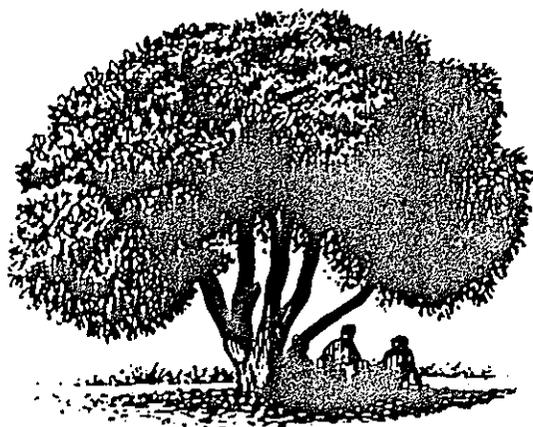




## SOCIAL FORESTRY NETWORK



### TREES AND PASTORALISTS: THE CASE OF THE POKOT AND TURKANA

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### INTRODUCTION

Pastoral people in arid and semi-arid lands have, with time, developed rational sustainable land use systems based on the mobility of their livestock herds, and making optimal use of the land both geographically and ecologically. Historically such systems were self-regulating with periodic famines and disease out-breaks acting as controls. These self-regulating mechanisms are for various reasons, no longer allowed full play with resulting deterioration in land-use patterns, particularly in the settlement zones.

Few people perceive the use of their land-use strategies as a soil and water conservation benefit, yet in preserving their land and vegetation this is exactly what it is. Likewise planners in soil and water conservation, in many cases, do not see the value of such strategies, preferring the use of structures in curing the problem rather than preventing the disease.

This paper attempts, in some small way to highlight some of the traditional values that the Pokot and Turkana have which could be of intrinsic value to soil and water conservation, if used sensibly in the dry areas. It further attempts to identify methods of incorporating such traditional values into soil and water conservation practice for arid and semi-arid lands.

### EXISTING RANGE MANAGEMENT AND LAND USE STRATEGIES

#### The Pokot

Nginyang Division falls into Ecozone IV-V (Marginal and Semi-Arid; Pratt and Gwynne 1977) and is occupied by a pastoral section of the Pokot tribe. Though the Pokot in Baringo District originated from the agricultural and pastoral Pokot of West Pokot, there has been little agriculture practised in East Pokot. However in the last eight years, as a result of development initiatives, quite substantial areas of land have been cultivated (Barrow 1985).

Livestock management, herd formation, and choice of grazing grounds are the responsibility of adult men, with all the family members

taking part (Tanaka 1981). Though stock tend to move seasonally, goats, sheep and camels usually forage in the vicinity of the homestead. While cattle are grazed near the homestead in the wet season, as it starts to get drier they are gradually moved towards the hills where they will graze during the dry season (Barrow 1980, 1985a) with distances varying from 5-50 km or more depending on water and forage availability and stock type (Tanaka 1981). This system makes optimal use of the flush of annual grass and herbs in the lowlands and gives the grass on the hills (with a higher percentage of perennials) a chance to set seed.

As pastoralists the Pokot have tried to exploit their environment to the optimum, getting most out of it in terms of livestock production without destroying the range lands in the process. However, as is common with many pastoralists, grazing and browse are communal while stock management and ownership is individual. This can lead to the maximisation of individual herds, at the expense of the communal graze and browse which is one of the biggest problems of successful range management. (Pratt and Gwynne 1977).

Within the broad grazing pattern, the people, under the auspices of the elders, set aside varying amounts of reserved grazing. This usually takes the form of hills reserved and guarded and may cover many thousands of hectares. The reserved grazing is used at the discretion of the elders during the dry season or in drought years (Barrow 1985a). Schneider (1959) identifies a similar system in West Pokot. This pattern of transhumance and reserved grazing may be locally modified to fit in with water distribution, topography and tsetse fly distribution. It particularly refers to cattle since they have to graze. Camels and goats are more cosmopolitan feeders on bush (which is plentiful).

The rangelands can be divided up into ecologically and socially viable units along the lines discussed on transhumance grazing. Normally within each unit there are a varying number of families who tend to herd their stock together, are often defined by their access to dry season watering points (Barrow 1985a), and centre around

a meeting place or kokwo. Such a grouping of homesteads or neighbourhoods constitutes an autonomous political unit (Schneider 1959) and the elders of this unit will meet under the kokwo (a special shade tree) to discuss and plan the group's activities and grazing patterns (Barrow 1985a). However the composition of the neighbourhood is not stable and people may come and go as they please.

### The Turkana

Turkana District falls into Eco-zone V-VI (semi-arid and arid; Pratt and Gwynne 1977) and is occupied by the Turkana. The Turkana system of rangeland management is much the same as that of the Pokot, except that it is on a larger scale and distances travelled are much greater. Broadly, livestock (particularly cattle) are grazed in the lowlands after the rains to make use of the annual flush of grass. This may only last for a few months and then the stock will gradually move to the west and to the hills to make use of the dry season grazing areas. The hilly areas and the west are much wetter than the rest of the district. Indeed the Loima Range is probably the single most important dry season grazing area for cattle in Turkana. This herding movement reflects the way the Turkana divide their family and livestock into two divisions, namely the abor and eogos divisions. The abor division occupies the hill areas and is comprised of young and mature stock together with the younger people while the eogos is the lowland unit and is composed of old stock and the older people (Barrett pers. com. 1986).

