

**Report on the Participatory Rural Appraisal completed at Kamtyong sub
location: Elgon location Kapsokwony Division**

Mt. Elgon Integrated Conservation and Development Project

The Project Management Unit, Kitale, Kenya

2000

Keywords: natural resource management, conservation, development, livelihood, land use, Participatory Rural Appraisal, Mt. Elgon, Kenya.

Acknowledgement

The Project Management Unit of the Mt. Elgon Integrated Conservation and Development Project would like to express its gratitude to Mr. Benard Owuori whose conscientious and diligent efforts made the compilation and completion of this report possible. We would also like to thank the officers from the various partner agencies for their participation in the PRA fieldwork.

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0. EXECUTIVE SUMMARY

Kamtyong is one of the smallest sub-locations in Mt. Elgon District. It was carved out of the Kibuk sub-location. Its inhabitants are mainly Sabaot, Teso, Bukusu and, to a smaller extent, Luo. The Sabaot are indigenous to the area whereas the rest of the communities are immigrants. The only time of unrest was during the infamous tribal clashes of 1991-92. All the communities now live in harmony after settling back on their farms in 1993.

The sub-location has been exposed to various development interventions and natural environmental phenomena from as far back as the community can remember. Between 1910 and 1911, Murunga was installed as the chief by the colonial government. The Mt. Elgon Forest boundary was established between 1922 and 1924. Young men of this area were taken to World War II after which some worked in the European farms in Trans Nzoia District. Some of them returned at the time of land adjudication in 1965 after independence. Throughout their history, there have been natural catastrophes like the locust invasion of 1930-31, famine in 1932, severe drought of 1945, floods of 1961 coupled with army worm attack, the famine of 1968 -72 and 1980-82, and most recently, the El Nino rains of 1997.

Source of Livelihood

The people of this area practice mixed farming. They keep cattle, sheep, goats, and chicken, and grow various crops for both subsistence and income generation. In fact, farming is the major source of income as both livestock and crop produce are sold to pay for domestic expenditures such as food, school

fees, medical expenses, clothing, building and so on. The proximity of the Mt. Elgon forest, which receives plentiful rains well distributed throughout the year, makes these areas ideal for farming. With two rainy peaks occurring in April and August, it is possible to plant crops twice a year. The inherent soil fertility, due to the volcanic origin of the Mt. Elgon area, further adds to the suitability of farming in this area.

Over exploitation of the Mt. Elgon forest resources by both the local community and commercial saw millers has contributed to the decline in both rainfall and soil fertility. The population has risen and farms have been sub-divided. The people continue to cultivate the same parcels of land for provision of food and cash, year-in year-out, without taking necessary conservation measures. To aggravate the situation, there is over dependence in the area on farming as a source of income. Other major income generating activities are agriculture-based, mainly buying and selling of farm produce and livestock trading. Yields continue to decline and marketing has become a major problem.

Non-Agricultural Benefits

Apart from agricultural suitability, the local people value the other benefits associated with the Mt. Elgon forest, including its cultural significance. There are some traditional practices that must be conducted using certain tree and animal products from the forest. During specific times of the year, the local people pray to their gods, believed to inhabit the mountain. The community living next to Mt. Elgon drinks fresh, clean water from rivers that flow from watershed points and springs that dot the mountain slopes. People appreciate that the air around the mountain is light, fresh, and free from any form of pollution.

From the slopes of the mountain, some of the finest quality honey is harvested from both traditional hives and feral colonies established within the forest. Through payment of a monthly fee to the Forest Dept, animals are grazed in the forest, which is a good source of pasture throughout the year.

The Mt. Elgon forest acts as an infiltration zone for water flowing down slope. Leaves that drop and decompose increase organic matter of the soil, resulting in reduced flow, and less erosive impact on nearby cultivated lands. Inhabitants of the sub-location also obtain other products from the forest such as surplus medicinal plants, indigenous vegetables, wild edible fruits, and bamboo for making artifacts. The Mt. Elgon Forest Reserve is the major source of livelihood for the people living in this sub-location especially those near the forest.

State of Conservation and Trends

The local people appreciate the significance of Mt. Elgon forest in their day-to-day lives and actively participate in its conservation. During the opening remarks of the PRA exercise, it was said that, in this sub-location, there is no encroachment into the forest by residents. There have also been no arrests of people from Kamtyong by KWS or Forest Department personnel. However, the local people say that the commercial saw millers, who are the only people that get direct benefits from the forest resources, are responsible for significant destruction in the forest. According to the population, the forest tree cover is far less than what it should be. From information gathered during resource trend exercises, the future appears grim, as the community perceives continued depletion of Mt. Elgon's natural resources in the years to come. Decision making on the management and use of the mountain resource rests with KWS, Forest Department, County Council, the local Administration and commercial saw millers. The local people, who have a very big stake in the forest, have little or no influence on decision-making. The people would like to have much more involvement than they now have in the long-term management of the Mt Elgon natural resource as well as gain more direct benefits from the mountain resources.

There are conflicts that exist between the communities and the forest reserve. One of the major problems the people identified was crop damage caused by wildlife.

Alternative Income Generating Activities

As mentioned earlier, the major source of income generation in this area is from agriculture and livestock production. The community considers other sources of income negligible and was not even mentioned as income sources. They are, however, involved in other income generating activities as poverty or lack of income is mentioned as a major problem in the community. There is a lack of capital to start alternative income generating activities. As a means of alleviating this problem, one possible intervention is the initiation of ecotourism ventures especially by the youth of this area. These ventures, coupled with other interventions like crop diversification, improved marketing, more community education, and provision of credit, will help generate additional income for the community. The assumption is that, in turn, dependence and pressure on the mountain resources will be reduced.

A number of government, NGOs, and local institutions have been involved in trying to raise the standards of living of the residents of the area through the provision of various development services. According to the people, they foresee further involvement of new institutions in their area, some of which could assist them to initiate alternative income generating activities.

Gender Concerns

Gender inequality is evident in the area. Generally, throughout the year, women in Kamtyong sub-location are over burdened by work in the home and on the farm as compared to men. On the other hand, men have more time for leisure and relaxation during a major part of the year. When the social groups ranked the area's problems, results varied, though all groups ranked inadequate water as the biggest problem. Men and youth see lack of community education as the second problem whereas women see ill health as the second worst problem which men see as third and youth as eighth.

Report on the Participatory Rural Appraisal Completed at Kamtyong Sub-location, Elgon Location, Kapsokwony Division, Mt. Elgon District

1. INTRODUCTION

A Participatory Rural Appraisal (PRA) was carried out in Kamtyong sub-location, Elgon location in Kapsokwony division, Mt. Elgon District between 13th July 1999 and 31st August 1999.

1.1 Objectives

The objectives of carrying out this PRA were to:

- identify land and resource use practices by different social groups
- determine stakeholders' level of use of forest resources and their inter-relations according to different social groups
- identify principal livelihood strategies, how they have changed over time and constraints.
- identify socio-economic characteristics of the population
- sensitise and create appreciation of the community's role and potential contribution to conservation as key stakeholders.
- guide the community in developing an action plan addressing main constraints and priorities in conservation and development.
- assess the level of degradation of the natural resource in settlement areas adjacent to the park and forest reserve

1.2 Methodology

The appraisal was divided into 2 distinct phases, the first phase consisting of six days of data generation, which took place from 13th to 23rd July 1999. The period spanned two weeks but the PRA team only went to the village on Tuesdays, Wednesdays and Fridays. Most members of the community go to markets in Kapsokwony and Kimilili on Mondays and Thursdays respectively.

