



SOCIAL FORESTRY NETWORK



THE CHALLENGE FOR SOCIAL FORESTRY EXTENSION WORK IN PASTORAL AFRICA

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TREE PLANTING OR SOCIAL RESPONSIBILITY?

Pastoral societies, where people live in fragile and vulnerable ecosystems, have adapted well to an often harsh environment. They have over time gathered a vast repertoire of local knowledge about their resource base, its weaknesses and strengths, its utilisation and management. This was a form of farmer (pastoralist) participatory research before any such research existed. It is complex and based on a whole range of survival and insurance measures that help mitigate against the inevitable hard times due to drought and disease etc and the vagaries of climate.

However, there is now a general consensus that almost all the development interventions to date have not helped the impoverished pastoralists at all. Pastoralists have survived despite development schemes, not because of them. As development planners have seen the schemes of range managers and economists fail, they are now coming to welcome socio-anthropological inputs (Baxter and Hogg, 1987).

Over the past three decades, pastoral societies have suffered from droughts, famines, political interference, physical insecurity, armed aggression and increasing impoverishment. They have become enmeshed in the cash economy and in international markets, in both of which their positions have been so weak that they have been grossly victimized. Ignorant interventions by governments and NGOs have more often than not made things worse. Thus considerable tracts of their grazing and much of their water has been alienated (Sandford, 1983).

Why is this? Projects are planned and implemented without an adequate understanding of the pastoral system, because:

- They are often based on western ideas of the pastoral situation where the local knowledge system is basically ignored, and

- What pastoralists say they do, is the ideal behaviour, compared to the actual and observed behaviour may not be sufficient for effective planning since the observed behaviour and a fuller understanding of the pastoral system is precluded (Fry and McCabe, 1986).

Many projects tend to centre around curing the ailment, rather than preventing the problem, as this may be easier to quantify. In this sense tree nurseries and planting are the priority together with related extension packages. The wider issue of natural resource management is often not given the attention it deserves because of the lack of a conceptual model combined with the difficulties of carrying out such work in a way that can show measurable results. Where there has been success, a strong sociological and people oriented link has usually been established.

Yet what is the result? It is commonly acknowledged that since the UN Conference on Desertification, little has really changed for the better and where there has been success it has often been limited in size and scope. This is exemplified by the disappointing progress in village woodlots in the Sahel where between 1975-82 over \$160 million was spent on various community forestry programmes. By 1982 the achievements were about 20,000 ha of 'not doing very well' plantations (at a cost of approximately \$8,000 per ha). People do not see themselves as benefitting from such tree planting programmes (Eckholm *et al*, 1984).

There is a strong need for change in the purpose, practice and personnel of forestry departments who have been too much concerned with 'policeman' and production aspects. Successful community forestry demands that foresters move out of forests and help people and this requires a genuine popular participation in decision making (Eckholm *et al*, 1984).

As is noted by Kerkhof (1990) in a review of nineteen agroforestry projects in Africa, one of the principal lessons is the importance of mobilizing communities and being able to react to their needs and priorities, even if that means a change in project design. Techniques must fit into the local context and meet farmers' needs for low-risk and low-investment strategies. Unfortunately research institutions, development agencies and government bodies tend to ignore or at best assume this most important and vital variable to the development of the arid and semi-arid lands, namely the people who live there, and the local participation implicit.

Too often the talk and jargon by project planners and implementers is of participation, awareness and social responsibility, yet the practice is one of tree nurseries and tree planting in virtual isolation from the people. This is because development strategies are primarily oriented towards the more easily definable and countable projects, for example the number of health facilities constructed, veterinary vaccinations carried out, school enrolment, land put under irrigation, trees planted, food for work completed, water structures installed and so on. Such development inputs tend to offer alternatives to pastoralism rather than strengthening the pastoral system to produce more for the local and national economy in terms of livestock sold and improved food security. Yet nowhere in this shopping list is the prime target seriously tackled, that of range and woodland management and utilisation combined with the people who actually live in and manage such lands. It is in these areas that the traditional knowledge base is strongest as it relates to trees.

But the argument then reverts back to the traditionally held attitude about the people who live in these dry lands which states that they are 'backward', 'primitive', 'nomadic', 'conservative'. Such peoples are often minorities and relatively powerless in the political structure and therefore they have very little real say in policy issues that govern the dry areas. Then because they are 'backward', development is planned and implemented for them, usually by outsiders who are often not familiar with the area.

The traditional approach to extension is, basically, one of an extension package delivery service, which may work quite well in the higher potential areas, but does not work so well in the dry lands, especially the pastoral areas where the people are more dispersed and less settled. Furthermore in trying to get the message across one can often miss out a great deal of very valuable local information on the issue. Thus a more participatory approach is to be strived for where we learn about the existing situation, the potentials and constraints, the problems and possible locally identified solutions at which point various technical messages can be used as discussion points for possible and viable solutions to be implemented. The extension agent then plays a catalytic and facilitative role in this process NOT a domineering one. The target group have now been directly involved in the process. They have identified the problem areas and have helped identify possible implementable solutions and are therefore more interested and motivated to carry out such recommendations since they feel more responsible.

Because of the importance of trees in the dry lands, people living there often possess an extensive knowledge about individual tree species and their management. Building on traditional knowledge and uses of trees offers one of the most effective ways of stimulating new tree growing (Eckholm *et al.*, 1984).

It is in such pastoral areas that a strong natural resource management and conservation policy is needed, based on local participation. But, because of the vastness of the land areas involved, the mobility of the people and the size of the problems such work is often talked about but rarely carried out in any real holistic fashion. In promoting people's participation, the local people are given the chance to define their own objectives and help in activating social processes involved in decision making and adoption of solutions (Raintree and Hoskins, 1990). This can help planners and implementers understand the existing system. Currently the role of extension is strongly supported in policy documents, yet physical and logistic support is often weak.

This paper attempts, in the context of people's participation in the development process in the drylands, to show why and how this can be achieved in a real and meaningful way. In a real way by trying to help create social responsibility for natural resource management, not just around settlements and discrete tree planting but as part of the wider management system in the drylands. In a meaningful way through a participatory action oriented dialogue with the local people. The Turkana forestry extension programme is looked at as a case study that could form a basis to be adapted in other dry and pastoral lands in Africa.

