time convenient to the person's work or habits
    (e.g. avoid clashing with the time of religious
    observances, known festivals or market days);
  - make a firm appointment if possible;
  - decide in advance on a clear purpose for the visit;
  - review any notes made following previous visits to

the person;
- check any technical information that may be required
  on the visit (refer to publications or to a subject-
  matter specialists if necessary);
- collect any pamphlets, instructional material or
  samples of seed to be left with the client;
- arrange a series of visits within an area to
  save time and travel and, if possible, include
  other work in the area;
- consider carefully in advance the best form of
  approach to each person.

. <u>Making the visits:</u>
- be punctual (or follow local customs in this
  respect);
- give suitable greeting to the client and his
  family in the customary form;
- try to find something to comment on favourably
  to start the discussion;
- let the person and the family talk about their
  problems (at length if necessary);
- prompt them to ask for possible solutions to their
  problems;
- give any relevant information and some suggested
  solutions or admit where more information is
  needed before a response can be given;
- demonstrate any skill required, if appropriate;
- confirm any essential information in writing or
  in diagram, either on the spot, or as soon
  after as possible;
- make careful notes on what has been discussed or
  achieved during the visit;
- encourage the family members to join in any suitable
  group extension activities in the area, if appropriate
  (e.g. to take part in establishing a community woodlot);
  and
- keep any information collected about the person seeking
  help strictly confidential, (do not leave notes or files
  lying around in the office).

. <u>Follow up:</u>
- enter the notes made during the visit on the record card
  or file kept for that particular person, as soon after
  the visit as possible;
- supply any forestry or other relevant literature
  requested by the person visited; (pass on requests to
  other extension organisations e.g. agriculture,
  community development etc. if their help is required);
- call on the assistance of a subject-matter specialist
  for advice on any problem which cannot be solved by
  local resources; and

- plan and arrange follow-up visits as required, note
   these in a programme of work dairy.

5.2.1.2 Office calls and enquiries

Extension agents should encourage people who are interested in forestry extension matters to call at their offices, and should set aside particular times of the week for these visits, if possible (e.g. market days). It should be noted that:

- people who call on their own initiative at forestry
   extension agent office or home show that they are
   interested in his work and in any information he may
   have to offer;
- the more the confidence people have in an extension
   agent, the more likely they are to call on him for
   assistance and follow any advice or suggestions he
   might offer;
- this may reduce the number of home visits necessary
   and save the time of travel;
- circulars, brochures and handouts on relevant
   matters should be readily available to such callers;
- a definite period of time, or day suited to local
   customs, should be set aside for receiving such
   callers, who should receive priority attention by
   the staff at that time;
- calls and enquiries dealt with this way are less
   expensive and time consuming than home visits, and
- a careful record of office calls should be kept;
   this may serve as a basis for follow-up activity
   or as an index of public interest or participation
   in an extension activity.

5.2.1.3 Personal letters

Given the literacy level in the study areas, personal letters may be of important in extension activities. People usually derive some satisfaction or pleasure from receiving a helpful, well-written, personal letter. This, in itself, may help to establish good working relations in the areas. Letters are the main form of communication both within an extension organisation and with other public organisations. All extension staff should try to acquire some skills in letter writing. Some points which should be taken into account in this respect are:

- some people may have to write for information because it
   is not possible for them to make a personal call;
- all such letters should be answered promptly and
   courteously;
- a well constructed reply can create a favourable
   impression and help build up public confidence in
   an extension organisation;
- a poorly written, or very formal reply can discourage
   a person from writing again, and damage any developing

confidence;
- information given in a reply should be as full as
  required for the purpose but should not contain any
  unnecessary details or irrelevant facts;
- if a complete reply cannot be given immediately,
  a short, friendly, acknowledgement should be sent,
  and a full reply should be promised and sent as
  soon as the information is available; and finally
- letters should be concise, clear and well laid out;
  if they are too long they are likely to confuse the
  reader.

However letters are:
- not in themselves considered to be major source of
  information to rural people, or if used on their
  own, of much value in changing work practices;
- expensive and not very effective means of
  maintaining contact with large number of people.

Letters plays a vital part in transmitting information from the public and field staff in extension service to administrators, research workers or policy makers.

5.2.1.4 Informal contacts

Informal contacts are based on causal or chance meetings between extension agent and members of the public, which can be turned to good account by gathering information on attitudes towards forestry extension in the project areas or on problems faced by the public.

Although totally unplanned, they may provide useful opportunities for exchanging information and for establishing public confidence in extension staff. However, if not used with care, they can seriously upset a programme of work for a particular day.

5.2.2 Group methods

. (i) Overview

Group methods consists of a number of activities in which there are direct personal contacts between the extension agent and the public, but not on a one-to-one basis. They provide excellent opportunities for extension staff to present information to a group of people. They also provide opportunities for discussion and direct contact between the group members themselves and the extension staff. This process can assist people to reach a decision to take joint action on a problem. Groups include, but also excludes, certain people and those excluded may feel neglected and adopt a very negative attitude towards the objectives of the group.