Usually the herding unit follows roughly the same annual movement, but it also retains a relationship with the people who control the area and may want or need to use an alternative route. These relations are based on stock sharing, which is an important factor in strong continuing links to in-laws, relatives and leaders (Barrett 1986), and thus maintaining flexibility in grazing to cope with the different risks of disease, raiding and drought (Gulliver 1955; Broch-Due and Storås 1981).

The Turkana have two forms of traditional reserved grazing areas epaka and amaire. These systems of reserved grazing are similar to those in

Pokot (Barrow 1986). Though it may appear that grazing and forage availability is open to all, the situation is more complex (Hogg 1986). In a good wet season, forage is plentiful, there are no restrictions on movement of stock and questions of ownership of the resource do not arise. However in the dry seasons and dry years such issues become critical. Gulliver writes that 'The only time of the year when movement is at all restricted is towards the end of the dry season, when pastures are becoming critically impoverished' (1955: 35-36). But he also notes that camels and goats can be found anywhere at anytime.

It is this power over ownership of water and fodder that is central to pastoralism in Turkana (and indeed Pokot, though it is not so felt there because the climate is wetter). This is particularly critical in the dry plains areas and the herd owners depend, in the dry season, on the pods from Acacia tortilis stands along the major water courses to provide fodder for their animals (Hogg 1986). Here family ownership of such important resources is more clearly defined, particularly with relation to the riverine vegetation of the main river courses.

Such permanent family ownership or ere refers to that area of permanent settlement where old and young stock may remain all year around (Hogg, 1986; Barrett pers. comm.). It is from the ere that livestock (and in particular cattle) are sent to grazing camps as the dry season progresses. A herd owner's ere is normally where he was brought up, where his father died and was buried and where he has ownership rights to particular resources which include fodder, fruit trees and a dry season well. These resources are owned by the herdowner and his close family relatives and on occasions by close in-laws. Outsiders will not be allowed to use them without prior permission (Barrett pers. comm.; Hogg 1986).

The system of ere appears to be in conflict with the previous idea on ownership of resources in Turkana, for Gulliver (1955) indicates that all pasture is common to all members of the tribe, with the principle reason for movement of stock being the lack of grass or browse, lack of water or both.

Grazing, as well as taking place in defined patterns, is organised communally by a co-operative grazing community or adakar. An adakar represents a fairly temporary (or more permanent if there is a security risk) cluster of homesteads which come together in the wet season. An adakar can vary greatly in size (40 to 100 or more families) and is formed usually among families who know each other and have ties. Adakars facilitate herd security and herding co-operation together with a strengthened social network (Hogg 1986).

Because of the instability of the environment, such grazing communities can not be permanent social groups. They have to have the organisational flexibility to react to climatic, vegetation and disease criteria. Thus in the dry season such adakars will tend to break up as each group follows its own dry season grazing pattern.

Turkana have a strong tradition of sorghum gardens (amana pl. ngamanat) which are planted during the rains and, if harvested, help supplement the pastoral diet. These gardens are usually found in natural inundated areas close to the river or in a natural depression, and constitute a traditional form of water harvesting (Hillman 1980). Those gardens close to the river may be of two types, those at the high flood level where the soils are better but cropping is more risky, and those lower down where the crop could be washed away (Morgan 1974). Such gardens are individually owned, usually farmed by women, and are found close to the wet season livestock grazing areas or ere (Huntingford, 1953). In recent times these sorghum gardens or shambas have increased greatly in number not because the Turkana do not recognise it as a high risk enterprise but because they feel that the Government favours shamba owners (Hogg 1986).

Further the Government-supported irrigation schemes on the Turkwel have impinged on traditional Turkana gardens. Ignorance of traditional land use rights is exemplified by the conflicts and disputes that have arisen between the irrigation scheme and traditional cultivators at Katilu (Broch-Due and Storås 1983). In traditional Turkana sorghum plots, trees are not generally cut down,

only the bush and undergrowth is removed, a form of agro-forestry. Yet now in the area surrounding the irrigation schemes (Katilu in particular) all the rainfed plots are clear felled of trees, a lesson the people learnt from the irrigation scheme. As a result the soil erosion risks are greatly increased.

#### General Considerations

Both the Turkana and Pokot have clearly defined grazing systems. In the wetter areas of Turkana and Pokot where there is a greater abundance of resources ownership rights are less clearly demarcated. In the drier plains areas of Turkana near the river the herd owners have, a permanent homestead together with an area of riverine woodland from which the herd owner obtains dry season forage, building materials, fuel and a permanent (or at least semi-permanent) riverine well.

Thus the idea that the Turkana and Pokot are nomadic in the true sense of random movements governed by rainfall and forage availability is inaccurate. Both groups have well defined grazing patterns, combined with concepts of ownership that are more marked and defined in the drier areas.