DRYLAND VERSUS HIGH POTENTIAL AREA DEVELOPMENT

Too many people think that the dryland and pastoral areas are just an extension of other, usually higher potential, land types and so try to advocate similar or related development packages. Yet the dryland areas are significantly different and increasingly so as rainfall decreases. It is because of this that people living in such areas have adapted land management practices to help them survive and indeed thrive in such areas. However the emphasis is on livestock and not crops which are more susceptible to the vagaries of climate.

Likewise land management tends, because of necessity, to be large scale and expansive to incorporate wet and dry season grazing. As a result the livestock management strategies of the pastoralists do not necessarily lead to environmental degradation, except in areas close to settlements. It is the people of such areas who have the environmental ethos in terms of environmental conservation and sustainable land use as compared to outsiders since knowledge of the environment is vital to their livelihoods. This is linked to their understanding and knowledge of the local resources.

However, the alienation of grazing land for dry land agriculture in many areas has forced pastoralists to use land far more intensively than under traditional management strategies. By changing the nature of the relationship through external intervention, which has developed over generations between the environment, livestock and the human population, pastoralists are now confronted with entirely new environmental problems. Under these conditions the traditional ethic of individual maximisation of livestock can potentially lead to over grazing and environmental degradation.

Environmental degradation is also related to policy and tenure. Although in the high potential areas of Kenya such traditional rights are taken into account during demarcation, they are essentially ignored in the drier areas for instance. Many of the government demarcated group ranches in Maasai, Kenya and other areas are not based on either ecologically or sociologically viable grazing units as a result such ranches are in a precarious state now, and their ecology at risk.

Given the vastness of many dryland areas (eg Turkana district, Kenya, is about 70,000 km² in size), it makes good sense to lay emphasis on sustained conservation and utilisation of the natural resources as opposed to tree planting exercises, through conservation and management of existing trees; natural regeneration of trees; and building on existing viable and valuable natural resource management strategies.

There are characteristics of dryland silvo-pastoral systems which are related directly to drought resistance in pastoralism and to the resilience of the system. For example in Turkana, Ellis *et al.* (1988) noted the following important factors:

- availability of large diverse ranges
- access to productive dry season ranges, including trees

- high mobility and low to moderate stocking rates
- high to moderate stock units per person
- use of wild fruits and tree foods
- low labour input rainfed or flood sorghum gardening.

PEOPLE, TREES AND THE DRYLANDS

Pastoral people have usually evolved well managed and basically sound ecological strategies which enable them to live in harmony with their environment, yet utilize the vegetation on a sustainable basis through exploiting different vegetation types (grazers, including cattle, sheep and donkeys, and browsers including camels and goats). Such silvo-pastoral systems make best use of the vegetation both in time and space through a transhumant system of wet and dry season grazing and may be combined with the setting aside of specific dry season grazing reserves. Such a system of resource management is made more complex, by a variety of necessary social controls concerned with sharing, flexibility and mobility. This is well-illustrated by the Turkana management system.

The Turkana have a well developed traditional knowledge of their flora and its uses (Morgan, 1980). Trees are especially valued. This knowledge reflects the life styles and the extent of their dependence on woody vegetation:

- Dry timber for woodfuel and charcoal
- Building timber for houses, fencing and thatching
- Food for livestock particularly in the dry season
- Wild fruits and foods for people
- Veterinary medicines for a variety of livestock diseases
- Human medicines for a variety of diseases
- Making of household utensils
- Amenity for shade to act as a meeting place
- Variety of cultural values, water purification, ceremonial.

Because of the importance of woody vegetation in Turkana, people have developed their silvo-pastoral system further especially in the drier central parts where the existing vegetation resources are relatively more important.

Within the *ere* (or wet season grazing area) a herd owner may have an *ekwar* which refers to an area of riverine forest to which the owner has usufruct rights (Barrow, 1987). Given the vital importance that the riverine woodland plays in the district, the *ekwar* is an integral and vital part of the *ere*. In the dry season it is often access to fruit and fodder trees that restricts movement. Certain important trees (eg *Acacia tortilis*, *Hyphaena coriacea*, *Cordia sinensis*, *Zizyphus mauritiana*, *Dobera glabra*, *Faidherbia albida*) are particularly protected by custom (Barrow, 1987). But *ekwar* ownership is not definite, rather it is based on the owners ability to use his *ekwar* over time and his social network to support his *ekwar* rights (Storas, 1987).

PARTICIPATION AND RESPONSIBILITY

Participatory extension can play a vital role in understanding and building on the traditional knowledge base, but the use of such knowledge is not a panacea for all development problems. However it is now encouraging that this bottom up approach is gaining increased recognition in that local problems and issues are being identified, diagnosed and remedied by or with the people and their holistic view of the situation (Leach and Mearns, 1988). There are a number of important positive reasons for incorporating local people in project planning and technology development processes:

- building on and preserving indigenous skills and knowledge rather than causing their extinction, eg articulating the management practices of Turkana silvo-pastoralism;
- giving people control over, and involvement in, the process of change in their lives, eg by encouraging responsibility in tree management, natural regeneration and sustainable use of the *ekwar* along the riverine woodlands in Turkana;
- giving people a better understanding of the technology and management practices, eg helping people to cope with a changing pastoral socio-economic situation through, for example, more efficient use of wood;

- ensuring that the innovation of a programme is appropriate and meets the people's needs, eg that tree planting or natural regeneration fits in with the Turkana silvo-pastoral system (adapted from Falconer, 1987).

This in dryland areas implies that the real work should centre around the conservation and sustained management of the existing resource together with planted trees. Therefore extension approaches should be designed to try and utilize local knowledge as a basis for a rational social forestry policy in such dry areas. Likewise issues, such as woodfuel supply and building timber, must be seen in the context of multi-purpose woody biomass management and socio-economic issues.

Building on the existing system through a participatory extension approach allows for a real and sustained improvement as it relates to the natural woodland areas, by shifting responsibility to the local people of the area and involving them directly. However, the extension facilitator must recognise the importance of the existing natural vegetation in the process, and particularly the trees. It is often too easy to emphasise what one is familiar with, ie tree nurseries and tree planting, rather than the wider less definite issue of sustainable natural resource management.

The importance of a participatory extension approach for social forestry in the arid and semi-arid areas has been stressed because the people in such areas often possess a lot of valuable knowledge about natural resource management which should be used as a basis for improvement, identifying constraints, potentials, problems and possible solutions. Further, local people recognize the importance of the natural resources and, in particular, the trees to their livelihoods. As such this cuts across sectoral boundaries and so needs to be dealt with in totality not as sectoral components. A participatory approach allows for this.