The second phase of the PRA included the preparation of the Community Action Plan (CAP) at which time the community, together with the PRA team, compiled a development plan for the conservation and development of the sub-location. This activity continued for one month. The PRA team met the community once per week from Monday, August 2nd 1999 to 31st August 1999.

Technicians from various government departments, ministries and NGOs participated in four days of theoretical PRA training in July. The appraisal in Kamtyong represented the practical component, where the PRA tools discussed in class were applied to generate information and compile the community action plan with adherence to PRA principles. (See Appendix 1 for a complete list of participants of the multidisciplinary team.)

Throughout the period of data generation, all members of the community from the sub-location were invited to attend viz. the first six days. During this time, the daily attendance averaged between forty (40) and sixty (60) people with representation from all the ten (10) villages of the sub-location. However, there were generally more men than women and youth throughout the appraisal period. The ratio of men to women to youth was about 3:2:1 on a daily basis (see Appendix 2 for community attendants). The PRA team was in the community from around 10 a.m. to about 5 p.m. daily. All discussions, interviews and activities took place under trees at the Kibuk dip, except for the day of the transect walk.

For the purpose of data collection, the community was divided into two (2) mixed groups. One group focused on socio-economic information and the other on forest and resources. These groups were maintained throughout the process until the time of problem analysis, when three groups were formed i.e. youth, men and women.

After data generation was concluded, the community elected a thirty (30) member CAP implementation committee whose members were drawn from all ten villages in the Kamtyong sub-location. There was equal representation from all the villages with each designating a man, woman and youth. These thirty representatives participated in the compilation of the CAP. Sub-committees were elected from within the larger committee to follow up specific interventions designed to solve identified development problems.

The result of this appraisal was the compilation of the CAP by the Kamtyong community, which represents a pilot community for the MEICDP.

1.3 Time Schedule

Below is the six days PRA programme at which time the team and the community generated information.

Day 1 - Launching at Kibuk dip

- a. Speeches by community representatives who mainly talked about community's problems.
- b. Introduction of PRA approach by facilitators in the PRA team.
- c. Discussion with community members of MEICDP objectives with a question and answer session.
- d. Data generation
 - i. Resource map
 - ii. Trend lines
 - iii. Timeline

Day 2 - Data generation

- i. Trend lines
- ii. Resource use, availability, value and conflict
- iii. Agricultural constraints
- iv. Cost benefit analysis of agricultural enterprises
- v. Stakeholder analysis

Day 3 - Data generation

- i. Transect walk
- ii. Household interviews
- iii. Farm sketches

Day 4 - Data generation

- i. Seasonal calendar
- ii. Division of labour
- iii. Income and expenditure patterns
- iv. Land tenure
- v. Indigenous tree species use, value ranking
- vi. Decision making

Day 5 - Data generation

- i. Ranking
- ii. Principal economic activities
- iii. Potential ecotourism sites and activities
- iv. Local institutions and their organisation
- v. Activity profiles
- vi. Exotic and indigenous tree species identification use and ranking
- vii. Livelihood mapping

Day 6 - Data generation and problem identification and analysis

- i. Institutional ranking
- ii. Customs, beliefs and intriguing practices of the community
- iii. Problem identification, analysis, and ranking

Election of PRA committee

2. BACKGROUND INFORMATION

2.1 Secondary Data

Kamtyong sub-location in Elgon location, Kapsokwony division of Mt. Elgon district covers an area of about 7 km². It borders Kimilili sub-location in Kapsokwony division to the West, Kibuk sub-location in the same division to the east and the Nyayo Tea zone to the north (see Figures 1 and 2). The Tea Zone acts as a buffer between the sub-location and the forest reserve.

2.1.1 Climate

The area is generally cold and wet for the major part of the year with a short period of warm and dry weather. It experiences a bimodal rainfall pattern with peaks occurring in April - May and August- September, with an annual mean of 1,400-1,800mm. The dry season is December to February.

2.1.2 Topography and Altitude

The area is part of the southern slopes of the greater Mt. Elgon, with hills and cliffs ascending towards the north and undulating landscape across the mountain slope. The area has a wide range of altitudes as the lower parts of the sub-location average 2,200 m and the upper zone towards the north, 2,800 m.

2.1.3 Soils

The soils are red, well-drained, deep, fertile, clay loam of volcanic origin with a rocky base. Few areas also have shallow soils and rock protrusions.

2.1.4 Agro-Ecological Zone (A.E.Z) Tea and Dairy

The lower highland one (LH2) A.E.Z is predominant in the area next to the forest, upper midland two (UMZ) Coffee Zone and upper midland four (UM2) sunflower-maize zone.

2.1.5 Farming Systems

The people of the area mainly practice mixed farming. They keep cattle, sheep, goats, and chicken and grow various crops for both subsistence and

income generation. Agroforestry is practised to a limited extent. The food crops grown are maize, beans, bananas, vegetables (Brassicas and indigenous vegetables), tomatoes and onions. Onions, tomatoes, coffee, maize and beans are the major sources of cash. The farmers also sell surplus bananas from the lower zone. The area has two (2) cropping seasons, which coincide with the two rainfall peaks. Farmers inter-crop and about 10% practice crop rotation.

2.1.6 Land Use

A land use/resource map was drawn by members of the community (see Figure 3). The major part of the inhabited land is under agriculture. There are 3 murram roads in the sub-location namely Tendet-Kamtyong, Kapsokwony - Kopsiro and one serving the Nyayo Tea Zone. There are also several farm roads that are impassable during wet season and many paths crossing the sub-location. The area has only one primary school i.e. Tendet Primary School. There is no secondary school or institution in the area. Kamtyong market is the major trading center that serves this region plus other adjoining sub-locations. Kibuk River flows from north to south on the boundary with Kibuk sub-location. There are also small streams.

2.1.7 Water Supply

Water used by the community comes from small streams, shallow wells and unprotected springs. However, three quarters of the inhabitants have no access to clean water.

2.1.8 Main Source of Income

Cash is mainly earned from sale of livestock and crops. Some people work as labourers to earn money while others do small trade. People living in rocky areas have opened up quarries as an additional income source.

2.1.9 Labour

Labour is a major constraint and so most of the requirements come from the neighbouring Bungoma District. Resident families do provide labour, which is not sufficient, especially during periods of high demand. There is, however, plenty of labour available between May and July when there is food scarcity.

2.1.10 Land Tenure

Most of the farmers do not possess title deeds for their farms. The market center is under County Council ownership

2.1.11 Demographic information

The sub-location has a total estimated population of 1,652 people with 236 households. There is rapid population increase. The area is inhabited by three main ethnic groups, Sabaot, Bukusu, and Teso in descending order. There are also some Luo in the community.

Figure 1. Administrative Boundaries - Mt. Elgon District

Figure 2. Survey Map of Kamtyong Sub-location and Surrounding Area

Figure 3. Land Use/Resource Map - Kamtyong Sub-location

2.2 Institutions and Their Relationship to the Community

There are both local and outside institutions that are active in development of the area. Local institutions, most of which started in the recent past (1998), include self-help groups, women's groups and youth groups. The majority are women's' groups, whose main objectives are mainly to improve living standards of the women by raising their economic status through improved leadership and unity among members. They are involved in a wide range of activities, including "merry-go-round" (local savings scheme), tree planting, agricultural livestock production ventures, fundraising for development programmes and the needy in society, and organizing educational programmes on health and income generating activities (See Appendix 3 for list of local institutions).

A number of outside development agencies that include government line ministries, parastatals and NGO's are present in the area. There has been an increase in the number of these institutions from the mid seventies to date, and the community is positive that more will come to work with them in the future.