Group methods are useful for a number of reasons:
- to focus attention on problems jointly affecting members
  of group and possible forestry solutions to them;
- demonstrate basic forestry skills at a convenient

location.

(ii) Features of group methods:

Group methods are:
- less expensive than individual methods, in terms of
  staff time and effort, to cover a given number of
  people;
- very effective, in that attitudes and decisions
  arrived at by a group discussions usually carry
  more weight in a community than individual
  attitudes and decisions and are more likely to be
  widely adopted; and
- they are able to assist the learning or change process
  of individuals by the exchange of ideas and experiences
  between the members of the group.

Some of the disadvantages of group methods, however are:
- it may take a long period of discussion for a group
  of people to arrive at a decision on the matter;
- one or two with strongly held divergent opinions may
  deflect the group from a wise decisions;
- it is not always easy to get all the members of a
  group of people together at the same time for
  discussion or action.

The advantages, however, of group methods outweigh their limitations and they play a most important part in extension programmes. They usually lead to a much more rapid spread of information and change of attitudes than could be achieved by their spread from a few isolated persons enjoying individual contacts with extension staff.

5.2.2.1 Group meetings

(i) Overview:

These are one of the oldest and most popular methods of contacting and communicating with people, largely because they have been, for long time, a familiar means of receiving and discussing information of importance and taking decisions, in many communities. They are also a very effective method of spreading new ideas in relation to their cost.

(ii) Types of group meetings:

Common types of group meeting are:
- community meetings open to all persons willing to take
  part and usually aimed at a general description and
  discussion of situation affecting the people;
- special interest meeting to serve the needs of a
  group with a particular interest in a topic, or
  some special need for assistance;

- meetings limited to selected individuals who have accepted
  responsibility as leaders and need assistance in carrying
  out their tasks;
- training meetings to encourage, advise and train
  community leaders on some specific topic; and
- organisation and planning meetings to establish the
  framework and procedure for carrying out decisions.

(iii) Guidelines for improving effectiveness of meetings:

Meetings if they are to be effective, must be systematically organised and
conducted. For this basic checklist of tasks, which can soon be modified on the
basis of experience to suit local conditions, is necessary. Some of the factors which
should be taken into account are as follows:

Planning a meeting:

- after taking into account local opinion, decide on the purpose of the
  meeting and review the subject matter and the information available;
- decide on the form of meeting most suited to the objective;
  e.g. a lecture or discussion, a large or a small meeting,
  formal or informal procedure;
- decide on the time of the meeting both in terms of day
  and season; select convenient time of day for the target
  audience and an appropriate season to allow people to
  act on any new information or on any decisions they make;
- decide on the place of the meeting, is familiar to local
  people, easy to reach, as comfortable as possible in the
  circumstances and in a location appropriate to the subject
  for discussion;
- make the necessary arrangements to reserve the meeting
  place, advertise the meeting widely, erect notices and sign
  posts, if required, and arrange parking facilities for any
  vehicles which may bring people to the meeting;
- arrange adequate seating, according to local custom or
  requirements. e.g. Special seats may be expected by
  visitors from urban areas; the audience must be able to
  hear and see clearly; they must be reasonably comfortable
  by local standards, and in the case of East Usambara
  according to customs, arrangements have to be made for
  women attending; and
- a chairman and speakers must be arranged and formally
  invited to take part; sometime in advance of the date
  selected; they should be briefed fully on the purpose
  of the meeting and the background and numbers of the
  audience expected and suitable transport arranged for
  them, if necessary; they should be welcomed on arrival
  by one of the organisers of the meeting and properly
  introduced to the audience.

. Holding the meeting:

-   arrange to start on time (subject to local custom in
    this respect):
-   observe local customs in the procedure for the opening
    the meeting;
-   welcome the audience;
-   thank the hosts for arranging the meeting, or for allowing
    it to be held in that particular place;
-   introduce the guests who are to speak, or who are present
    as observers, making sure they are addressed by the proper
    titles or descriptions;
-   describe the purpose of the meeting and outline the agenda;
-   start the main part of the programme as promptly as
    circumstances permit;
-   at suitable points during the meeting, encourage, questions
    and discussion of the topics;
-   summarize the important points learned or discussed;
-   note and emphasize any important decisions taken;
-   distribute extension material on the subject to those
    present.

. Closing the meeting:

-   thank the hosts, the guest speakers and the chairman for
    their assistance; and
-   follow local customs in the procedure for winding up the
    meeting.

. Follow up:

The following points should receive attention as soon as possible after the meeting:
-   arrange for the meeting place to be cleaned and for any
    chairs or other items borrowed to be returned;

-   Send letters of thanks to the host, the chairman and
    the guest speakers;
-   record any decisions taken and assistance promised and take
    prompt action on these matters;

5.2.2.2 Demonstrations

Demonstrations fall into two categories:
- Result demonstrations; and
- Method demonstrations.