However, it is also recognized that the people living in the dry lands do not necessarily have all the answers to the problems that they encounter. It is at this point that the role of the technical input or extension message becomes important. It must be understood that the role of such an extension message is to help give the people a choice as to how they may solve the problems that have been identified. On another level such extension messages might be developed from what the people already know, but is actively re-enforced and disseminated to a wider audience.

The ideal extension system would be one of a cross sectoral integrated approach to extension. Such integrated extension can work at the local level provided that the parties concerned are motivated and interested. But it appears to be more difficult to achieve the higher one rises in the sectoral ladder. Thus if integration of extension work can be realistically carried out at the local level by such motivated and interested staff and projects, it should be promoted for the benefit of the people, the programme and the cooperating sectors. However this is not always possible, especially in the dryland areas where the areas covered are often very large with a mobile people and relatively few extension agents compared to the area they have to cover.

Secondly, though trees might be the main interest area, the sectoral extension agent has to be prepared to be involved in other sectors and where possible help out in terms of advice, and reporting back to the relevant sector concerned. In such cases the extensionist may become a generalist. This then could link into the creation of a more generalist mobile extension team who would then be responsible for the broad extension work and involve the different sectors and disciplines where and when necessary. This approach has been used in Turkana district, Kenya to varying degrees of success, but has not been institutionalized properly.

Here the Turkana extension approach is presented as an example that could be adapted to suit other dryland areas and situations (eg non-forestry including livestock development, range management etc). The details of the approach are not as important as the general guidelines for the process.

A CASE STUDY OF THE FORESTRY SECTOR OF THE TURKANA RURAL DEVELOPMENT PROGRAMME

Introduction

This case study presents an adaptation and generalisation from an on-going social forestry extension programme in Turkana District, northern Kenya. It shows how it is possible to expand extension activities over a relatively large area (Turkana District is 72,000 km²) thus reducing dependence on tree nurseries and discrete tree planting activities. Using the strength implicit in Kenya's District Focus strategy for Rural Development (see Annex 1) combined with the administrative organisation within the District (divisions, locations, sub-locations, villages) and existing traditional

institutions it is possible to design and implement a participatory social forestry extension programme. The programme outlined here, to be carried out over a period of between 2 and 6 years, would in most cases require external funding. However, this is not unrealistic given the current horizon of donor funding in the drylands.

Since 1985 the Forestry Department has conducted seven District and six Divisional workshops on natural resource management, each lasting a week. This has now developed into an on-going series of day-long village-level workshops. By early 1990, 136 such workshops had been carried out with an attendance of nearly 7,000 people (see Table 1). These workshops are meant to elicit the Turkana people's own knowledge about tree management and to encourage awareness about some of the problems that face the woodland resource.

TABLE 1 ANALYSIS OF WORKSHOP ATTENDANCE AT DISTRICT, DIVISIONAL AND LOCATIONAL LEVELS

	7 District Courses 1985-1986	6 Divisional Courses 1986	98 Locational Courses* 1986 ongoing	Total	%
Chiefs	64	39	31	134	2.6
Party Leaders	35	24	285	344	6.7
Elders — men	31	60	2,002	2,093	40.9
Government staff	68	89	506	663	13.0
NGO staff	9	9	246	264	5.1
Women		13	1,087	1,100	21.5
Facilitators	64	36	416	516	10.1
Totals	271	270	4,573	5,114	

- Notes:
- 1) *—There have been a further 38 workshops held for which there are no attendance details, representing an additional 1,786 people at an average of 47 people per course, which makes a total attendance of 6,900 people.
 - 2) Chiefs refer to government administration chiefs.
 - 3) Party leaders refer to political party leaders, eg politicians, councillors, etc.
 - 4) NGOs refer to the staff of non governmental organisations.

- 5) Facilitators refer to the staff and people who helped facilitate the seminars.

District Workshops

A series of District workshops (one week in duration) were carried out in order for the programme to gain a broad insight into the land use issues that exist in each District. The number of such workshops required depends on the size and population of the District: for example in Turkana there were 7 courses. At this level the participants were selected from the local leaders (chiefs, assistant chiefs, councillors), elders (normally selected by their chiefs), women (leaders of women's groups), teachers and extension agents.

In all these extension workshops a series of broad topics formed the basis for participatory discussion (see Table 2) centring around identifying land use values and potentials as well as problems and constraints. These topics were chosen beforehand to make replication easier in each District. They were first discussed in small groups to encourage all the people present to participate in an agreed language; then in a later plenary session where a consensus was reached and recommendations decided upon. This was combined with a number of field visits to view, illustrate and discuss the various issues first hand. Annex 2 provides an outline for a sample workshop.

The forestry extension staff were the main facilitators and catalysts of this series of extension workshops. They were assisted by extension staff from other government services or NGO's, depending on their availability, in an attempt to make the programme more integrated. Hence staff from range management, agriculture and education were particularly important. But due to the fact that there were not enough facilitators to carry out such a district wide extension programme, emphasis was also put on incorporating local leaders (elders, chiefs etc) into the process. At the District and Divisional levels they received basic awareness training, and were then asked to help run the ongoing series of village and location level workshops in their respective areas. Here it is important to note again that such a participatory approach is a two-way interaction and dialogue where the extension agent is a facilitator and a contributor, not controllers or instructors, and not assuming the attitude that the 'extensionist knows best'. At the group level a secretary was chosen who documented the discussion and recommendations reached.

**TABLE 2 SUBJECT MATTER FOR PARTICIPATORY DISCUSSION
AT THE DISTRICT AND DIVISIONAL WORKSHOPS**

Discussion areas	Some details of topics to be discussed.
Government rules	Chiefs, Agriculture and Forestry Acts, understanding of and application in Turkana. Conflicts. Use of permits.
Traditional rules	Important and not so important trees. Rules governing use of such cutting and pruning practices. Forest and tree ownership, <i>Ekwar</i> . Rules of Reserved grazing in context of natural resource management. Integration of traditional rules with policy. Conflicts.
Fuelwood and charcoal production	Methods of charcoal production, who and for whom? Export. Use of permits. Fuelwood sources and access.
Timber for building and other uses	Regulation of timber use in building. Trees that need and do not need a permit. Alternative building materials especially in settled areas.
Clearing woodland for various uses	Particularly in the context of agriculture and specifically to irrigation schemes. Traditional Turkana sorghum gardens and trees. Conflict between trees and irrigation schemes.
Tree planting	How to encourage, who should plant, how many? Where emphasis on tree planting should be placed. Methods and species to use. Issues of protection of young seedlings.
Natural woodland management	How to improve. Natural regeneration. Problems near settlements.
The role of extension	Type of extension. What should be discussed and encouraged, who should be responsible and involved in such extension.