The community and the PRA team discussed the various organizations present in the area and the level of interaction and contact that the community has with them. The organizations were first listed, then cardboard was cut into different sizes depending on the importance of the service it renders, i.e. the largest card represents the most important. All the institutions names were written on different cards in descending order of importance.

A flip chart was then placed on the ground and a large circle drawn to represent the Kamtyong community. The circular cardboard papers were then placed on the flip chart according to the interaction of the different institutions with the community. The nearer the card to the community means the higher the level of interaction. See Figure 4 below.

The community considers the Forest Department and KWS to be relatively important to them. These two interact with each other in their activities, and IUCN collaborates with the two at the same level. Ministry of Water and

IFAD are also relatively important to the community as the first two but have no interaction with the community. Administration is the most important to them and has also the highest interaction.

Figure 4. Institutional Diagram

Institutional ranking

1. Administration
2. Women Group
3. Action Aid
4. Nyayo Tea Zone
5. Education
6. Church
7. Forest Dept
8. Co-operative Societies
9. Health
10. Agriculture
11. Self Help Groups
12. Lands
13. Nat'l Cereals & Produce Board (NCPB)
14. Youth Groups
15. K.W.S
16. Water Ministry
17. Public Works
18. IFAD
19. Nat'l Council of Churches of Kenya (NCCCK)
20. Fisheries
21. IUCN
22. Pyrethrum Board

3. LIVELIHOOD ANALYSIS

Farming is the main source of livelihood for the Kamtyong community. Maize is a staple food, grown mainly as a companion crop with beans, which is the major protein supply to the community, apart from milk. Other food crops grown are coffee, onions, tomatoes, and Irish potatoes. Livestock enterprises that earn money for the local people are dairy production and sale of livestock including cattle, sheep and goats. Poultry farming is unexploited, and honey is harvested from feral colonies established within the forest and to a lesser degree from locally produced hives. Some of the honey is sold for cash at Kapsokwony beekeeping cooperative society, and the rest is consumed for medicinal purposes either directly or mixed with forest herbs.

Other sources of income for the local people are small business enterprises like buying and selling of livestock and farm produce, sale of second hand clothes,

donkey transport, charcoal burning, sale of forest products and production of local brew (see Appendix 4 for pair wise ranking of non agricultural income generating activities) and hiring out labour especially during times of food scarcity.

The Kamtyong community allocates most of their income to food, school fees, labour, medical expenses, farm inputs, and clothes, and all considered basic, day-to-day needs. Little money is invested other enterprises.

Farming occupies the major part of time throughout the year. The community will only get involved in other activities when they are unoccupied on their farms (see Appendix 5 for seasonal calendar). Women are involved in both household and farm work throughout the year, with very little time to relax on a day-to-day basis. On the contrary, men are only busy at the time of land preparation, and even then have more time to relax on a daily basis than women (see Appendix 6 for daily activity profile for men and women). It can be concluded that women in this community spend more time working than men, and have very little time to rest on any given day throughout the year. The amount of time women spend on productive work is nearly equal to the time they spend on reproductive work.

The community faces various constraints in their livelihood strategies. Agricultural constraints mentioned were land, capital, labour, technical knowledge, soil fertility, weather, pests and diseases, market and poor inputs. The most limiting constraint is low soil fertility and the least limiting is marketing.

3.1 Socio-Economic Trends

The community gave information on trends of thirteen (13) socio-economic variables over a thirty-year period from 1965-1995 and the future. The trend line was divided into four (4) periods. They counted grains from 1 to 10 and placed them on a flip chart in the box representing each period. 1 grain of ten (10) shows high availability or high occurrence.

Table 1. Socio-economic Trend Matrix

| Variable/Period | 1965-74 | 1975-84 | 1985-94 | 1995-Future |
|-----------------|---------|---------|---------|-------------|
| Livestock | 9 | 7 | 5 | 2 |
| Business | 2 | 5 | 6 | 8 |
| Communication | 1 | 3 | 5 | 6 |
| Income | 5 | 6 | 4 | 4 |

| | | | | |
|-------------------------|---|---|---|---|
| Development agencies | - | 2 | 4 | 6 |
| Administration | 2 | 4 | 5 | 8 |
| Population | 2 | 5 | 7 | 9 |
| Credit availability | 4 | 2 | 2 | 5 |
| Education | 2 | 4 | 6 | 8 |
| Agricultural production | 5 | 6 | 4 | 4 |
| Employment | 5 | 6 | 7 | 2 |
| Health | 2 | 3 | 7 | 8 |
| Family size | 5 | 8 | 6 | 5 |

Livestock numbers have been decreasing since 1965 and may further decrease in the future. The sharpest decrease was between 1991 and 1995 when there was a decline in security in the area. Business has increased throughout due to increase in population and urbanisation, especially after the creation of Mt. Elgon district. Communication has increased with the maintenance of roads. There also was a telephone service introduced.

Income increased then decreased between 1985 to 1994 due to poor marketing of agricultural produce. This situation may remain the same in the future. Development agencies have continued to increase from 1975 to date and will increase into the future, most likely because Mt Elgon is a relatively new district.

Administrative, education and health services, as well as population have increased from 1965 to date and will increase in the future. So the community feels that development of the area has picked up since independence. On the other hand, employment, agricultural production and family size have decreased and are set to do so in the future. Only credit availability decreased between 1965 and 1994 but increased from 1995 and may do so in the future.

3.2 Household Income and Expenditure

The participants were asked to discuss seasonal annual income sources and expenditure patterns. A flip chart was placed on the ground and a large circle drawn. The circle represented the total income and total expenditure. Bean grains were put on the flip chart covering the area encircled. By comparing the different sources of income, a pie chart was drawn, with sections of the pie representing the portion contributing to each source per season. The same was done for expenditure throughout the year by season (see Figure 5).

In all seasons, livestock contributes the highest percentage to income generated. Labour plays an important role during the food scarcity months of April to August, which is confirmed by the expenditure chart, where $\frac{3}{4}$ of income is spent on food.

Figure 5: Source of Income and Expenditure by Seasons

3.3 Agricultural Constraints

Kamtyong farmers face a number of constraints, which affect the profitability of agricultural production. It is not possible to alleviate poverty and raise living standards unless these constraints are addressed. Strategies on how best to deal with the constraints can be formulated. Different constraints affect agricultural enterprises to varying degrees. The community analysed a number of agricultural constraints and how they affect various enterprises.

To generate this information, the group was to consider a variety of farm enterprises and major constraints, and use maize grains to represent the intensity of the limitations. One indicates minor significance and 10, a major constraint.

Table 2: Agricultural Constraints

| Enterprise/ Resource | Maize | Beans | Onions | Vegetables | Coffee | Bananas | Cattle | Sheep | Goats | Poultry | On farm tree planting | Total |
|-------------------------|-------|-------|--------|------------|--------|---------|--------|-------|-------|---------|-----------------------|-------|
| Land | 1 | 2 | 5 | 1 | 8 | 3 | 1 | 3 | 3 | 1 | 1 | 29 |
| Capital | 9 | 7 | 7 | 5 | 8 | 3 | 8 | 7 | 7 | 6 | 1 | 63 |
| Labour | 9 | 9 | 9 | 4 | 4 | 3 | 8 | 5 | 5 | 2 | 1 | 59 |
| Tech'l Knowledge | 9 | 6 | 7 | 3 | 8 | 3 | 9 | 4 | 4 | 6 | 5 | 64 |
| Low soil fertility | 9 | 8 | 9 | 9 | 7 | 6 | 8 | 7 | 5 | 5 | 5 | 78 |
| Weather | 8 | 9 | 6 | 8 | 2 | 5 | 5 | 3 | 9 | 4 | 9 | 68 |
| Pests and diseases | 3 | 4 | 5 | 8 | 7 | 9 | 7 | 2 | 9 | 2 | 3 | 59 |
| Market | 1 | 1 | 2 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 16 |

| | | | | | | | | | | | | |
|----------------------|----|----|----|----|----|----|----|----|----|----|----|----|
| Poor seed and inputs | 9 | 2 | 4 | 4 | 6 | 7 | 3 | 2 | 8 | 1 | 8 | 54 |
| Storage | 3 | 3 | 8 | 8 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 34 |
| Total | 61 | 51 | 62 | 55 | 54 | 42 | 52 | 36 | 53 | 30 | 36 | |

The matrix shows that the most limiting resource to agriculture is low soil fertility whereas the least limiting resource to agriculture is marketing. Onion production is the enterprise that is most limited by all constraints. Poultry keeping has got the least significant limitation but it has not been exploited because of high initial capital requirement and the high risks involved.