(i) Result demonstrations:

A result demonstration shows what can be expected after a particular forestry practice has been in use for a certain period of time. It is intended to stimulate interest in the practice and induce people to learn more about it and to give it a trial. The comparison between the old practice or technique and the new one is an

essential feature of a result demonstration. The differences are there to be seen and discussed by the group. Questions can be asked and answered and additional information on the time taken, work involved and the costs can be explained by the extension staff. Result demonstration in forestry involves a much longer time span than in agriculture and it may only be possible to show some stages in the whole process.

(ii) <u>Method demonstrations</u>:

Method demonstrations are the oldest form of teaching. They are the basis of the apprentice system which has trained skilled craft-workers for many hundred of years. In forestry extension, they can be used to show a person how to do a job, such as putting seedlings or planting trees, step by step until they have acquired sufficient proficiency in the task.

The purposes of method demonstrations are:
- to teach basic forestry skills to small groups of
  people; and
- to teach how to do certain things (rather than why
  they should be done, as in a result demonstration).

It is important to draw a clear distinction between method demonstrations and training courses. Because of the time available at method demonstrations, people may gain only a superficial knowledge of the procedure and may, therefore, be unable to apply it successfully, without additional training.
There are limits to what a person can learn at a method
demonstration.

5.2.2.3 Field days

Field days are best held on land belonging to local persons who have successful adopted improved forestry practices, or if this is not possible, on experimental stations.

The main purpose of field days are to commence, or inspect progress, or observe the outcome of result demonstrations; and to see, by field demonstrations, the scientific basis on which advisory work is based.

5.2.2.4 Field trips and tours

Field trips and tours can be regarded as series of field demonstrations arranged in sequence. They are extension activities which appeal to peoples' desire to travel and to see things in other areas. On the account of the expense involved however, they can only be undertaken occasionally and must therefore, be very carefully planned and carried out to gain the maximum benefit from them.

Field trips and tours offer people the opportunity to see for themselves valid evidence of improved forestry practices in a number of different areas; and may be devoted to a single topic or to a variety of topics; thus acquainting the public, through their leaders with several important aspects of forestry extension programme.

5.2.3 Mass methods

As neither individual or group methods can reach everyone who may want or need information on forestry extension matters various methods of mass communication such as print, broadcast or audio-visual methods are employed to reach larger numbers of people quickly and often at low cost. the information they convey must be, in most cases, generalised but it can play an important role in certain phases of an extension campaign.

Mass methods are used for a variety of reasons which include the following:
- they help carry forestry information to many more people in a short period of time than can be reached by individual or group methods;
- they help create general awareness and interest in a new topic or forestry activity;
- they help form favourable attitudes amongst the general public towards forestry extension programmes; and
- they provide helpful repetition and reinforcement of extension messages to those already contacted personally through individual or group methods.

Some of the positive features of mass media are:
- they can increase the impact of extension staff in the field by a rapid spread of information, though they involve no personal contacts;
- many more people can be influenced, over a given period of time, than by individual or group methods; and
- some examples of mass media and the ways in which they can be used in the East Usambara Catchment Forest Project are considered below:

5.2.3.1 Circular letters

Some suggestions on writing personal letters have been given under individual methods section, and are generally relevant here, though circulars letters for mass use should generally be written in less formal way.

Some of the purposes for which circular letters may be used are:

- to give advance warning to local authorities and community leaders of anticipated forestry problems, such as shortages of fuelwood, or a danger of forest fires;
- to publicise an extension activity, such as a demonstration or meeting;
- to serve as a reminder to the audience of information or advice given at meetings or demonstrations;
- to summarize the outcome of a result demonstration and to carry news of the success of the demonstration to a much wider public;
- to inform people about a new forestry practice which

extension staff believe would be of benefit to people in
the area;
- to create awareness and interest in a new practice by
reporting the results achieved locally; and,
- to reinforce the effects of personal contact methods,
such as meetings or demonstrations or other mass media
campaigns.

5.2.3.2 Posters

A poster is usually a large sheet of paper or cardboard with an illustration and
usually a few simple words. They may, less commonly, be printed or enamelled
metal which is more durable but much more expensive.

Posters are intended to:
- catch the eye of passers-by;
- impress on them a fact or an idea; and
- encourage them to support an idea.

Some simple factors to bear in mind in the design of posters are:
- a brief glance is usually all that people give to a
poster, just long enough to identify it;
- passers-by will only look longer if something particularly
catches their attention and stimulates their interest; and
- the message on a poster must therefore be simple, clear and
direct.