Divisional Workshops

These followed the same procedure as the District series, but were held at divisional level and made more specific to the issues of that particular division. The participants included most of those who attended the District series combined with additional people from that division. It was sufficient to hold one one-week course in each Division.

At this level greater emphasis was given to problems of the division as well as providing some basic extension training to the participants so that they could help the foresters carry out village-level seminars.

Locational and Village-Level Workshops

Selection of participants at this level was more ad hoc, and was often the responsibility of the local chief, assistant chief or elders. Such workshops were for one or two days only, held in the village or location concerned, under a tree or at a primary school for example.

It was not possible to go through all the topics covered in a one week District type workshop in one day. However, the material can be divided into three one day workshops at the village-level. Once again the discussion topics were made more locational or village specific, as were the field visits. At the village-level it was usually the forester or one of their assistants who acted as secretary to document the observations and recommendations of the group (see Annex 2 for workshop details).

Sample Costs of such a Programme

It is difficult to give an accurate assessment of the costs involved. The example given here from Turkana is based on 1989 costs. Also, it only itemizes the direct costs of the seminars and not the hidden costs of extensionist salaries etc since they normally are part of the recurrent budget if the project is implemented through government channels. Obviously these figures will vary considerably and depend on local situations, overheads etc. The example given here would be at the more expensive end.

a) Costs of a week long residential workshop, together with necessary fuel and logistics:

● 40 participants/five days full board and lodging	\$ 1,300
● transport costs (for field visits)	\$ 300
● Other costs (reporting, incidentals)	\$ 200
Total	<hr/> \$ 1,800

b) Costs for village-level one day seminar for forty people

● food and preparation costs	\$ 200
● fuel and other incidentals	\$ 150
Total	<hr/> \$ 350

This presupposes that the costs of a simple mobile kitchen (including stoves, kitchen equipment, plates, mugs etc.) set up have already been met (approximately \$700). Thus depending on the budget, and the spread of the project, this can give an idea of what it will cost to carry out such participatory extension programmes.

In-Service Training and the Involvement of Schools

The advantage of such an approach at district, divisional and village-level and a methodology that is replicable is that the recommendations and findings coming out can be compared and contrasted with other areas in the project. Likewise they can be used to check and counter check other workshop findings, as well as forming a basis for future project activities, a firm basis for implementing solutions, setting a research agenda and helping to affect policy.

This approach was also used with other target groups, for example, as part of in-service teacher training courses in the district. This has resulted in the production of a forestry handbook for teachers in Turkana District based on the contribution of about 500 teachers, as well as the initiation of primary schools tree management competitions. Within the Forestry Department there have been extension training courses for tree nursery headmen and forestry patrolmen which help to reinforce the main thrust of the extension work with the people. In order to try and show that the woodland resources of Turkana District need to be treated in a holistic framework, the forestry programme has had extension input into a variety of livestock, agriculture, and water development programmes.

BUILDING ON LOCAL EXPERTISE AND RESPONSIBILITY

Popular Contact with the People on Social Forestry Issues

First and foremost, however, such an approach gets the programme staff really in contact with the local people. This may be a naive statement, but then how often do projects really get in contact with their 'target group'? The size and variety of representation at all the extension workshops held in Turkana is given in Table 1. As noted in a subsequent extension monitoring and evaluation exercise (Barrow, 1991), this process has had a significant multiplier effect in that those who attend forest seminars appear to be spreading the message on a significant scale. The percentage

of respondents who had one or more extension contacts increased from 32% in 1988 to 43% in 1989. Table 3 indicates that the source of forest extension also varied considerably, though chiefs and elders were the most important sources followed by assistant chiefs, councillors and foresters.

TABLE 3 SOURCE OF FORESTRY EXTENSION

SOURCE	% OF TOTAL	
	1988	1989
CHIEF	73	83
ASSISTANT CHIEF	70	59
ELDER	64	70
COUNCILLOR	15	54
TEACHER	3	13
FORESTER	33	53
DISTRICT OFFICER	25	40
MISSIONARY, CHURCH GROUP	15	25
OTHER EXTENSION STAFF	32	40
OTHER PEOPLE	2	7

(Barrow, 1991)

TABLE 4 TOPICS COVERED IN TURKANA FORESTRY EXTENSION

TOPIC	% OF TOTAL	
	1988	1989
TREE PLANTING	70	96
TREE PROTECTION	88	94
TREE CONSERVATION	77	84
TREE REGENERATION	1	22
CHARCOAL ISSUES	8	37
WOODFUEL ISSUES	2	40
TREES FOR BUILDING TIMBER	3	26
FORESTRY AND PERMITS	20	75
TREES FOR FOOD	76	72

(Barrow, 1990)

Likewise the subject matter discussed varied (see Table 4). Tree planting, protection and conservation were the most important topics

(respectively—55%, 69% and 60% in 1988 to 95%, 93% and 84% in 1989), followed by forestry permits and trees for food for people and livestock (16% and 59% in 1988 to 74% and 71% in 1989). Discussions centring on tree regeneration, charcoal and fuel issues, and trees for building increased considerably between 1988 and 1989 (1%, 6%, 2% and 2% in 1988 to 22%, 37%, 40% and 26% in 1989).

Awareness and Responsibility Creation

The workshops created a heightened awareness about a whole range of social forestry issues ranging from tree planting to protection of young natural regeneration. This raised awareness led to an increase in numbers of trees planted. Table 5 summarizes these results.

TABLE 5 SUMMARY OF RESULTS OF FORESTRY EXTENSION

RESULTS	% OF TOTAL	
	1988	1989
PLANTED 1-4 TREES	17	29
PLANTED >5 TREES	35	32
TALKED TO 1-20 PEOPLE	41	34
TALKED TO >20 PEOPLE	18	17
PROTECTED YOUNG REGENERATION	13	78
PROTECTED LARGE TREES	24	76
PLANTED TREES AND TALKED TO PEOPLE	37	48
TALKED TO PEOPLE--PLANTED NO TREES	24	30
PLANTED TREES--NOT TALKED TO PEOPLE	15	13

(Barrow, 1991)

The number of people planting trees increased from 52% in 1988 to 61% in 1989 and the largest increase took place amongst those who planted between 1 and 4 trees (17% to 29%). Observation and Forestry Department records suggest that trees are primarily planted around the homestead on an individual basis and associated with settlements. However, it was often difficult for respondents to separate trees planted by themselves and those planted as a result of an institutional intervention such

as food for work and paid tree planting.