Though onion production has the highest limitation by constraints affecting the enterprise it still has a high potential for development because of the high profit margin it has compared to other high value crop enterprises (see Appendix 7 for cost/benefit analysis of various cash crop enterprises).

It is interesting that marketing ranked very low as a constraint, yet it has been discussed in several forums to date as a serious problem to increasing agricultural profitability. This is true because most of the enterprises discussed were the traditional subsistence ones, which often present less marketing problems, though margins can be low. Cash crops such as vegetables are more associated with marketing problems.

3.4 Livelihood Requirements and Availability

An exercise was completed with the community to identify the availability of specific products needed on a daily basis. The results indicate what basic needs require time and money on a day-to-day basis. This helps the community and development agents identify resources whose availability may be increased within the community in order to release time and income for conservation and development.

A big circle was drawn on a flip chart paper to represent Kamtyong sub-location. The names of resources were then written on the paper. Those resources written inside the circle are those that the community gets within the sub-location. Resources whose names are written partly inside and partly outside the circle are available in this community but not enough to satisfy the requirements, so the shortfall must be obtained from outside. Also, it means that these resources are not available during certain periods of the year, so their supply is derived from other areas. Any resources whose names appear outside are those that are wholly sourced from outside the community.

Figure 6: Livelihood Mapping

All resources the community requires for their daily household living are available within the community. However, they are not self sufficient in most of them.

4. LAND AND RESOURCE USE

4.1 Land Use

Findings from the three (3) different zones show that the distance from the forest reserve has a bearing on the way farmers allocate their land resources and the level of technology they use to manage them. Sketches (Appendix 14) from the lower zone, which is far away from the forest reserve, indicate that more land is allocated to forest and tree production. There are better soil and farm management practices i.e. cultivation along contours, soil conservation, strip cropping, higher crop diversification and farm layout. See Appendix 12 for detailed transect through the sub-location.

The reverse is true for those in the middle and the upper zones, which are closer to the forest reserve. Less land is allocated for tree production and forests, the level of soil and farm management is low as there is neither proper farm layout nor any strip cropping. Lack of soil conservation structures is also evident. One can deduce that farmers living near the forest reserve get most of their tree and forest product needs directly from the forest reserve, so less land is allocated for these purposes. They also practice non-residential cultivation at a bigger scale because of their proximity to the forest. Cultivating more fertile, forest land to meet subsistence and financial needs, compensates loss of yields resulting from poor soil and poor farm management. Farmers in the lower zone are farther removed from the forest and have little to no access to NRC. Therefore, they employ better management techniques on their farms for better yields (see Appendix 14). Farmers in the lower zone practice agroforestry, such as production of woodlots. They have also opened up quarries where they cut and sell building stones.

There is a potential for ecotourism in Kamtyong sub-location as both local and foreign tourists could come to see and appreciate interesting sites and local culture. Some of the features that would be interesting to see are the caves and the rich bio diversity of the Mt Elgon forest.

4.2 Land Tenure

A matrix was completed, with the type of tenure on the x-axis and type of conflict on the y-axis. The community then counted grains between 1 and 10 and put them in the appropriate box to represent the intensity of each type of conflict on the different types of tenure. One (1) grain shows least conflict and ten (10) grains shows highest conflict. Zero (0) represents no conflict.

The land classification were first defined and discussed with the group as follows:

Freehold - land owned by individuals who have or don't have title deeds.
 Government- Forest, roads, schools, water supply
 County Council- market centre
 Communal- dips, riverbanks
 Leasehold - Land rented from landowners by the land less for temporary stay and cultivation

Table 3: Land Tenure Matrix

| Conflict / Tenure | Among family members | Between families | Between villages | Existing laws | Total |
|-------------------|----------------------|------------------|------------------|---------------|-------|
| Freehold | 8 | 9 | 5 | 5 | 27 |
| Communal | 1 | 3 | 5 | 4 | 13 |
| Government | 1 | 6 | 5 | 7 | 19 |
| Leasehold | 6 | 8 | 3 | 4 | 21 |
| Total | 16 | 26 | 18 | 20 | |

On freehold land, there exists a conflict among family members, which includes leasing without consent of parents or wife, boundary disputes and inaccessibility to land by sons and daughters. Between families, access through farms, pasture, alteration of boundaries, access to water and fire outbreaks are sources of conflict whereas between villages, conflicts arise from firewood and general land disputes. Environmental conservation rules are a source of conflict with the existing laws.

On communal land, conflicts within the family arise when a husband and wife want to use the same piece of land. Between families, access to water, firewood collection, illegal hunting and changing river courses are causes of conflict. Between villages, conflicts arise when people graze on road reserves and riverbanks, plough along riverbanks and change boundaries. Conflict with existing laws includes use of the riverbanks for cultivation and roads draining into farms.

Conflicts on government land within the families are from general use of the portion of land given to the father. Between families, there are boundary alterations, lease of land to more than one tenant and division of farm produce among families. Issues also arise between villages when there are fire outbreaks and sub-location boundary disputes. Felling of trees, ploughing

riverbanks and burning forest plantations brings about conflict with existing laws on government land.

Leasehold land also has conflicts within families that arise from high population and water access. Between families, conflicts occur on environmental health rules, whereas between villages, there is disagreement between the rich and the poor, as the rich want to lease more land at the expense of the poor. With the existing laws, the conflict arises from selling of plots without government authority.

4.3 Trends in Resource Availability

Local people depend on the resources of Mt. Elgon for their livelihoods. It is therefore important that the residents understand changes that have taken place over time. The key changes can then be integrated into the village action plan.

The mountain resources have all been over-exploited and all are reducing according to the local people. Wildlife population, water resources, rainfall, the Mt. Elgon forest reserve, on-farm forests, land and soil fertility have all declined over the years (see Table 4 for a detailed resource trend matrix).

This information was generated through the same process of matrix construction by the community as previously, by counting grains between 1 and 10 to show trends in resource availability during the periods indicated.

Table 4: Resource Trend Matrix*

| PERIOD / RESOURCE | 1953-62 | 1963-72 | 1973-82 | 1983-92 | 1993-99 |
|-------------------|---------|---------|---------|---------|---------|
| Wildlife | 6 | 4 | 3 | 1 | - |
| Water Resource | 7 | 5 | 3 | 2 | 1 |
| Rainfall | 4 | 2 | 1 | 1 | 1 |
| Forest | 5 | 2 | 1 | 1 | 1 |
| On Farm Forest | 7 | 4 | 3 | 2 | 1 |
| Land | 10 | 5 | 3 | 3 | 2 |
| Soil Fertility | 10 | 6 | 4 | 3 | 1 |

**The higher the number of grains the higher the availability of the resource*

Wildlife population has generally decreased since 1953 because of an increase in population and a change from pastoralism to agriculture by the community.