Some other factors that should be taken into account in using posters are:
- posters should supplement but should not aim to replace
other extension methods;
- they are useful to introduce or launch a campaign;
- they can be used to reinforce a campaign after it has been
successfully launched;
- in general, the greater the number of posters used in an
area, the greater the impact;
- common sense and good taste should dictate both where they
should be used and the number that should appear in any
one place.

Posters can be put up on notice boards, walls of buildings, fences, trees or in other
suitable places, provided they do not cause offence to the owner of the property
(seek permission from the occupier, if in doubt); and posters should be removed
when they have served their purposes and before they become untidy or they may
cause offence to passers-by.

Competitions to design posters, open to members of the public or to students, are
an excellent way of generating interest in a topic and in gaining an insight into how
the people in the area view and wish to represent an idea. Moderate cash prizes
may attract very large numbers of entries.

5.2.3.3 Pamphlets and leaflets

These materials can often be produced locally, quickly and cheaply and can be used in many ways in forestry extension programmes.

some of the functions of pamphlets and leaflets are:
- they may be used as single items, for example to explain proper tree planting techniques;
- they may be used in series covering broader topics such as woodlot establishment, with separate leaflets on nursery establishment, seedling production, planting and maintenance of woodlots and felling and sales;
- they may be used in conjunction with other visual aids at meetings and demonstrations in long-term campaigns;
- they are useful to supplement larger publications when new information is available but when reprinting of the whole publication is not necessary or practicable; and
- they can be handed out after meetings to supplement the information given.

In preparing pamphlets and leaflets, a writer should:
- keep the particular public for whom they are intended constantly in mind;
- write in simple form and in words the intended readers can understand;
- write about things interests most of the people;
- avoid difficult scientific and technical terms, such as the specific names of plants or diseases;
- use simple illustrations whenever possible;
- adopt a good layout, (i.e. arrange material in simple, logical, easy-to-follow manner and make it attractive);
- realistic illustrations are usually most effective in extension work, though they are difficult to produce with simple equipment;
- clear line drawings are usually more effective and attractive than unclear pictures produced by memographs;
- good illustrations make any publication easier to understand and more interesting to read; and
- they should have an attractive and colourful cover which should impel the reader to look inside.

5.2.3.4 Fact sheets

Fact sheets are condensed treatment of any items of subject matter of general interest. They usually cover a single topic and are often limited to a single page. A fact sheet on the planting will give, briefly, the most important information on the practice.

5.2.3.5 Campaigns

The function of extension campaigns is to focus the attention of public on a particular, widespread, problem which has been clearly identified in an area. In the case of East Usambara Forest Project, it seems wild fires are common problem especially in the lowlands which calls for a campaign. The ultimate objective of campaigns is to stimulate the people to take action to overcome the problem by personal or community efforts.

An extension campaign involves:
- a co-ordinated plan using a range of communication and
   educational skills to achieve widespread recognition
   of a problem and the adoption of appropriate solutions
   to overcome it;
- the co-ordinated use of a variety of extension methods
   in a carefully planned sequence and degree to achieve
   the necessary recognition and action; and
- a planned effort to achieve the objective over a
   particular period of time, related to the purpose of
   the campaign.

Extension campaigns are based on the principle, that the more people are exposed to an idea, the more likely they are to accept or adopt it. They must be however conducted properly in which the needs, views and constraints of the people are not only fully respected but incorporated both into the information and activity components of the campaign.

5.2.3.6 Video recorder and monitor

Video recorder and monitor adds both vision, movement and in most cases colour. These qualities greatly increase its value as a forestry extension method. Video recorder and minotor can play a major role in reorienting and training extension agents and in promoting extension work to the general public in the project areas.

Using simple video recorders and monitors of various types can enable extension agents of the East Usambara Catchment Forest Project to assess their own performances in a wide variety of situations. It can also enable the extension agents to study critically, at leisure the reactions of the audience to their performances, based on facial expressions, body movements or reactions to statements and questions raised during the meetings. Even simple recordings, which are not intended for wide showing, can be of great assistance both in improving the performance of the extension agents and in assessing the interest and value of the material being covered.

More professionally produced extension materials can be used in the project as short programmes for extension agents in participatory workshops either in the morning or evening, so as to provide a properly structured course of study over a relatively short period without the loss of workshop time.

Recordings can be made of result or method demonstrations compressing a length of period of time into an hour or so, or demonstrating a technique skilfully and with all the necessary resources. These can be shown as short programmes of roughly

twenty minutes each followed by discussion and a review or further demonstrations if required.

If a simple video camera and recorder are available, initial attempts at recording should be on a modest scale and limited to programmes of few minutes. The fact that a sequence taken by a video camera can be reviewed on the monitor of the camera immediately it is recorded enables faults to be corrected and the general level of presentation to be improved very rapidly. Recordings made on simple video equipment cannot normally be edited to the standard required for wide-scale use but the experience that can be gained in producing these is a valuable contribution to more effective presentation of forestry extension materials.