Other effects of the forest extension work carried out are more qualitative and reflect attitudinal changes which are difficult to quantify. In 1988, 13% of people indicated that they protect naturally regenerating young trees. This figure rose to 78% in 1989. The figures for protecting mature trees were similar—24% in 1988 to 76% in 1989. More people planted trees and talked to people about forestry (37% in 1988 to 48% in 1989). While 24% planted no trees but did talk to people in 1988, rising to 30% in 1989. The figure for those who planted trees and did not talk to people was similar, 15% in 1988 and 13% in 1989.

These results indicate that forestry issues and subjects are discussed on a wide scale, which shows a considerable increase in awareness. Informal sources, including discussions with missionaries and NGO staff, substantiate this view on a district wide basis. Likewise many people say how many more trees there are now in Turkana, through both planting and natural regeneration. Aerial photographs taken in the 1950's (Aldev, 1956:210) indicate that there were fewer trees then than at present (Barrow, 1989, personal photography) yet the population of the District headquarters, Lodwar, has increased many times. Forestry Department observations and records indicate an increasing amount of natural regeneration especially near settlements, though the number of tree seedlings issued has not increased dramatically. However, some of this improved regeneration is linked to a period of average and above average rainfall for the area (Meteorological Department records).

The large increase in protection and conservation of young and mature trees is indicative of the increased awareness of their management. Protection of mature trees is likely to be related to Turkana usufruct rights to trees or their *ekwar* (Barrow, 1987). This may relate to increased effectiveness on the part of forest patrolmen. The conservation of young trees may also reflect an increased understanding of the importance of natural regeneration in replacing mature and old trees in the production system.

Because of the vast areas involved and their relatively low productivity, extension packages for dry pastoral regions have to be cheap to implement. Activities such as tree planting using micro-catchments are expensive and should only be used where there is an acute problem such as may occur around settlements. Grazing control is a more important element in the

pastoral lands. However, for such interventions to be successful, there has to be strong social commitment and responsibility. This is usually easier where the traditional social structure is strong. Where such controls have been effective the impact on regeneration has been substantial. For instance, the chief and the elders of Lorugum in Turkana District implemented a simple grazing control programme in the denuded area around Lorugum, as a result of a famine feeding camp. After a period of controlled grazing there has been spectacular recovery of *Acacia tortilis* woodland over an area of 300 km², where the young trees now vary in size from a few centimetres to over 3 metres in height.

DISCOVERING Important Local Knowledge

The issue of tree ownership in Turkana District was described in the extension workshops, especially through listening to the views of chiefs and leaders. In discussions on natural woodland management, the subject of *Ekwar* emerged, more or less by accident, as an important issue in relation to riverine woodland management and ownership. As noted by the participants of a number of forestry extension seminars (Forestry Department, 1989):

"In the past people used to protect and conserve trees in certain areas which were owned by them *Ere* or *Ekwar* and all the trees in those areas could not be used by others. Groups of trees in areas near settlements may be guarded and owned by certain individuals. No stranger to the area had any rights over these trees. Migrants herding livestock and in search of fodder in times of shortage, could not enter an area and utilize the forage there without prior permission from the elders. Such an approach might be made through some relative living in the area or otherwise, the chief. Traditionally the ritual was completed by slaughtering a goat for the benefit of the elders."

Since the riverine woodlands of Turkana represent the richest areas of trees and vegetation, *Ekwar* ownership is centred around the user rights to the produce of these trees. It is in the interests of the owners to manage the trees of their *Ekwar* in a sustainable conservation-based way to ensure that it continues to be productive.

The system of *Ekwar* has important implications for the Forestry and Range Management sectors in their conservation and extension work in the

district. The *Ekwar* owners represent a discrete and known target group with whom to work, not only for the forestry sector but as a basis for an environmentally sound management system. Such indigenous natural resource management strategies should be given positive re-enforcement through extension and policy intervention. Interventions that weaken tenure rights over *Ekwar* can serve to reduce the system's resilience and therefore make it more susceptible to increased pressures due to for example drought.

One other informal but important finding from the series of workshops was the recognition that the elders have a very important role to play in natural resource management. Traditionally such elders, as they move from their homes to the meeting tree, act as forest patrolmen in the monitoring and control of the natural resources. Such a practice could be strengthened by the Forestry Department.

Research and Development Activities Resulting from the Workshops

This process focusses on the active participation of the target group in using the existing natural resource management system and has implications for both research and development programmes. As control is shifted from the project to the people themselves, it becomes more difficult to predict research and development needs.

In terms of extension, the participatory process must be clearly understood by extension agents and research officers alike, and the needs of the target group should be used to develop a research agenda. However, the people must take the overriding responsibility for the management of their natural resources, and by inference the problem areas that research should address. External agents can not do this for them.

Often, because of the lack of suitable and appropriate techniques for dryland silvo-pastoral systems, projects have to incorporate some form of research programme, often against their will since results may be inconclusive and may only generate the need for more research. Traditionally such research was carried out on-station and it often proved difficult to translate the findings into practical recommendations for farmers. Now there is a stronger move to a more farmer participatory research, which this approach supports.

People's Recommendations as Basis for Locally Adapted Policy

Based on the District Focus Strategy (see Annex 1) and at the request of participants (about 7,000 people) from the workshops, the Forestry Department has produced a draft forestry policy and guidelines for Turkana District (Forestry Department, Turkana, 1989) under a variety of headings as shown in Table 6. Such a policy has the added strength in that it emanates from the people, they have been involved in the process and can now see their recommendations articulated in a policy context.

TABLE 6 SUMMARY OF DRAFT TURKANA FORESTRY POLICY AND GUIDELINES

Heading	Comments
Present Government Rules	Charcoal, permits, relations to traditional rules, understanding, conflicts.
Traditional Rules	Articulating potentials and values in present system, eg what species can be used for what and how, role of <i>Ekwar</i> .
Charcoal/ Fuelwood Issues	Who should produce, charcoal export, access and problems of fuelwood; controls.
Building Timber	Species and management, access to, relations to usufruct rights; controls.
Agriculture	Clear felling of trees in irrigation scheme as against traditional Turkana sorghum farming (agroforestry practice). Trees and crops.
Tree Planting	Role of tree planting and natural regeneration in natural resource management. Who plants and why? Means of increasing numbers of trees.
Extension / Education	Role of extension in natural resource management. Participatory process.