Both the Turkana and Pokot keep a variety of stock types in response to the diversity of the forage resource which ranges from large trees to woody bushes and shrubs, perennial and annual grasses and herbs. Here diversification helps reduce the risk of loss should one or other stock type suffer. Further it acts as an optimal means of exploiting the vegetation resource on a sustainable basis. Such mobility and livestock diversity is necessary for making maximal use of the forage resources as well as reflecting the diversity of the plant community (Galvin 1985).

## WOODY SPECIES UTILISATION AND MANAGEMENT

### The Pokot

Pokot knowledge of their flora is almost totally in relation to the plant's value for livestock and people in terms of food, medicine and materials. Tanaka (1981) found that out of 307 plant species 61 (20%) were used for food and 118 (39%) were used for medicine (Tanaka 1981). Their knowledge is particularly well developed with relation to animal fodder where they can recognise seasonally available species that will promote milk and meat production, in different stock species and ages (Barrow 1985). Such knowledge is vital to the successful herding of livestock particularly in the dry season.

The Pokot attach great value to trees and will rarely cut a valuable tree. Trees are used on a sustained conserved basis for a variety of uses including fodder and food, medicines, building materials, fuel, fencing material and household implements, as well as for shade and for central meeting points for the elders. During the dry season some trees will be pollarded for their browse (eg Balanites aegyptiaca, Dobera glabra Barrow 1985), pods will be harvested for livestock feed from other trees (eg Acacia tortilis, Acacia albida). The only woody species that are actually cut back are the less useful bush species (eg Acacia reficiens, Acacia brevispica) which are used for fencing the homestead and livestock kraals (Barrow 1985). The cutting back of such bush woody species often serves to promote better ground cover of perennial grass.

### Turkana

Like the Pokot the Turkana have a very well developed traditional knowledge of their flora and its uses (Morgan 1980), the woody species being especially valued. Indeed the woody vegetation of the District constitutes the most valuable resource that the District has, the Turkwel riverine forest and the Loima mist forest being the most important. Since the area is considerably drier than Pokot, very few trees will be cut back completely and pollarding or branch-lopping is the norm.

Trees are vital to the Turkana way of life. Dry timber is used for fuel; building material is selectively cut from different trees (eg Gordia sinensis, Hyphaena coriacea); household utensils are made from tree produce; small branches will be cut in the long dry season to feed livestock and pods and fruits of certain trees will be harvested and collected as fodder for livestock and food for people. Many medicinal uses of trees have also been identified and some of these have recognised clinical properties (Lindsay 1978).

The importance of the woody vegetation is stressed by Ecosystems Ltd (1985: 3-4): 'In 23% of the District, woody vegetation is virtually confined to riparian strips. These areas coincide with the driest eastern parts of Turkana and dry season grass cover was found to fall consistently along a gradient of increasing importance in the riparian component....Despite the acute shortage of grass, areas of exclusively riparian woody vegetation supported over 30% of all livestock in the District during the dry season, underlining their extreme importance as a dry season forage resource'.

The Turkana have developed the management of their trees a step further especially in the drier parts where the vegetation resource is more critical. Within the ere the herdowner will have an ekwar which literally means the trees on the side of the river. Given the vital importance that the riverine woodland plays in the District, the ekwar is an integral and vital part of the ere and livestock management. In the dry season it is often access to fruit and fodder trees that restricts movement. So in the dry season the livestock and herd owner will be found in his ekwar unless all the stock have to go to the wetter hill areas in the west. Certain important trees (eg Acacia tortilis, Hyphaena coriacea, Cordia sinensis, Zizyphus mauritiana, Dobera glabra, Acacia albida) are particularly protected by custom (Barrow 1986; Soper 1984).

The system of ekwar is stronger in the drier central part of the district and to the south (Lokori, Katilu and parts of Central Divisions). To the west and north this system is not so strong because it is wetter and there are few rivers with well developed

riverine woodlands. However preliminary analysis of a survey being carried out by the author on ekwar indicates that people are based in their ekwar (and consequently their ere) for much longer periods of time than planners associate with pastoral peoples. Usually at least one generation has stayed in their own ekwar and the father will have, in many cases, been buried there. This indicates time spans in excess of 40 years.

### Discussion

Traditional knowledge is knowledge developed from the pursuit of daily life. Thus it is likely to be comprehensive on some topics and weak on others. Table I (adapted from Barrow 1985) allows for different change-directed interventions to be considered and compared in terms of susceptibility to change and their traditional knowledge. This in turn can help to explain which efforts are likely to be more successful and under what particular circumstances.

There is a high susceptibility to change where there is an extensive degree of traditional knowledge. Here there is likely to be a fast adoption rate since in this category the tangible benefits can be quickly seen and felt. But where there is a low susceptibility to change and a high traditional knowledge there is a slow adoption rate. Thus, whereas there is a rich knowledge about trees and their value, tree planting is not perceived as an important activity.