5.3 Monitoring, Evaluation and Feedback

Three essential features of forestry extension programme are:
- monitoring;
- evaluation; and
- feedback.

Monitoring has been defined as a continuos or periodic surveillance over the implementation of a project to ensure that input deliveries, work schedules, targeted outputs and other required actions are proceeding according to plan (IFAD, 1984).

Evaluation is a systematic approach to assessing as objectively as possible the relevance, effectiveness and impact of a project in the context of the project activities and the needs of the people. Evaluation essentially analyses the rational and logic of the project (objective or design), reviews implementation process (input, activities and implementation management) and the emerging results (output, effect, impact). It assesses, in the light of the foregoing, the validity and relevance of project objectives and design, and the project effectiveness and efficiency in achieving the intended results (FAO, 1985).

Feedback can be defined as applying promptly and effectively information gathered by the monitoring or evaluation processes to promote the achievement of the project objectives or to rectify factors impending its achievement. It also alters the emphasis or direction of the project activities where these are found to be out of line with the requirements of the situation or the wishes and needs of the people.

The principal functions of monitoring and evaluation are to enable the people and the staff involved in extension programmes to learn from the achievements and problems of each programme in order to devise methods of planning and implementing subsequent programmes more effectively. Monitoring and evaluation are based on information gathered from the participants and intended beneficiaries of the project, at all levels.

5.4 Reorientation and Training/Retraining

Reorientation is defined in this study as the process of enabling the extension agents or field staff actively participate in forestry development. Reorientation encompasses change in value systems and attitudes whereas training and

retraining refer to a process of acquisition of knowledge and skills. For the case of the East Usambara Catchment Forest Project both reorientation and training/retraining are considered to be important.

5.4.1 The reorientation process

Reorientation which encompasses change in value systems and attitude is different from training or retraining because it tackles the fundamental issues, not just acquisition of knowledge and skills. The aim would be to create an environment in the project in which re-orientation is possible by:

(a) encouraging forest extension agents to change from policing towards participation. This means changes in the extension agent's tasks;

(b) changing the value systems and hierarchies project officials and advisers impose on extension agents;

(c) establishing relationships of respect and trust between project officials and extension agents and developing more decision-making responsibility to the field staff;

(d) promoting experience - sharing, reflection and confidence - building among the extension agents;

(e) helping the extension agents to identify problems and define new approaches; and,

(f) supporting the extension agents and applauding their efforts.

We believe that these changes will enable the field staff to:

. take initiatives, change their attitudes and develop commitment to forestry development; and

. participate in forestry activities by developing new relationships with villagers and subsequently institutionalizing their new roles and working styles.

The field staff need to be seen as "active and creative, as agents in their own right, not simply as respondents of stimuli. We conclude that three different strategies are necessary:

- participatory workshops;
- field support; and
- institutional changes.

5.4.1.1. Participatory workshops

(i) <u>Strategy</u>:

The first reorientation strategy is the running of participatory workshops. These have also been referred to as reorientation and start-up workshops (Gronow and Shrestha, 1988). In these workshops there is no teacher/pupil relationship, rather it is accepted that everyone has something to contribute to the learning process. The objective is to encourage people to learn from their own experience. If the field staff are to be active in the field then they have to be allowed to be active in the classroom.

The major goal of these workshops is:

> ...To begin the process of re-orientation the participants
> towards their new roles; that of facilitators of
> forestry development and subsequently to help them
> develop their own approaches, strategies, and work
> programmes to meet their goals (Gronow & Shrestha, 1988).

(ii) <u>Methodology</u>:

The workshops emphasize learning from experience or experiential model. This model can also be successfully used in project management meetings or seminars of local leaders, and during the extension work in villages. The model is useful in any situation where open discussion or team building or reaching a consensus is needed. See figure 1 below.

Figure 1. Experiential model

The "experience" shared in the workshops is that of the participants. It is accepted that

> ...Learning is not something which can be
> "injected" into the participants; it has
> to emerge from their own experiences to
> be useful, real and practical (Wzorec,
> 1986:4).

The workshop facilitator and participating senior officers also had to make the effort to listen to and understand the perspective of the field staff participants.

The field staff participants will come with a wealth of experience, insights, problems and ideas. In addition the workshop methodology itself will provide new experiences. Since agreement by group consensus is supposed to be a key factor in the East Usambara Catchment Forest Project, the workshops should be designed to show the participants how consensus can be reached - by actually experiencing it. In this way the workshops will have relevance to what participants would do in the villages.

"Reflection" will enable the field staff to re-evaluate their attitudes, values and roles. Suggested topics on which the participants should be invited to reflect critically are:

- reasons for forest destruction;
- the villagers' ability to manage the forests;
- the villagers' role in forestry development; and
- the use of extension materials.