Likewise such ideas may also be in line with other government sectors including range management, agriculture and administration. The question still to be addressed is how such official policies can be sufficiently flexible to incorporate local knowledge. Can they be adapted to include such values and management systems? The need to institutionalise and articulate local knowledge with current policy is often as much a challenge as the

extension approach itself.

Any pastoral development project must, if it is to have a chance of success, take account of the system of property rights which exist and the ways in which they are changing. Thus to influence the future usefully one must have some knowledge of the present. Yet many pastoral development projects ignore, or are based in ignorance of, indigenous systems of property rights.

This example of the forestry extension and training policy in Turkana is aimed at trying to combine the very important traditional, cultural and usufruct values that the Turkana have for trees and forestry together with important so called modern values (eg tree planting) and articulate this in present day development and policy frameworks. This, then, gives an idea and an example of how we can affect policy and thereby improve the process, and can also be linked to a more realistic interpretation of, for instance, Forest Acts, as they relate to drylands.

Adaptability of the Model

It is very difficult, if not impossible, to develop a standard extension package for pastoral lands where physical and social conditions vary greatly. Extension activities in these difficult farming areas should take account of farmers' reasons for caution and apparent conservatism. Given such diversity of conditions, to what extent and how can such participatory approaches be adapted to other dryland areas in East Africa and the Sahel, or to other disciplines? The approach to extension used in Turkana was developed with expansive, large scale management systems in mind, hence the pastoral bias.

The approach aimed to link the institutional (Forestry Department) and administrative divisions with a participatory process based on awareness and responsibility amongst the target population. So while the 'nuts and bolts' (discussion topics and technical content) may differ from place to place, the method allows for real participation and a means to articulate such participation in policy.

Learning from the Turkana approach it may be possible to make some short cuts. The district level seminars are important in attempting to lay the basis for the extension programme through gaining the support of as many politicians, civil servants and important elders as possible. Likewise, they

provide an overview of land use issues which may then be made more specific at village-level. The divisional workshops are, however, not such a vital part of the process as they tended to be repetitive of the district workshops. They may be left out in favour of the village-level workshops.

Sustainability of the Extension Programme

Sustainability of a project beyond the project cycle is the key to long term success of a programme in terms of enhancing institutional capacity, sustaining the development objectives and sustaining the responsibility of the people. All too often projects are started up with countless reviews and more planning, but rarely is sufficient thought given to the problem of sustainability.

Virtually by their nature, most projects will create problems relating to levels of recurrent expenditure. If implementation of a project means that the recurrent budget of the local implementing agency or ministry has to be substantially increased (for example, improved water supplies usually imply the need for improved maintenance services), then such issues have to be realistically addressed at the planning stage to ensure that the government sector budget accommodate this.

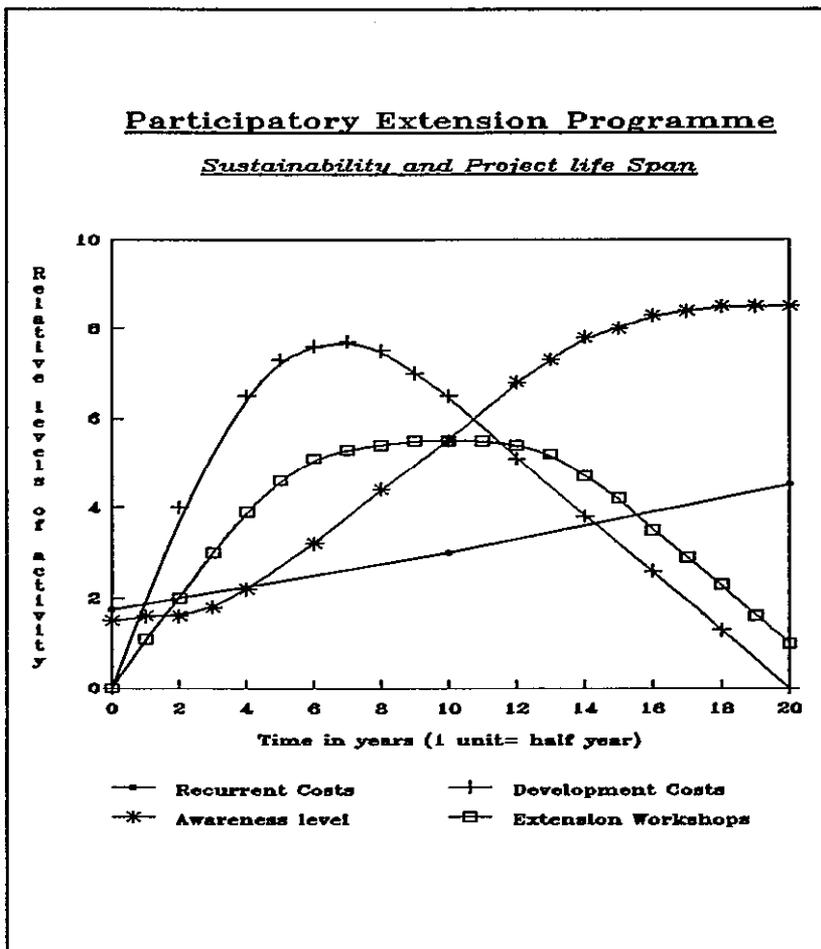
If a project is primarily concerned with trying to help the target population become more aware and responsible, then it can be justified having an increased development budget for a certain period of time to allow for an extension programme to be undertaken to raise such awareness and responsibility. This may be planned for on the understanding that the extension programme will be gradually phased down to a level that the recurrent budget can handle over a period of time.

Commitment and motivation on the part of those carrying out the project has to be sustainable. If there is a high turnover of staff then such commitment may not be so strong. Lack of real and lasting commitment is often a cause for project failure. However, in this context participatory extension programmes that try to shift responsibility to the target population may not need the same degree of long term commitment for sustainability since the level of awareness and responsibility will have been significantly increased amongst the target population who will then place demands and so pressure for the provision of services etc.

Based on experience gained from the Turkana programme, the factors

affecting the long term sustainability of the programme are presented in Figure 1. Two of the four lines on the graph represent costs—development and recurrent. One represents the extension activity curve and the other reflects the level of awareness of the local population concerning the objectives of the extension programme.