It is therefore vital to try and make the connection between what is known (ie value of trees) and what is not known (ie tree planting) and the reasons for this (eg lack of regeneration among naturally growing trees and degradation around the settlement areas). Therefore an aspect of any arid lands forest project should include finding out what the traditional knowledge base is concerning trees, what the people perceive as the problems and what the solutions might be. This can then form a rational base for social forestry interventions in the arid lands and help to ensure the long term success of any such

Development Activities Analysed in Terms of Traditional  
Knowledge and Susceptibility to Change Among the East Pokot

Table 1

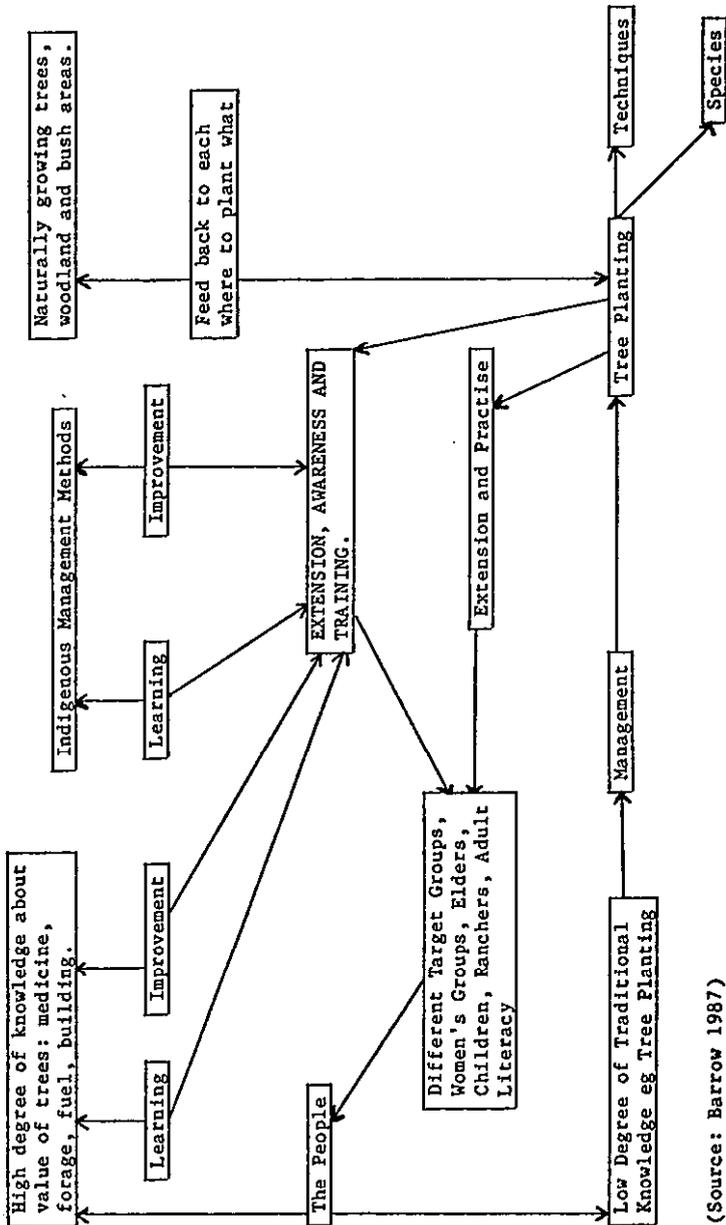
Susceptibility to Change			
		: High	: Low
<u>Traditional Knowledge</u>	: Extensive	: Veterinary medicine	: Group ranches
	:	: Reserved grazing	: Tree planting
	:	: Goat improvement	:
	:	: Water development	:
	:	: Tree values	:
	:	:	:
	: Limited	: Grassland re-seeding	: Donkey ploughing
	:	: Improved seed vars.	: Clean water in house
	:	: Income generating projects	: Dietary improvement
	:	: Health (curative)	: Seed storage
:	:	: Improved crop husbandry	
:	:	: Hygiene, Education	
:	:	:	
fast adoption <	----->		slow adoption
increase in development differential			

venture. However this does demand a sensitive understanding of the area and its people, a long term involvement and the development of an extension approach based on awareness of values and solution finding.

This important role of extension in relation to woodland management in arid and semi-arid lands is shown in Table 2 (after Barrow 1987) where the role of extension is used as the link between differing degrees of traditional knowledge (uses of trees, woodland management) and tree planting which in many cases is an alien concept to the people.