As the population has increased, the land under cultivation has also increased, interfering with the natural habitat of these animals, which resulted in their further retreat into the forest. Some of them have also been hunted down for meat.

Availability of water resources has also declined throughout the years. Previously, there was dense forest cover, which decreased as people utilised forest resources. As years proceeded, by 1972, charcoal burning was very common and a lot of trees were felled. The water decreased tremendously. From 1982, due to rise in population, there was more charcoal burning and increased cultivation within and outside the forest, further reducing the water availability from springs and rivers.

As tree cover has been reduced, so has the rainfall. Between 1952 and 1962 rainfall was high but from 1962, the amount has continually decreased except for the El Nino phenomenon of 1997, when extra ordinary rainfall was recorded.

On-farm forest cover within the community has continued to decrease throughout the period. At the beginning of their settlement, there was more forest cover because the population was low. As the population increased and lands were demarcated, more land was put under crop production reducing the amount of forest cover around the farms.

In 1952, the forest covered all the area from Kaberwa to Kimilili. As more people settled, there was increased demand for forest products. Since land was demarcated in 1963, the people have continued to cut down trees, leading to an insufficient availability of tree products. People have resorted to using the forest reserve to satisfy their various needs of tree products. With the introduction of the exotic tree species, which are clear felled, big tracts of land are left without trees.

Land has continued to decrease per capita due to the ever-increasing population. In 1963 when land was demarcated, there was an influx of people from the white highlands who had previously emigrated, so land availability decreased tremendously. It has continued to decrease after that due to further subdivision as people start new families. The community has seized the opportunity to cultivate lands within the forest to satisfy their subsistence and cash needs in an increasingly difficult economy.

Fertility of the soil has continually decreased due to repeated cultivation of the same land without proper soil management.

4.4 Forest Resources

Generally, the residents of Kamtyong sub-location perceive the availability of all forest resources except land decreasing progressively since 1984. The results of the forest resource trend matrix exercise were quite dramatic and may have been exaggerated according to people's perceptions that the past was always better and more productive. However, this matrix represents an opportunity for the project implementers. This perception of declining resources is a good basis for conservation efforts and improving on-farm availability of dwindling resources.

Table 5: Forest Resource Trend Matrix

| Period / Resources | 1980-84 | 1985-89 | 1990-94 | 1995-1998 | 1999-Future |
|------------------------------------|---------|---------|---------|-----------|-------------|
| Trees and Tree products | 7 | 5 | 3 | 2 | 1 |
| Firewood | 10 | 8 | 6 | 4 | 2 |
| Honey | 8 | 8 | 4 | 2 | 1 |
| Water | 10 | 8 | 5 | 3 | 2 |
| Herbal medicine | 10 | 8 | 5 | 3 | 2 |
| Pasture | 10 | 5 | 3 | 1 | 1 |
| Non-residential forest cultivation | 10 | 0 | 0 | 4 | 8 |
| Wildlife | 8 | 5 | 2 | 1 | 1 |

Availability of trees and tree products has continually decreased throughout the period due to over exploitation by commercial saw millers. Firewood has decreased due to over exploitation of tree and tree products by saw millers who do not allow complete maturing and falling of dead wood for firewood. There is also over-collection of wood by the rising population.

Honey products has also continued to decrease in availability due to over exploitation and decrease in forest vegetation arising from forest timber harvesting, which, in turn, reduces forage from which bees make honey.

Water, herbal medicine, pasture and wildlife have decreased throughout and are set to fall further in the future. Forest cultivation fell to zero in 1985 after eviction of forest residents but started in 1995 with the re-introduction of non residential cultivation, and will increase in the future according to the local people. In any case, it is their wish that more land is given to them for cultivation in the forest reserve

Table 6: Criteria Ranking Matrix of the Ten (10) Most Useful Indigenous Trees Species

| Species/Us e | Medici ne | Foo d | Fodd er | Manur e | Buildi ng | Charco al and fuel wood | Timb er | Scor e | Ran k |
|------------------|--------------|----------|------------|------------|--------------|----------------------------------|------------|-----------|----------|
| Bekerionte et | 7 | 0 | 4 | 5 | 8 | 8 | 10 | 42 | 2 |
| Tekanteet | 9 | 3 | 3 | 0 | 6 | 3 | 0 | 24 | 9 |
| Tungururwe et | 10 | 10 | 6 | 6 | 6 | 10 | 0 | 48 | 1 |
| Kaimatiyee t | 5 | 0 | 3 | 2 | 10 | 10 | 0 | 30 | 7 |
| Mkengoret | 1 | 0 | 2 | 10 | 3 | 7 | 10 | 33 | 6 |
| Simotweet | 4 | 2 | 3 | 10 | 2 | 6 | 8 | 35 | 8 |
| Mokoyweet | 3 | 4 | 9 | 10 | 2 | 6 | 8 | 42 | 2 |
| Tobosweet | 8 | 0 | 0 | 8 | 1 | 10 | 0 | 27 | 5 |
| Kookorweet | 10 | 0 | 0 | 7 | 0 | 0 | 5 | 22 | 10 |
| Komonweet | 4 | 10 | 1 | 4 | 7 | 10 | 0 | 36 | 4 |
| Score | 61 | 29 | 31 | 62 | 45 | 65 | 43 | - | - |
| Rank | 3 | 7 | 6 | 2 | 4 | 1 | 5 | | |

4.4.1 Forest Resources Values and Conflicts

The community compiled information on the value, availability and existing conflicts of twelve (12) forest resources by constructing a matrix. A score of ten (10) represents high value, availability or conflict and a one (1) score least of either of the three.

Table 7: Forest Resource Analysis Matrix

| Resource | Value | Availability | Conflict |
|----------|-------|--------------|----------|
| Water | 10 | 1 | 9 |
| Trees | 8 | 2 | 8 |

| | | | |
|-------------------|----|----|---|
| Firewood | 10 | 5 | 5 |
| Medicine | 7 | 3 | 8 |
| Honey | 8 | 2 | 4 |
| Fruits | 10 | 8 | 2 |
| Pasture | 10 | 5 | 3 |
| Soil conservation | 10 | 4 | 7 |
| Air | 10 | 10 | 1 |
| Soil improvement | 8 | 5 | 1 |
| Bamboo | 5 | 2 | 1 |
| Vegetables | 6 | 9 | 1 |

Used daily in all homes, firewood holds a high value by the community. Its availability is moderate considering that the forest is distant. Most homes do not store any significant amount of firewood. Conflict exists mainly with the Forest Department, which restricts collectors to only one head load per family per day. Trees are highly valued as building materials, but are not readily available due to restrictions by the Forest Department, causing many conflicts.

Water within the forest is highly valued, but is not readily available because of restrictions to forest access. Medicine is valued though its availability is low. Collection of traditional medicines results in high conflict since most originate from different parts of indigenous trees, whose use is restricted by KWS and FD.

Honey is valued highly but not available because it is only harvested at certain times of the year. In addition, the traditional methods of honey harvesting present a fire risk to the forest so the community is not allowed access to harvest honey, resulting in frequent conflicts. Fruits are highly valued and readily available, with little existing conflict because their harvesting is not restricted.

In this Sabaot community, pasture is highly valued and moderately available due to seasonal flushing and high competition by animals. Conflict is minimal as there is little restriction on grazing of animals.

Soil conservation properties of the forest are highly valued yet only moderately available because of continued exploitation of trees. Areas where infiltration could take place have been left bare, which results in excess run-off washed into adjacent farms, causing erosion. There is high conflict since the

communities are against over exploitation of the forest. Air is highly valued and readily available but some conflict is cropping up due to exploitation of the trees by saw millers.