FIGURE 1 **SUSTAINABILITY AND PARTICIPATORY EXTENSION PROGRAMMES**



For instance, in the Turkana example, recurrent costs (government department costs in the project area) normally include staff payments and some contribution to transportation and the purchase of tools and materials. This budget normally increases gradually with time, though much of that increase may be related more to inflation than a real increase. This model assumes that towards the latter end of the programme the government service is capable of taking up some part of the extension programme. The development costs on the other hand are initially very high due to the initial capital investment (for transport, purchase of equipment etc.), the costs of the initial training workshops which are more expensive than the one day village-level seminars. Then after two to four years the development costs start reducing since the emphasis is on village-level workshops. This results in an increased level of awareness as a result of extension and so a decreased need for investment, but an increased need for follow-up in terms of implementation of the recommendations made by the people at the village and district levels.

In terms of the project cycle there is an initial set of district (or project area assuming it is quite large) one week workshops which take place in years 1 and 2. If it is decided to have the divisional one week workshops these can take place in year 2 or 3. The emphasis is on the village-level workshops which build up their level of activity in years 2 and 3 and reach a maximum level of activity from years 3 to 6. After year six there is a gradual reduction from years 6 to 10 to a level that can be sustained by the recurrent budget. There may need to be some follow up on the village workshops in terms of some district wide workshops in years 6 or 7.

During late 1990, a number of political decisions between the Government of Kenya and the donor (NORAD) have meant that donor funding to the Turkana Rural Development Programme (TRDP) has ceased. This has consequences for the forestry sector in terms of sustainability in that the extension programme will no longer receive any donor funding, and will have to rely on the Forestry Department's recurrent budget. In this situation there are a number of points of interest:

- The funding has ceased at about point 14 on Figure 1 (ie after about 7 years) and this represents an already downward trend in terms of the extension programme and project funding;

- The awareness and responsibility created has significantly increased over time and may have already reached an optimum;
- By the time donor funding was withdrawn (about October 1990) probably over 7,000 people (elders, women, etc) had attended the workshops. This is a significant proportion of the adult population of the district.

Therefore in terms of budgetary sustainability and the future activities to be carried out by the Forestry Department:

- Foresters should follow-up and build on the already created awareness and responsibility amongst the people at divisional and location level. In such a large district this will depend on access to transport. Success will also hinge on staff interest and motivation; continued liaison with other groups including chiefs and staff from other government departments and NGOs to help in this process; and by concentrating on the problem areas close to settlements and where transport is not so crucial.
- The District Forestry Officer should follow up at the District Development Committee level on the draft District Forestry Policy for Turkana to ensure that the recommendations coming from over 7,000 elders, leaders, and village people are articulated at the District Development Committee level (DDC) in terms of policy under the District Focus Policy.

CONCLUSIONS

The evidence presented in this case study shows how local knowledge can be successfully incorporated into the development and change process. This requires, not radical changes in the development process, but rather a change in attitude on behalf of those concerned, both in research and development. In large expansive pastoral systems in the fragile drylands the

cure is often very expensive and fraught with problems and failures; prevention is the more realistic and long term option. Prevention through awareness creation about and responsibility for the sustained management of natural resources. This is likely to have a greater long term impact than discrete, though often photogenic tree plantings.

While it is necessary to have some objective measure of success, information on physical accomplishments may be misleading, since such development is as much, or more of, a social process than a technical one. Where one objective of a project is that of increased social responsibility for natural resource management it is very difficult to give accurate measures of success or failure. However, one important overriding criterion is that of project sustainability beyond the life of the project. This is also linked to replicability both in the project area and other areas (Kerkhof, 1990) and to flexibility which is particularly important in the drylands.

Development projects tend to compartmentalize life in arid and semi-arid areas. This cannot be done, the threads are too interlinked. If development programmes took into consideration the traditional way of regulating the use of resources, the risk of ecological damage could be reduced (Storas, 1987) and pastoral areas could significantly improve their productivity and contribution to both the local and national economy yet retain ecological stability. For instance, with District Focus in Kenya these linkages can be made. Do other countries and areas have similar or related policies?

Only if people's needs and priorities are put first can true support and participation be secured, and without this there can be no long term sustainability of initiatives beyond a project cycle. In order to build upon this basis, what is needed is the development of grassroots institutional structures combined with a management structure that is flexible enough to solve such problems as may arise in the future without external assistance (Leach and Mearns, 1988).

There is now an extensive literature on the importance of taking indigenous technical knowledge as a starting point in rural development, and on the need for farmer participatory research as a basis for appropriate interventions. Indigenous technical knowledge requires a social context for its successful implementation. One condition which is a prerequisite for the development and dissemination of indigenous technical knowledge is community stability (Farrington and Martin, 1987). This may be disrupted

firstly by the penetration of a cash economy, which often leads to sacrifice of the common good for short term individual gain. Secondly, population pressure on resources and incipient land degradation may exceed the capacity of local institutions to mediate the process of environmental change through the vehicles of indigenous technical knowledge (Leach and Mearns, 1988).

As Leach and Mearns (1988:79) pointed out:

A major constraint to the implementation of effective agro-forestry is the way in which institutional and disciplinary boundaries dissect rural livelihood systems. This vertical segmentation governs all aspects of land development (research, training, extension, land legislation, administration and allocation of funds). Within each bounded discipline (agriculture, forestry, livestock management) interventions have traditionally been geared towards single outputs. This is inimical to the principles of agroforestry systems.

Development planners often quote traditional conservatism as one of the major stumbling blocks to the successful implementation of development projects. While it is certainly true that many traditional societies are weary of change and slow to involve themselves fully, it is a natural reaction to innovation, especially if it involves radical change. People will only incorporate innovations into their life styles that they fully understand and see the real value of. There are always going to be constraints to development. Therefore planners and implementers should be optimistic and work on the advantageous factors to design and implement development projects. One of the strongest advantageous factors in pastoral areas is the traditional knowledge of the people. Unless properly used this knowledge is in danger of being lost.

Development strategies in dry lands can not be copied from high potential areas, the differences are too great. The traditional livestock and resource knowledge must be used as the basis for improvement through learning, awareness and extension. This takes time and effort on the part of the implementing agencies, as well as a change in thinking for many. But if the people living in these areas do not see the need for change and improvement in their lifestyles then real change will not take place.