ROLE OF EXTENSION IN WOODLAND MANAGEMENT IN ARID AND SEMI-ARID LANDS

Table 2



(Source: Barrow 1987)

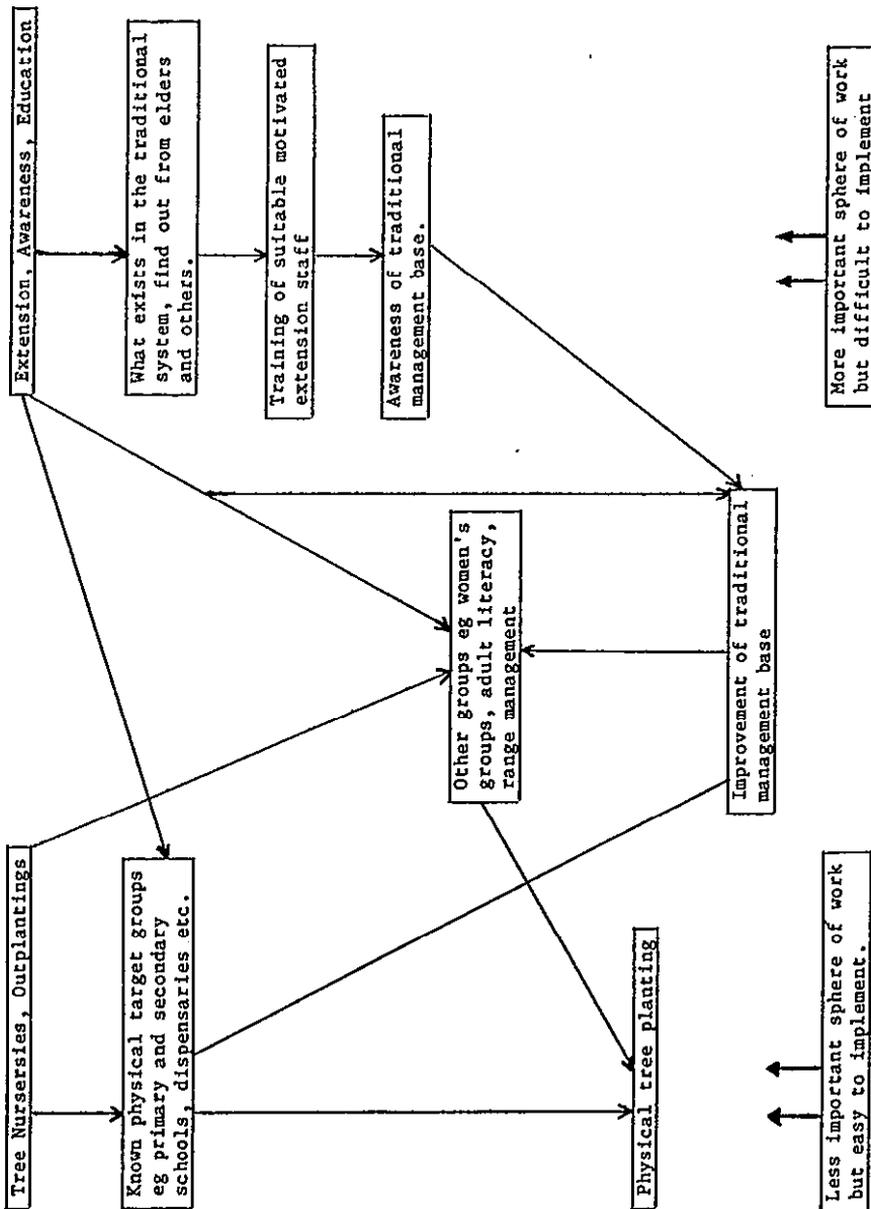
Technical input from the project can then be used to try and help resolve some of the problems that the people will have identified. It is important here that the technical issues come after the extension, knowledge-discovery and problem-solving phases. Such technical issues must be understandable and acceptable to the people (eg. water harvesting strategies to improve crop production, tree planting and range improvement; resting of land to allow regeneration). Those technical inputs should be related to what people know and understand. Table 3 (after Barrow 1987) shows how tree planting activities, management strategies and extension can be related.

One of the important experiences gained in both Pokot and Turkana is that people do not readily perceive the relationship between tree planting and the utilisation of those trees. While mature trees are considered very important in that they yield a variety of produce, the value of young trees is questionable since they yield very little. For one of the most important arid and semi-arid land trees species, Acacia tortilis the Turkana have different names for the mature tree (ewoi) and the young tree (etir). The planting of young trees has to be related to the benefits and produce they will bring at a later date.

How does this relate to social forestry projects that have to be seen to be carrying out forestry work in the dry areas? Firstly there is an increasing body of information relating to the traditional values of trees in the dry lands which can be summarised as follows:

Co-ordination of Tree Planting Activities with Management

Table 3



(Source: Barrow 1987)

Tree values

Fuel  
 Building timber  
 Food for stock  
 Food for people (fresh and cooked)  
 Medicinal values (stock and people)  
 Making utensils  
 Shade, fencing  
Ceremonial values

Management values

Harvesting methods  
 Individual tree management  
Rangeland management

The traditional values should then be related to problem identification (eg no regeneration, no young trees, valuable trees now gone) and solution finding (tree planting, protection, encouraging regeneration of trees). Much of this is basically common sense, yet very rarely utilised in the technology of ASAL tree planting. Finding out and utilising these traditional values and identifying problems need not take long before actual solutions can start to be implemented. In fact the two approaches go hand in hand.