Bamboo has moderate value but not readily available due to the distance to the bamboo zone, its seasonal availability, and the ban on harvesting. Vegetables have above average value, are highly available, and have very little restriction on collection, so minimal conflict exists.

4.4.2 Uses and Importance of Trees to the Local Community

The Mt. Elgon ecosystem has a wide range of indigenous and exotic tree species used by the community on a day-to-day basis, which are found both in the forest reserve, and on the adjacent farms (see Appendix 8). The uses vary from species to species but several have more than one use. Trees are used for timber, medicine, building, fuel wood, fodder for animals, fruits; shade, hedge, soil improvement and making household items (see Appendix 9 for indigenous trees and uses of different tree parts.)

The same process of matrix construction was followed as before where the community counted grains to score for a utility of each tree. From the matrix (see Appendix 10), the Tungururwet tree is the highest valued multi-purpose tree and the Nandi flame has the least number of uses. It is only used for firewood and timber but provides plentiful shade. All thirteen trees are used for firewood though each tree has a different quality. The community however observed that in some cases they prefer exotic tree species because they are fast growing.

Because of over exploitation, increase in demand of tree products and the inability of indigenous tree species to grow fast and supply these products, local people grow exotic tree species that are fast growing to supplement their requirements. They also go to the forest to harvest different tree products. The PRA participants compared the importance of indigenous tree species according to their uses (see Table 6) and did the same comparison combining indigenous and exotic species (see Appendix 10).

Results show that indigenous trees provide multiple uses, with a higher utility than the exotic species. From the combined comparison, the four most important trees are indigenous.

4.5 Ecotourism

There is potential for ecotourism in this area because of its topography, landscape, and indigenous knowledge and culture. In order to gain insight on the existing potential, groups of youth were asked to list the sites they

consider interesting for visitors and also the possible activities they could do to enhance ecotourism.

Table 8: List of Potential Ecotourism Sites and Activities

Tourism attraction/Scenes of interest

| Site | Location |
|--|------------------------------|
| 1. Caves | Chekerer, Chepkungar |
| 2. Elephants | Forest |
| 3. Waterfalls | Chepkerer |
| 4. Rock hyrax | Chepkerer |
| 5. Monkeys | Chepkerer forest |
| 6. Buffaloes | Forest |
| 7. Bats (in the caves) | Chepkerer, forest |
| 8. Traditional attire | Homes |
| 9. Camp sites and bandas | Chepkitale forest, Chepkerer |
| 10. Artefacts (bow and arrow,spear,shield) | Mzee Boiyo, Tendet |
| 11. View points | Chepkerer, Chepkungut forest |
| 12. Use of natural plants | |
| 13. Tour guides | |

Potential Ecotourism Activities

1. Formation of groups
 - Collection of traditional attires
 - Formation of tour guides
2. Conservation of forests
 - Community agroforestry - woodlots, forest.
3. Bandas
 - Individuals
 - Groups
4. Security - by area community
5. Languages
6. Trails and roads

7. Hostels (guest houses)
8. Water sources
9. Tour guides
10. Local tourism
11. Publicity

4.6 Stakeholders and their Relationship

After a thorough discussion on the meaning of stakeholder, the community conducted a stakeholder analysis. They initially listed the stakeholders in the Mt. Elgon protected areas, after which the facilitators explained how the analysis was to be carried out.

A large circle was drawn in the centre of a flip chart to represent the Mt. Elgon forest reserve. Each stakeholder was represented by a circle, the size corresponding to the level of stake (the interest) of the stakeholder. The distance of the circle shows the physical distance from the Mt. Elgon forest of that particular stakeholder. Lastly, the thickness of the arrow indicates the influence the stakeholder has on decision-making on matters concerning the Mt. Elgon forest, with the thicker arrow suggesting more influence.

It can be noted that the private companies that harvest resources from the Mount Elgon Forest Reserve, the administration and county council have influence in decision making. After KWS and Forest Department the community has the biggest stake in the forest reserve yet as little if any influence on decision-making.

The exercise was helpful to identify stakeholders within the community, like schools, women groups, self-help groups, youth groups and herbalists.

Figure 7: Stakeholder Analysis

5. PROBLEM IDENTIFICATION ANALYSIS AND RANKING

Before carrying out an analysis and ranking of problems, the whole community met together and identified development constraints that the community faces. The participants listed a total of twelve problems, after which three social groups (men, youth and women) were formed. Each group was given four (4) problems to analyse (see Table 9 below). The analysis was done through group discussions outlining the underlying causes, present coping strategies and possible opportunities for intervention for each problem (see Table 10). This analysis was very important as it formed the basis of the action plan formulated by the community that addressed the main constraints and priorities in conservation and development.

Table 9: Problems Analysed by Various Social Groups

| Women | Youth | Men |
|---|--|--|
| 1. Ill health 2. Inadequate childhood development 3. Poverty 4. Lack of education to the community | 1. Lack of trees 2. Soil erosion 3. Wildlife damage 4. Lack of access roads | 1. Inadequate water 2. Loss of indigenous trees 3. Land issues 4. Cattle rustling |

Table 10: Problem Analysis

| Problem | Causes | Coping Strategies | Opportunities |
|----------------------|---|--|--|
| Lack of Trees | Charcoal burning Unsustainable cutting of trees Forest fires Small farm size Destruction of trees by domestic / Wildlife Cutting trees for firewood Lack of planting trees Lack of technical knowledge Tree diseases and pests Destruction of trees for medicinal use (roots and bark) | Buying of trees from forest and communities members. Stealing from the forest. Use of dry cow dung Borrowing from one another Use of pruned coffee | Introduce tree nurseries in groups Technical training of community on importance growing of trees. Plant more indigenous medicinal use. Plant fast growing agro-forest trees Identify an NGO to assist community with nursery materials. |
| Soil Erosion | Mono cropping Cultivation along the river bank Overgrazing Lack of technical knowledge Negligence on technical farming method | Inter cropping Crop rotation Deep rooted crops Strip planting Planting along the contours Construction of score checks | Planting more trees in the affected areas Construction of more score check along the roads Train the community before implementing the |

| | | | |
|----------------------------------|--|--|---|
| | <p>Hazard tree cutting</p> <p>Destruction of trails paths by livestock leading towards water sources</p> <p>Poor road drainage construction</p> <p>Block of drainage.</p> | <p>Construction along the contours</p> <p>Planting of cover crops</p> | <p>conservation structures on the farms</p> <p>Install piped water for domestic / livestock consumption</p> <p>Zero grazing / tethering</p> <p>Practice agro-forestry</p> <p>Leaving land to fallow</p> |
| Wildlife Damage | <p>Lack of protective measure by KWS</p> <p>Fire out brake</p> <p>Destruction of conducive of natural habitat of game animals</p> | <p>Scaring animals by beating drums, bells, shouting.</p> <p>Killing by dogs and trap (snares)</p> <p>Abstaining from the farm (in the forest)</p> <p>Fighting forest fires</p> <p>Fencing the shambas</p> | <p>Employ more KWS rangers</p> <p>Train community on Wildlife management</p> <p>Form Wildlife Clubs (youth) to protect fauna and flora</p> <p>Fencing of forest by electrical wires</p> <p>Construct game moats</p> |
| Lack of access roads | <p>Lack unity</p> <p>Lack of community organisation</p> <p>Difficulty of cmty mbers to surrender land for roads</p> <p>Lack of facilities for proper road constructions</p> <p>Much dependency on community on GOK (P/W)</p> <p>Lack of tech-knowledge</p> | <p>Using donkeys</p> <p>Walking on foot</p> <p>Use of ox-carts</p> <p>Use bicycles</p> | <p>Educate the community</p> <p>Formation of community youth groups for roads construction.</p> <p>Effect physical planning land Act on sub-division</p> <p>Need for outside assistance e.g. NGO</p> |
| Inadequate domestic water | <p>Long distances radius 3 km</p> <p>Polluted water</p> | <p>Walk long distance to draw water and carry</p> | <p>Piped water scheme form forests</p> <p>Protect springs e.g.</p> |