Development in dryland areas more than anywhere else does not depend on techniques, infrastructures, it is about people and how they manage their lives and their lands. Development agencies have a very important role to play in this catalysis, to make people aware of their responsibilities, and to provide them with the tools to improve and change their own life styles so that the land, with its limited resources will continue to sustain them.

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**Extracts from Kenya's
District Focus Rural Development Strategy
(1987)**

"The responsibility for planning and implementing rural development has been shifted from the headquarters of ministries to the districts. This strategy, known as the 'District Focus for Rural Development' (Republic of Kenya, 1987), is based on the principle of a complementary relationship between the ministries with their sectoral approach to development and the district with their integrated approach to addressing local needs. Responsibility for the operational aspects of district-specific rural development projects has been delegated to the district. Responsibility for general policy and the planning of multi-district and national programmes remains with the ministries.....The objective of this strategy of shifting increased responsibility to the districts is to broaden the base for rural development and encourage local initiative in order to improve problem identification, resource mobilisation and project design and implementation." (page 1)

"Public participation in support for rural development requires an informed citizenry. The District Development Committee must maintain a programme of public information to explain the district focus strategy to the general population..... The public information programming should be based on the experiences gained in various rural development activities around the district and elsewhere in the country". (page 7)

"A major objective of the District Focus strategy is to increase communication between the local community and government officers working in the districts. Divisional, locational and sub-locational development committees identify opportunities and problems in their local areas, the types of projects that are needed in their communities, and ways to maintain and increase the utilisation of the completed development infrastructure..." (page 8).

"An understanding of cultural values and norms is an essential element in facilitating rural development in Kenya. Discussions will be held at all levels on practical issues in relation to cultural values and practices as they affect project planning, implementation and evaluation". (page 45)

Sample District and Divisional Workshop Timetable

Day 0: Course participants arrive in the afternoon.

Day 1: Official opening by district dignitary or official.
Introduction and broad objectives of the course.

Discussion of current government and traditional rules and regulations concerning the use and management of trees in the settled areas in particular. Are they pleased with these rules or do some need to be changed? Are people keeping the rules or breaking them? Why? (Use an example eg how do they get materials for building)? This session will try and discuss what are the present rules, how effective they are and why, and what can be done to make these rules stronger and respected?

Afternoon: Field visit to woodland areas to look at different woodland types and uses. This trip will try and make the participants see the present and potential problems with particular reference to fuelwood supply. Two issues will be taken up in the discussions. First, that of fuel and charcoal. Where do they get their fuel? Is there enough? How can the situation be improved? Why is charcoal now produced and it was not done long ago? What can be done about this? How can we control charcoal production? Second, the broader issues of woodland management will be tackled. Are these trees owned? If so by whom and for what purpose? How do people get access to timber for building fuelwood etc.? How can we improve this situation so that trees are not going to be wastefully cut down?

Day 2: Group discussions on: a) fuelwood and charcoal production; b) timber for building, making of timber goods; c) clearing of woodland for, in particular, agriculture. Here each group will make summaries of their discussions that the whole course can then discuss in plenary.

Afternoon: field visit to area where little natural regeneration of trees (in this case *Dobera glabra*) occurs. The group will be

shown the control (not fenced) and reserved (fenced) areas of the trees and will be expected to look into ways of improving the natural vegetation. Why are there no young trees? What can be done about this? Are there any differences inside the fenced off area as opposed to where it has not been fenced off?

Day 3: Field visit to an area where agriculture is practised (in this case an irrigation scheme and the surrounding area). A brief talk before departure to ensure that the participants observe as they drive along the road and get them to note any changes. Where do they see most trees as they drive along? Count the number of bags of charcoal. The whole group will stop to discuss degradation of vegetation around the irrigation scheme area. How can it be prevented? How can we improve the situation? At the irrigation scheme, stop along the main canal and embankment to look at the natural forest and the irrigated land. What has happened? Which is the better situation for people and livestock? How do the people traditionally cultivate? Can trees be incorporated into irrigated agriculture and if so how? What are the benefits of this? Is there profit in clearing trees away from irrigated land and rainfed shambas?

Visit to rainfed fields, going through the same series of discussion points as for the irrigation scheme. Visit agricultural plots beside the river where a lot of clearing has taken place - why have people cleared right up to the edge of the river?

Summary session, before departure, on the days findings.

Day 4: Field visit to tree planted sites in surrounding area. Who plants? How are they managed and owned? What part does tree planting have in woody management? How can planted trees be used for the benefit of the people?

Concluding discussions to come up with a list of rules and regulations to help in the development of the final version of a woody management policy for Turkana district, and any other recommendations, that will help in implementing this policy under the chiefs authority act.

Day 5: Participants leave in the morning after breakfast

Location and Village Workshop Guidelines

1. General

Planning for these courses should be along the following lines:

- a) Where will the course be held?
- b) Selection of participants: consult the participants of the district courses to help in selection of village elders, women's leaders, teachers etc. Each course should have a maximum of about 30 participants.
- c) When will the courses be held.
- d) Make a list of facilitators (who have attended both the divisional and district courses) together with their duties.

2. Course Content

The content will be taken from the chiefs and leaders and divided up into 3 one-day courses or one two-day course as follows:

1st course:

Present Government laws; traditional laws; field visit to an area of woodland to discuss the laws and importance of trees, their problems.

2nd course:

Discuss the importance of trees under different topics (eg charcoal, building material and so on). How can we conserve trees on a sustainable basis? Problems and solutions about trees. Visit site where trees have been cut. Trees and agriculture.

3rd course:

How can we increase the numbers of trees? Planting of trees,

methods, what to plant and where. Visit possible sites, discussion and try and get people to be responsible on their own (without payment) for tree planting and natural regeneration.

3. Methods To Be Used

- a)** Participatory approach to ensure active involvement.
- b)** Divide the participants into 3 groups for ease of discussion. All the points, observations and recommendations can then be brought together at the plenary session in the afternoon.
- c)** Use the standard set of questions as the basis for discussion.
- d)** Make sure that all the facilitators understand this standard set of questions.
- e)** Facilitators should ensure that they facilitate, but not teach, at these courses unless it relates to technical issues (eg tree planting).
- f)** Someone should take notes of what is being discussed as this will then form the basis for a course report.
- g)** The morning session will centre around a brief introduction, followed by a discussion on the relevant subject matter and then a field visit where extensive discussion should take place.
- h)** The plenary session in the afternoon will be for summing up what has happened during the day and someone should take notes in point form of any recommendations, observations etc.

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