It is in this context that physical tree planting should be carried out. There are a number of issues to be considered including:

- a) Tree species to plant should be based on what the people want to plant, after all it is they who will be using and managing the trees. This selection will also be governed by what species will grow in the given conditions, seed availability and whether the trees can actually be raised in the nurseries. New species can be introduced but this should be done initially on a demonstration basis.
- b) Encourage the natural regeneration of trees through protection (which is difficult in many of the settlement areas but can be encouraged through a gradual process of extension) and by

physically encouraging natural re-generation through some form of simple water harvesting around the young trees as if they were actually planted.

#### ASPECTS OF RANGE AND FOREST MANAGEMENT RELEVANT TO SOIL CONSERVATION

From the preceding discussion there are a number of aspects inherent in the traditional management systems that are and should be of direct value to soil and water conservation yet do not appear to be used as such. These beneficial aspects relate firstly to the overall management methods and then the more localised usage of the resource which lend themselves to sensible and sustainable land use combined with soil and water conservation practise.

Both the Pokot and Turkana practise a form of transhumant grazing, particularly for their cattle (camels and goats do not have to move so far for browse). This is based on wet season grazing in the lowland areas to make use of the annual flush of vegetation after the rains and dry season grazing in the hilly or wetter areas. Within this, large tracts of land may be set aside for reserved grazing to be used in times of drought.

Flexibility and mobility in movement is retained yet the grazing patterns followed are approximately similar. Thus different groups of Turkana and Pokot follow the same grazing cycle and this can form the basis for sociologically and ecologically viable grazing units. In Turkana this can centre around grazing associations based on the akadar, while in Pokot such grazing patterns could be used as the basis for the formulation of group ranches.

Both the Turkana and Pokot show a high degree of knowledge concerning their flora, with an emphasis on values in fodder and food, medicines to sustain their stock and themselves. Likewise they are not destructive of their resource, but they manage and use the vegetation, and in particular the woody species, on a sustained basis. Valuable

trees are rarely cut down; rather, selective pollarding is practised. Dry and dead timber are used for fuel. Only the less useful bush species are cut for fencing manyattas.

The importance of trees is strongly stressed culturally. People are named after trees, shady trees act as meeting places, trees provide a lot of traditional medicine. Trees play a vital and integral role in the many initiation ceremonies such as birth, marriage and various feasts. All this helps preserve an interest in sustaining tree resources, for trees which have important cultural associations cannot be cut down without serious consequences.

These issues are of integral importance in both sustained rangeland management and by inference soil and water conservation. The broader traditional range management policies help conserve the rangelands, while the attitudes to woody species and trees in particular ensure that very few or no trees are actually cut down. This acts as a conservation control along the riverine and water course areas where the majority of the good trees are found. This is further refined along the water course areas in Turkana where the people have actual ownership rights to discrete areas of riverine woodland, and in having ownership rights are responsible for that area's management and utilisation.

#### INTERFERENCE IN TRADITIONAL LAND USE SYSTEMS

Many of these well developed traditional land management systems are in danger of breaking down because traditional methods have not taken into account the speed of modern interventions. Likewise planners and implementers of development do not take into account the real needs and aspirations of such people. In this respect the negative factors are often related to interference in the traditional management system from outside without trying to adapt the system to the new changes.

1. The perception is that in many pastoral areas all land and resources are common property. The tragedy of the commons argument

(extensively put forward in pastoral and rangeland literature) holds that there is a basic conflict between private ownership of livestock and the communal ownership of pasture. The individual pastoralist has little incentive to conserve communal grazing by reducing the size of his herd because he has no guarantee that others will do the same.

While the latter part of the argument may be true, the Pokot and Turkana examples indicate that the resources are by no means communally owned and indeed conservation is actively practised (eg in the ekwar).

2. The increased use of veterinary drugs has to a greater degree removed livestock disease as a constraint to production. If this is not balanced with an increased productivity of the rangeland or increased offtake, then there is likely to be an increased grazing pressure on the land which may lead to an increase in soil erosion.
3. The population of many pastoral areas is on the increase (though not as fast as the national average). This is related to the provision of better health conditions and food security (from famine). While it is imperative that health conditions should be improved this fact has not yet been incorporated into land management strategies. However this interference with the natural population controls (drought, famine and disease) has affected the overall human ecology, since in such an environment the ecology and vegetation is already used to near its maximum subsistence potential (Soper 1984).

4. Improvements in water supplies that do not take into account grazing patterns and in particular the dry season grazing areas which may be opened up to grazing with no in-built controls to conserve the grazing, are dangerous. In some areas of West Africa provision of an increased number of livestock-watering-facilities actually led to an increased risk since forage availability became the primary constraint, not water, and in drought years this resulted in no forage and so a huge die-back.
5. The concentration of people in settlements, famine and feeding camps has taken people out of the pastoral sector and concentrated them in small areas. This has resulted in serious localised depletion of the vegetation and an increase in soil erosion. This overuse of the vegetation is very obvious even if the people only have very few stock and the restricted range of movement further strains the vegetation resource and is exacerbated by the emphasis on small stock. (Broch-Due and Storås 1981).

This growth of the settlements in Turkana District, and Katilu in particular results in an intensification of land use. In Katilu the establishment of an irrigation scheme resulted in the collapse of traditional controls. This policy of converting a flexible land use system into a private one is promoting environmental degradation (Broch-Due and Storås 1983).