Reflection should be encouraged by the facilitator by posing problems, challenging inconsistencies and using the socratic method of questioning (i.e. by which the respondent comes to his/her own realisation). Invariably in the open but challenging climate of the workshops prevalent attitudes give away to more honest ones. In the workshops it should ultimately be agreed that forest destruction in the East Usambara Catchment Forest Project is due not merely to ignorance and overpopulation and that it is the villagers' and not the project or Forest Department's role to manage the forest. The field staff should be made slowly to accept the villager's ability to take the leading role in forest development.

The participants should be encouraged to draw "conclusions" from their analyses. Coming to a conclusion is important to produce a sense of consensus, commitment to change and increasing self-confidence. It also helps people feel they are learning.

Also participants should be encouraged to commit themselves to putting their conclusions into "practice" both during the workshops by role playing, in field trips and back at work through work plans.

(iii) Workshop facilitator's role:

Just as a facilitator must have "faith in people", must not impose, must try to "create awareness and help participants analyze their situations" so must the workshop facilitator.

Throughout the workshop the facilitator should provide a role model for the participants' subsequent work in villages of stimulating not directing. To help ensure the success of the workshop the facilitator must also be responsible for:

(a) encouraging the breakdown of hierarchical structures
     by helping everyone to take initiatives: officers
     and field staff equally;
(b) encouraging those taking part to be active and
     expressive. The facilitator has to create and
     maintain a non-threatening learning climate; to
     validate the participants' experiences i.e. help
     them believe their experiences are valuable. This
     again has parallels with the role the field staff
     will play in the community. This climate can be
     created by:
     . keeping each person involved and active by having
        a common agenda and engaging in small group work;
     . ensuring involvement of everyone in decision
        making so that each participant feels committed
        to carrying it out;
     . giving and receiving feedback;
     . dealing with conflicts constructively, so that
        no one feels that they have been excluded.
(c) Sustaining self-motivation throughout the workshop;
     this is done by "carrot and stick" methods. To
     accommodate different learning styles the facilitator
     needs to use a variety of methods, e.g.:
     . Large/small group discussion;
     . Games;
     . Case studies;
     . Role playing;
     . Lectures;
     . Brain storming
     . Interviews;
     . Field visits;
     . Model building.

the lack of skilled workshop facilitators will hinder efforts to promote this learning model. In the short-term advisers can make a valuable contribution to reorientation. But most advisers are unfit to help in field staff reorientation unless first reoriented themselves: Professionals are often arrogant, assuming a false superior knowledge and superior status (Chambers, 1983:6). Occasionally the value systems of the advisers are as described by Hancock (1989).

     ...the extent of advisers involvement in the
     national development efforts is so great that,
     in some schemes, it is genuinely difficult to
     discern whether the real beneficiaries are
     even intended to be the rural poor, or whether,

in fact, the whole exercise has been designed
around the needs and interests of experts.

(iv) Workshop content:

The focus of the workshop should be on those taking part rather than on particular subject matter. As far as possible the participants should be involved in identifying the workshop objectives and topics for discussion and planning the methodology and logistics. Because the participants themselves help identify their learning needs and set the goals, the content is usually highly relevant.

The facilitator does, however, need to be prepared when a topic is suggested. Session guides covering topics which from experience almost all participants want to discuss, should be included in the manual and be adjusted for each workshop depending on the demands of the participants. Each guide should suggest the purpose, learning objectives, activities, resources and time needed to discuss a topic.

5.4.1.2 Field support

Once the workshop is over, the reorientation process should continue in the field. The field staff interviewed in this study have repeatedly said that working on their own presents difficulties with regard to security, credibility, confidence and political pressure. Their relation to some influential villagers, low official status and the negative reputation of the Forest department make them feel insecure.

Without a role model, the field staff will initially find it difficult to develop the skills needed to initiate and maintain dialogue with the villagers. Without help it is difficult to develop strategies. The type of moral and practical support provided at the workshop has to be provided in the field until the field staff's role reorientation is completely instituted (both in the villages and at the project level).

The need for intensive field support to staff should only be short-term, until skills develop and until the villagers have faith in the extension agents. However, if this field support is not forthcoming the reorientation process goes no further than the end of the workshop.

5.4.1.3 Institutional change

A major challenge over the coming decades in Tanzania is bureaucratic reorientation, including a change from authoritarian to participatory styles and a shift in responsiveness from orders from above to demands from below (Chambers, 1983:212). The working environment in which field staff find themselves must also be conducive to their new role. It will be difficult to the field staff to adopt a service-oriented role when the value system they work within encourages them otherwise. Change in the value system of the East Usambara Catchment Forest Project and Forest Department in general needs to come from the higher levels first - the senior officials and senior project advisers.

Furthermore, the present hierarchical working styles of the project and Forest Department at large is not suitable for sustaining participatory forestry. An example of one area in which change is needed is field staff meetings. These are at present often in the style chambers (1983:211) describes:

> ...In meetings subordinates are upbraided,
> cajoled and given orders. They are asked
> to report of targets achieved, not for
> problems encountered. Poor performance of
> deviant initiatives are rewarded by
> punishment of posting. Promotion comes,
> if at all, through compliance or through
> working in headquarters. Real problems
> of implementation or impact are repressed;
> appearances of achievements applauded.
> Senior officers do not learn from their
> subordinates and subordinates do not learn
> from their rural clients.