| | | | |
|---|---|---|--|
| | Seasonality Lack of roof catchment harvesting Undeveloped pipe scheme Destruction of catchments Lack of spring protection | by head and it is by women 3Km Collection of water by donkey and oxen Hand dug wells Protection of springs | Chepsoikey, Naskompyodent, ngam, Cheptnet, tagandet. Improve catchments trees planting Enhance roof harvesting water tanks To develop hand dug wells and boreholes. |
| Loss of biodiversity (indigenous trees and wildlife) | Agriculture (farming) Population growth Forest fires Poaching Collection of firewood (charcoal) Building and construction Lack of tree nurseries Lack of knowledge Herbalists | Plant the species (tree) Preserve areas with important species Started nursery for the plant species Domesticate animals i.e. rabbit, bee keeping, dove. | To plant clear cutting forest Start tree nurseries Domesticate the animals (snakes), Guinea fowl Plant trees Training on importance of indigenous trees |
| Land issues | Small farm parcel sizes Not processed land title deed Number of people per household is high e.g. 10 sons Fear of sons can sell Lack of assistance from the sons especially the working sons Main source of income Insecurity (protection) polygamy i.e. old | Sons lease land from the father and from neighbours. Community and clan committee to intervene Sons has given small pieces for subsistence. | Mass education for sons and parents Land issues thus education The need for a title deed Succession to be facilitated. |

| | | | |
|------------------------|---|--|--|
| | <p>men think of marrying in old age</p> <p>Promote hard work among sons</p> <p>Sons may lease the land to others.</p> | | |
| Cattle rustling | <p>Jealousy</p> <p>Envy</p> <p>Laziness</p> <p>Poverty</p> <p>Destructive politics</p> <p>Inborn thief</p> <p>Enrich oneself</p> <p>Dowry</p> <p>Bordering Uganda</p> <p>Next to the forest</p> <p>Resettlement in Chepyuk (landless)</p> | <p>Padlocked - house - chain</p> <p>Chain the cows (metals)</p> <p>Patrol - vigilant</p> <p>Dogs, guards.</p> <p>Home guards (KPR)</p> <p>Administration (police) to offer security</p> <p>Public Barazas.</p> | <p>Public to offer security groups - report</p> <p>Introduce police post.</p> <p>At least one post (APP)</p> <p>Increase number of home guards</p> <p>Transport and communication to be improved</p> <p>Settle the landless in Chepyuk settlement.</p> |
| Poverty | <p>Laziness</p> <p>Ignorance</p> <p>Lack of education</p> <p>Lack of capital</p> <p>Lack of transport</p> <p>Lack of appropriate technology</p> <p>Ill-health</p> <p>Lack of title deed</p> <p>Unemployment</p> <p>Lack of proper market</p> <p>Poor planting</p> | <p>Donkey transport</p> <p>Group formation</p> <p>Women, Youth</p> <p>Self help</p> <p>Co-operatives</p> <p>Ox-plough</p> <p>Herbal medicine</p> <p>Casual labour</p> <p>Business activity kiosks, shops, hawking, repair services, jua kali</p> <p>Farming</p> <p>Livestock activities production</p> <p>Crop diversification</p> | <p>Availability of credit facilities</p> <p>Promote land sub-division and acquire title deeds</p> <p>Training</p> <p>Promote tourism</p> <p>Promote small scale enterprises</p> <p>Promote tree nurseries and wood lots</p> <p>Encourage group formation</p> |

| | | | |
|---|---|---|--|
| III health | Lack of food i.e. milk Unsafe water Poor sanitation Lack of nutritional education Long distances to health facility | Boiling water Use of traditional herbal medicine Walk long distances to hospital | Construction of dispensary Mobile clinic Community based health care / primary health care. |
| Inadequate childhood development | Lack of community organisation Lack of awareness Lack of money | Children start school late when they are able to walk far distances to school Transport children on bicycles to school | Employ teachers on self help basis Identify and get places for children to learn. |
| Lack of community education | Ignorance Lack of extension agents Lack of money to enrol for seminars Drunkenness | Learn from others Learn from church organisation Learn through radio Learn at clinics during hospital visits | Hold barazas to educate people on various subjects Conduct seminars and field days Start groups Take community for educational tours Increase adult education classes. |

Problems were listed in order by each social group using the pairwise ranking approach (see Appendix 11). The results of each group are summarized below. The detailed analysis of each problem is also contained in this section.

Table 11. Summarised Problem Ranking by Social Groups

| Rank/ Social Group | MEN | YOUTH | WOMEN |
|-----------------------------------|-------------------|----------------------|----------------------|
| 1 | Inadequate water | Inadequate water | Inadequate water |
| 2 | Lack of education | Lack of education | III health |
| 3 | III health | Poverty | Wildlife crop damage |
| 4 | Land issues | Inadequate childhood | Poor childhood |

| | | | |
|----|----------------------------------|--------------------------|--------------------------|
| | | development | development |
| 5 | Loss of indigenous trees | Land issues | Lack of education |
| 6 | Poor roads | Poor roads | Poverty |
| 7 | Lack of trees | Lack of trees | Poor roads |
| 8 | Inadequate childhood development | Ill health | Land issues |
| 9 | Soil erosion | Soil erosion | Soil erosion |
| 10 | Wildlife crop damage | Cattle rustling | Loss of indigenous trees |
| 11 | Poverty | Loss of indigenous trees | Lack of trees |
| 12 | Cattle rustling | Wildlife crop damage | Cattle rustling |

Table 12. Consolidated Ranking of Problems of the Different Social Groups

| RANK | PROBLEM | MEN | YOUTH | WOMEN | TOTAL |
|------|----------------------------------|-----|-------|-------|-------|
| 1 | Inadequate water | 1 | 1 | 1 | 3 |
| 2 | Lack of education | 2 | 5 | 2 | 9 |
| 3 | Ill health | 3 | 8 | 2 | 13 |
| 4 | Inadequate childhood development | 8 | 4 | 4 | 16 |
| 5 | Land issues | 4 | 5 | 8 | 17 |
| 6 | Poor roads | 6 | 6 | 7 | 19 |
| 7 | Poverty | 11 | 3 | 6 | 20 |
| 8 | Wildlife crop damage | 10 | 12 | 3 | 25 |
| 9 | Lack of trees | 7 | 7 | 11 | 25 |
| 10 | Loss of indigenous | 5 | 11 | 10 | 26 |

| | | | | | |
|----|-----------------|----|----|----|----|
| | trees | | | | |
| 11 | Soil erosion | 9 | 9 | 9 | 27 |
| 12 | Cattle rustling | 12 | 10 | 12 | 32 |

Inadequate water ranked top priority for each of the social groups. The community contributed towards a piped water system installed in the neighbouring Kibuk sub-location, but has yet to benefit. Therefore, although other problems may impact the community to a greater degree, expectations of assistance have elevated water to the top priority for the community. Men and women were more concerned about health and education problems than the youth. Poverty concerns the youth of the community who are preoccupied with securing work and starting new families. Men tend to use indigenous trees more than other social groups, and therefore recognize the diminishing availability of this resource. As also seen in Trans Nzoia district, women see wildlife crop damage as much more of a crucial problem than the other social groups, probably because one of their principal concerns is providing food for their families.