Along the upper reaches of the Turkwel river between Lodwar and the Turkwel gorge, woodland depletion is only serious and increasing in the settlement areas associated with Katilu, Jiluk

and Nakwamoru (Ecosystems 1983). Likewise the area around Lokichar since 1975 has shown a sharp reduction in vegetation cover due to an influx of people associated with road construction resulting in an increased forage pressure and woody material off-take (McCabe et. al. 1983).

6. The authority of elders, who are traditionally responsible for livestock management, is gradually being eroded by the education of the youth and the authority of Government officials.
7. The present education system, while preparing the youth for life in modern Kenya to a certain degree, gives them very little opportunity to learn and improve their ways of land management in such dry areas. They are often no longer capable of fitting back into the pastoral system.
8. Development strategies are primarily orientated towards the more easily definable and countable projects, eg 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 (eg irrigated agriculture, fishing) rather than (or at the same time) strengthening the pastoral set up to produce more for the local and national economy in terms of livestock sold. Yet nowhere in this shopping list is the prime target seriously tackled, that of range and woodland management and utilisation. Both of these form the basis for livestock production and offtake in such dry areas as Turkana and Baringo.

9. Rangeland areas are gradually being turned into agricultural land for crop production, often due to population pressure. In a dry area crop production is more risky than livestock enterprises. This is aggravated by the fact that methods of agricultural production are not suited to the aridity of the climate, (this can be seen in West Pokot in the Marich Pass where there is now very serious soil erosion).

Firstly we must realise, and at present we do not, the value of existing land management strategies as a basis for long term development. Unless the rangelands are managed and conserved the existing development initiatives in such dry areas will only exacerbate the problem and cause an increased level of soil erosion, hardship and so famine relief dependency. The traditional values, roles that trees play and people's ownership rights to trees must not only be realised but respected (Barrow 1985). Hitherto this has not been the case (eg Katilu irrigation scheme, by traditional law under ekwar, probably belongs to over 50 people).

In the high potential areas of Kenya such traditional rights are taken into account during demarcation. Why are they essentially ignored in the drier areas? Many of the existing group ranches in Maasai and other areas are not based on either ecologically or sociologically viable grazing units (see the extensive literature on these ranches) and as a result such ranches are in a very fragile state now.

In realising the importance and need for sustainable use of the grazing lands both as an ecological imperative and for production, the traditional knowledge base should be used as a building block to development, not a hindrance as such traditional knowledge is often labeled. After all both the Turkana and Pokot have survived and thrived in these areas for hundreds of years.

Traditional land use systems are not perfect given current trends in population growth, and health provisions. The traditional herd constraints have been removed. But we should use the traditional

base as a means to realistically incorporate such factors as increases in population, improved health and feeding facilities.

As a starting point, flexibility and mobility of livestock grazing and herding must be recognised as the priority. Without such flexibility and mobility the risks increase. This is very visible in the settlement areas where settlement is the direct cause of over-utilisation of the woody resource, while in the pastoral areas both in Pokot and Turkana there is no such over-utilisation. This situation has been aggravated by the setting up of large feeding camps in times of famine which is administratively easier but ecologically disastrous.

Traditional grazing associations (adakar in Turkana and based on the relevant kokwo in Pokot) could be the basis for rational rangeland development. Their security of tenure should be strengthened to ensure that their land is not taken from them, as has happened in Narok where much of the dry season grazing has been taken from the Maasai. Such tenure should be based on existing grazing patterns which incorporate both wet and dry season grazing areas combined with substantial areas of reserved grazing. There should be some form of legal recognition of individual tenure particularly as it is related to the ownership of riverine woodland in Turkana (ekwar). This will help ensure its conservation and so is important in riverine protection.

Using this as a basis, improvements can be made. For instance browse availability could be improved by discrete plantings, particularly in the existing settled areas, to ensure both a browse and fuel supply for the people associated with the settlements. Watering points, health facilities, education facilities can then be orientated around the grazing system.

Extension and education plays a vital role in this. On the one hand such work will help planners and implementers understand the existing system and so form a vital link to see in what ways such systems can be adapted for the better. Currently the role of extension is strongly supported in policy documents, yet physical and logistic

support is often very weak. The formal education sector does not take into the account the needs of the dry areas (yet 75% of the Kenya Republic is arid and semi-arid). As a result the educated youth in dry areas are often no longer equipped to live and work in the pastoral sector. This must change with a more realistic incorporation of dry area topics into the syllabus.

The introduction of the National District Focus policy will help achieve this as it makes planning a district priority and no longer the responsibility of the Centre. Therefore district needs and aspirations are more likely to be taken into account.

#### CONCLUSION

Why do we have to re-invent the wheel? Why can planners and implementers of development not use the traditional knowledge base as a building block for improving the lives of the people in pastoral areas? Examples all over Africa show the failure of development projects to grasp the real problems of the arid and semi-arid lands in a realistic fashion. I am sure that much of the desertification, increase in soil erosion in the arid and semi-arid lands of Africa are man made problems as a result of various interventions (some often with good development intentions) as a direct or indirect consequence of some form of development.