A more appropriate style of working would be stimulative and supportive rather than directive and punitive.

In the long-term the project needs to build up its own capacity to support its field staff. The level of support need not be as intense as that given at the beginning but it is necessary if reorientation is to be sustained. This will require institutional changes in working style and in setting up staff meetings and follow-up workshops.

Another change that is needed if the field staff's commitment is to be sustained is that good work should be recognized. At present it seems field staff rarely receive recognition. the problem of the field staff's inadequate remuneration needs also to be considered. Farmers also need to get used to making decisions by consensus. Different extension methods as suggested in this study are required to build their confidence. Regular users' assemblies and users' committee meetings, if properly conducted in a participatory way, can inculcate the necessary environment for participation. User group networking activities can strengthen users' position and enable them to put pressure on the project and Forest Department to be more people oriented.

We feel that reorientation is possible only through a deliberately sympathetic approach to field staff. Our experience suggests very strongly that there is no other way of enabling the field staff to become dedicated to forestry development and become professional in their job than for those in positions of authority to trust them, support them and treat them professionally. It needs no emphasis therefore to say that, a reorientation process based on participatory workshops and field support can bring about necessary changes.

5.4.2 Training/Retraining

Training/Retraining form a major element in the establishment and implementation of a forestry extension programme. Training/Retraining in this study, for convenience is considered under two main headings:

- formal staff education and training in extension; and
- public information and training programmes.

There must, however, be close coordination between all forms and levels of training to ensure that they serve common objectives and seek to reach these by compatible means. Responsibility for ensuring this coordination should rest on a senior staff member at the project headquarters who should have responsibility for establishing effective channels of consultation and cooperation between the various organisations involved in extension education and training.

5.4.2.1 Staff education and training programmes

(i) Professional level:

It is proposed that professional forestry staff (B.Sc/M.Sc holders) engaged in extension activities under the project should undertake a course lasting one academic year in subjects related specially to forestry extension activities. The programme should be located at an academic institution which would award a recognised higher qualifications or degree to successful candidates. The field of study would cover areas of:
- communication;
- research;
- planning; and
- organization of extension activities.

Considerable emphasis should be placed on viewing forestry extension as one aspect of an overall rural development programme and of integrating forestry programmes into the established patterns of rural life in the area. The staffing and academic requirements of the course would be determined by the institution undertaking the programme.

(ii) Technical level:

Technical level education envisaged a programme of three months study for staff who have completed a two year post-secondary course in forestry and who have some subsequent field experience. The training would be located at a forestry or agricultural college and would involve extensive field and practical training components. Considerable emphasis should be placed on understanding the joint roles of forestry, agriculture, animal husbandry, water supplies and education in rural development and in integrating forestry extension activities into overall rural development programmes. The staffing and academic requirements in this case would also be determined by the college or institution organizing the course.

(iii) Vocational level:

The vocational training programme could run at a number of locations of the project simultaneously; if staff requirements or environmental conditions in the area justify it. The training should focus on skills of communication and demonstration. Communication is an essential component of an extension forester's job. The objective should be to teach them the techniques of communication and give them different examples of methods of communication. It is necessary to stress the two-

way nature of communication and that listening to the public is an important part of an extension forester's job. The opportunity to use tree planting and management as a subject matter of exercise, need to be taken as an appropriate topic.

In this way it would be possible to produce extension assistants who could in addition to their responsibilities for promoting extension programmes, provide training in extension techniques to large number of people participating in these, or in other development programmes where a forestry component would prove of value.

5.4.2.1 Public information and training programmes

Public information and training programmes are required to acquaint government officials, cultural and religious leaders and leaders of business organisations with the philosophy, requirements and proposals of the project's extension programme, in order to secure an understanding of such a programme. An important objective is to secure a two way flow of information, which will promote the understanding of, and support by, influential persons for the objectives and methods of the extension programme, while at the same time giving the project access to the views of this strata.

At the operational level (district level and below), the public information and training programmes should place more emphasis on the training aspects of the work. Information plays an important role at the awareness and interest phases of an extension programme while a decision to implement a specific programme may generate a considerable need for training local voluntary leaders to motivate and instruct the communities to carry out the agreed tasks.

A basic requirement of all public information and training programmes is a clear determination of the objectives of each particular activity. The objectives should be expressed in specific terms, such as a change in <u>knowledge</u>, <u>attitudes</u> and <u>skills</u> relevant to the topic. To achieve this it is desirable to link audiences more closely to the specific objectives of a programme. While a general lecture on forestry extension requirements or proposals to an audience of government officials may appear to have been successful, it may be of little practical value unless it has established how members of the audience are expected to show their practical support for the proposals and how their subsequent actions can be measured. An instructional programme for religious leaders, linking extension concepts to the tenets of their faith, with its success measured by how many favourable pronouncements they make on it in future, might be effective in the area.

Some appropriate forms of public information and training programmes which can be used in forestry extension programme of the East Usambara Catchment Forest Project are as follows:

(i) <u>Conferences</u>:

Their function may be to promote a pooling of information or ideas and to develop a common stand on a particular topic. They consists of one or more sessions at which new ideas or information are presented in a stimulating way for subsequent

discussion by the participants. In some cases, they may involve field visits to illustrate particular points.

(ii) Training meetings:

Training meetings can be organised at many different levels in information or training programme. They normally require the participation of persons in activities leading to the acquisition of knowledge and skills.

(iii) Short courses:

These are designed to give more in depth training and adequate practical experience to participants on some important technical matters. These may cover topics such as establishment of forest nurseries, or simple techniques of contouring land before planting.

(iv) Exchange visits:

These are carefully organised visits between participants in different fields of work. They can normally only be implemented when a certain degree of understanding and cooperation already exists between the different organisations involved.

CHAPTER VI

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

6.1.1. Farmers

The study showed clearly that in order to achieve the objectives intended, there is a need to identify separately forest/tree needs of men and women. Women in particular needs a special attention, because the effects on them are severe because they are more dependent on tree and forest products. It needs no emphasis therefore, to say that by failing to recognise the importance of forest resources to women the project may introduce technologies/innovations that can cut women off from these critical resources.

It also showed that there is general decline of main food crops i.e. cassava and maize. Farmers feel that this is caused by over-cultivation and insufficient fallow periods. This trend can only be readdressed by adopting improved agronomic practices such as agrofestry, improved seeds etc. It is concluded therefore that, extension agents should give their advises not only in forestry matters but in agricultural matters as well. This is because there is a salient correlation between agricultural production and forest conservation. When farmers cannot produce enough in their land, they will keep on cutting more forests. In this context farmers are held responsible for the destructive as if they have alternative choice of resources to depend on for their livelihood, while they really don't.

Moreover, the study showed that the farmers have a lot of indigenous knowledge about trees and forests. Therefore it is important for the extension agents to start from this knowledge base. It was also clearly shown by this study that most farmers get their forest/tree products from the forest reserves rather illegally. In other words they are trespassers on their own land. It is important to stress that if the project is to get the cooperation of these people, this trend need to be reversed. Farmers should be made to feel that they have a stake to the reserves.

6.1.2 Extension workers

Most extension agents in the project are mature and relatively experienced. These two qualities gives the project a very good starting point for achieving its objective of involving the people in forest conservation. This is because this type of extension cadre can easily command respect and build rapport with the farmers, but definitely they need to be re-oriented to this new role of working with farmers not with trees as it is the case at the moment.

6.1.3 Functional officers and collaborative institution

It seems the functional officers in the fields of forestry and agriculture/livestock do support the project. But they also would like to be involved much and more in future.

For the case of the East Usambara Agricultural Development and Environmental Conservation Project, it seems there is enough will power to collaborate with the East Usambara Catchment Forest Project.

6.2 Recommendations

Considering the overall objective of the project of involving the local people in conserving the forest reserves of East Usambaras, the following recommendations can be made:

(i)   The main target group i.e. farmers seems to have a lot of
        indigenous knowledge which should be utilized fully by
        the project.

(ii)   A combination of extension methods need to be used to
        tape the indigenous knowledge.

(iii)   There is a great need of reorienting the extension staff
        and project officials by using participatory workshops.
        In these workshops there is no teacher/pupil
        relationship, rather it is accepted that everyone has
        something to contribute to the learning process.

(iv)   The participatory workshops however if they are to be
        effective they should be accompanied by field support.
        If this field support is not going to be provided,
        the reorientation process will go no further than
        the end of the workshops.

(v)   There is need for institutional change; including a
        charge from authoritarian to participatory styles
        and a shift in responsiveness from orders from above
        to demands from below. A more appropriate style of
        working in the project should be stimulative and
        supportive rather than directive and punitive.

(vi)   Training/retraining should make a major element in
        the East Usambara Catchment Forest Project.
        Training/retraining should involve both formal staff
        education and training in extension and public
        information and training programmes.

(vii)   Extension packages to be adopted in the project
        should be flexible and adaptive. This can
        only be possible if the packages are based on
        the local needs and conditions. Therefore it is
        recommended that needs assessment be carried
        out periodically; at least once per year.

(viii) The extension and communication programme like
        the one proposed in this document, should

constantly evolve and adapt itself to different needs, perceptions and situations. If this is to be possible a research support is required. Areas of research likely to be relevant include: Sociology, tree species, soil and water conservation, and indigenous systems of production.

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