Development projects tend to compartmentalise life in arid and semi-arid areas and so the process. This cannot be done, the threads are too interlinked. Yet if we realise this and use the traditional management system as a base (the Pokot and Turkana adequately exemplify this), then pastoral areas will be able significantly to increase their productivity and contribution to both the local and national economy and budget. At present the opposite is probably the case. In Kenya, with District Focus, this emphasis can now be made. In so managing the vegetation on a sustained basis, the quality of the land will be conserved and the ever-present threat of desertification be retarded.

REFERENCES

- Barrett, T. 1986. Sacrifice and Prophecy in Turkana Cosmology. PhD Thesis (forthcoming). Department of Anthropology, University of Chicago, USA.
- Barrow, E. G. C. 1980. East Pokot Agricultural Project, Range Management Project. Preliminary Investigations. Mimeo.
- Barrow, E. G. C. 1985a. An Analysis of Human and Environmental Factors in the Agricultural Development of East Pokot (Nginyag Division, Baringo District, Kenya). A Case Study. Masters Thesis, Antioch University, USA.
- Barrow, E. G. C. 1985b. Use of local knowledge about forestry in food production with particular reference to dry areas, in Gorta. (ed.) Forestry and Food Security, proceedings of a seminar held on World Food Day 1986. Dublin, Ireland.
- Barrow, E. G. C. 1986. Woody Management Course No.3 for Chiefs, Leaders and Extension Agents. Report of a course held at the Nakica Centre Lodwar, Forest Department, Turkana. Mimeo.
- Barrow, E. G. C. 1987. Results and findings from a survey on ekwar, carried out from November 1986 to July 1987. Report prepared for Forestry Department, Turkana District, Kenya.
- Broch-Due, V., Storås, F. 1981. The Relationship Between Nomadic Adaptation and Alternative Economic Forms With Specific Reference to the Organisation of Work and Productive Relations. Turkana Project Progress Report no.5. Department of Social Anthropology, University of Bergen, Norway.
- Broch-Due, V. and Storås, F. 1983. The Fields of the Foe - Amana Eموit - Factors Constraining Agricultural Output and Farmers Capacity for Participation. Report of NORAD consultancy team, Department of Social Anthropology, University of Bergen, Norway.
- Ecosystems Ltd, 1983. Survey of Rainfed Agriculture, Settlement and Woody Resources on the Upper Turkwel River. Report for NORAD and Government of Kenya Ministry of Agriculture and Livestock Development, Nairobi, Kenya.
- Ecosystems Ltd, 1985. Republic of Kenya Ministry of Energy and Regional Development. Turkana Rehabilitation Project (Development Support Unit). Turkana District Resources Survey 1982-84. Main Report. Nairobi, Kenya.
- Galvin, K. 1985. Food Procurement, Diet and Nutrition of Ngisonyoka Turkana-Pastoralists in an Ecological and Social Context. PhD Thesis, State University of New York, Binghamton, New York, USA.

- Gulliver, P. H. 1955. The Family Herds. Routledge and Kegan Paul, London.
- Hillman, F. 1980. Water harvesting in Turkana District Kenya, Pastoral Network Paper 10d, ODI London.
- Hogg, R. S. 1986. Building Pastoral Institutions. A Strategy for Turkana District. Report to Oxfam, Nairobi, Kenya.
- Huntingford, G. W. B. 1953. The Turkana location and population. In Fade D. (ed) Ethnographic survey of Africa, vol.VII. East Central Africa. International Africa Institute. London.
- Lindsay, R. S. and Hepper, F. 1978. Medicinal Plants of the Marakwet. Kew, London.
- McCabe, J. T., Hart, T. C. and Ellis, J. E. 1983. Road Impact Evaluation in Northern Kenya - A Case Study in South Turkana. Final Report for NORAD.
- Morgan, W. T. W. 1974. South Turkana Expedition. Scientific papers X. Sorghum gardens in South Turkana: cultivation among a nomadic pastoral people. Geographic Journal, 140(1).
- Morgan, W. T. W. 1980. Vernacular Names and the Utilization of Plant Species Among the Turkana of Northern Kenya. Special Report. Department of Geography, University of Durham, England.
- Pratt, D. T. and Gwynne, M. D. 1977. Rangeland Management and Ecology in East Africa. Hodder and Stoughton, London.
- Schneider, H. K. 1958: Pokot resistance to change. In Bascom, W. R. and Herskovits, M. L. Continuity and Change in African Culture. University of Chicago Press. USA.
- Soper, R. C. (ed) 1984. Republic of Kenya Socio-Cultural Profile of Turkana District. Institute of African Studies, University of Nairobi and Ministry of Finance and Planning. Nairobi, Kenya.
- Tanaka, J. 1981. On residential patterns and livestock management among the pastoral Pokot. In Kipkorir, B. E., Soper, R. C. and Ssenyonga, J. W. (eds) Kerio Valley, Past, Present and Future. Proceedings of a seminar held in Nairobi at the Institute of African Studies, University of Nairobi, Kenya.



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