6. THE COMMUNITY ACTION PLAN

After all the problems were analysed and ranked, the community elected a thirty (30) member CAP committee to continue working with the PRA team on development and implementation of the community action plan. The thirty-member committee compiled an action plan which addressed opportunities and priorities to the major constraints cited by the community. To assist with the planning of priorities favourable in the context of their resource limitations, an options assessment was conducted, which further analysed the opportunities according to a number of criteria (sustainability, productivity, equity, technical feasibility, social-cultural feasibility, cost and time to benefit). Opportunities were ranked according to the favorability for the cited criteria. Only the highly ranked opportunities were planned as priorities for conservation and development (see Appendix 12 for details on the options assessments).

The committee proceeded to compile the action plan whose details are contained here below.

Table 13: Community Action Plan

| Opportunity | Action to be taken | Resources provided by the | Resources from outside | When to start | Who to follow | Remarks |
|-------------|--------------------|---------------------------|------------------------|---------------|---------------|---------|
|-------------|--------------------|---------------------------|------------------------|---------------|---------------|---------|

| | | | | | | |
|--------------------------------------|---|---|--|-----------------|---|--|
| | | communit y | | | | |
| Problem: Lack of Community Education | | | | | | |
| 1. Field days and seminars | Communit y mobilisati on. Conduct field days and seminars. Topic identification. Organising field days and seminars. Identify the target group. | Venue. People (participan ts) Food (meals) Indigenous technical knowledge . Materials for demonstra tion. Finances. | Venue. Technical experts. Meals. Demonstrat ion materials. Teaching aid. Stationary. MoA, MoH, KWS, FD, MoW, N GOs . Transporta tion means. | Immedia tely | Andrew Ndiema . Alice Kipkiric h. Lydia Sang. | There is high demand for d/days. |
| 2. Barazas | Communit y mobilisati on Attending | Venue Attendants Local administra tion | Administra tion Technical experts | On going | | Good for sensitisa tion and awareness creation purposes but not teaching Could be used to identify topics for seminars and field days |
| 3. Group | Identify | | Technical | Septemb | | Groups |

| | | | | | | |
|---|---|---|--|---------------|--|---|
| formation and strengthen existing groups | leadership Recruit members Set objective and goals | Leadership People Finances | support registration | er 1999 | | will be good targets for field day and seminars |
| 4. Tours | Identify area of interest (topic) Select area to visit Identify target groups Set date for travel Arrange for transport | Participants Funds | Transportation Technical assistance Accommodation | Next year | | Tours should be consulted after other opportunities (1-3) |
| Problem - Lack of access roads | | | | | | |
| 1. Educate the community on importance of access roads and land law | Community mobilisation Organise a baraza Land sub division | Attendants Local administration Funds | Technical experts i.e. Roads officer Surveyor Physical planner MoA Administration Funds Transport | November 1999 | | Existing access roads Act /land /law/ planning Act exists |
| 2. Road construction | Leadership | Unskilled labour Tools | Tools Technical experts | November 1999 | | There is an existing road |

| | | | | | | |
|--|--|---|--|---------------|--|--|
| | <p>Community mobilisation</p> <p>Organise baraza Select committee for roads Select specific road sites</p> <p>Organise for fundraising</p> | <p>Funds</p> <p>Materials Stores</p> | <p>Funds Materials i.e. sand, cement, culverts.</p> <p>Transport</p> | | | <p>committee</p> <p>On going exercise on some roads</p> <p>Outside assistance in terms of funds be sought (NGOs and GOK)</p> |
| 3. Formation of youth groups and strengthening existent ones | <p>Leadership</p> <p>Community mobility Select officials</p> <p>Formulate goals and objectives</p> <p>Registration</p> | <p>Participants</p> <p>Funds</p> | <p>Technical expertise</p> <p>Funds</p> <p>Transport</p> | November 1999 | | |
| Problem: Lack of water | | | | | | |
| 1. Piped water | <p>Identify source Survey</p> <p>Planning and design</p> | <p>Source</p> <p>Unskilled labour</p> <p>Materials i.e. stone, ballast.</p> | <p>Cement Pipes</p> <p>Technical input expert Skilled labour</p> | October 1999 | | Source has been shaded |

| | | | | | | |
|---|--|---|---|--------------------|--|---|
| | Constructi on | Finance Skilled labour Masonry stones | Funds Transport Sand Reinforcem ent bars Wire mesh Water proof cement Nails Pipe fittings Solvent glue Pigment paper Binding wire Ministry of water | | | |
| 2. Improved water catchmen ts. Tree planting. | Planting of trees Fencing the catchmen ts Terracing | Tree seedlings Seeds Land Catchment s Labour Funds | Tree seedlings Seeds Technical expert polytubes funds | Septemb er 1999 | | Seedlings available Catchme nt areas identifie d |
| 3. Spring protectio n | Identify source Form managem ent committe e Open bank account Registrati | Sources Stones Labour (unskilled) Funds Skilled labour | Sand Funds Cement Technical expert Building materials Pipes Wire mesh | Septemb er 1999 | | Springs identifie d |

| | | | | | | |
|--|--|--|---|--|--|--|
| | on with the ministry of social services Planning and design | | Polythene paper Water proof cement Ballast | | | |
|--|--|--|---|--|--|--|

Problem: Ill health

| | | | | | | |
|--|---|---|---|--------------------|--|---------------------------------------|
| 1. Constructi on of dispensar y | Identify site to build (land) Planning and design Form committe e Funds Purchase land/TD Registrati on Account Constructi on | Land Building material i.e. stone, timber, ballast. Water Labour | Building material Sand Cement Iron sheets Nails Reinforcem ent Funds Transport Ballast Binding wire Ministry of Health Physical planner NGO, AAK, IUCN | October 1999 | | Dispensar y is highly needed |
| 2. Mobile Clinic | Identify the centre Form a committe e Funds Road maintena nce | People Furniture Water Labour | Drugs Medical personnel Transport Funds Needles and syringes Health | Septemb er 1999 | | Immediat ely |

| | | | | | | |
|--|---|--|--|-------------|--|--|
| | | | education | | | |
| 3. Community based health care / primary health care | Mobilise community Organise seminars for health actors Creating awareness on environmental sanitation | People Venue Labour Materials | Technology Materials Funds Transport Ministry of Health Action Aid Kenya (AAK) | Immediately | | |

Problem: Lack of trees/loss of indigenous trees

| | | | | | | |
|-------------------|---|---|---|-----------------|---------------|---------------------|
| 1. Training | Identify venue Identify who to train Topic Decide on time to arrive at venue | Participants Venue Materials | Facilitators Materials Venue Transport Funds | mid - September | Sub committee | Discussed elsewhere |
| 2. Tree nurseries | Identify nursery sites Form committee Preparation of site Registration of group Collect seeds | Land Seeds People to manage Funds Water | Seeds Technical experts Materials i.e. tubes, watering cans Funds | Nov | Sub committee | Discussed elsewhere |

| | | | | | | |
|-----------------------|--|---|---|--------------------|---------------|---|
| 3. Plant trees | Have tree nursery sites Mobilise committee through baraza Organise tree planting occasion in community | Land Water Seedlings People Funds Materials Labour | Funds Technical experts Materials | May 2000 | Sub committee | Both exotic and indigenous trees (agroforestry species inclusive) |
| 4. Stop clear cutting | Sensitise people Plant more trees Effect the act | People | Technical staff Police administration | Mid September 1999 | Sub committee | |

Problem: Poverty

| | | | | | | |
|----------------------|---|---|---|--------------------|---------------|---------------------------------------|
| 1. Training | Identify venue Time to arrive at venue Topic Who to train | Participants Venue Materials | Facilitators Materials Funds Venue | Mid September 1999 | Sub committee | Training was discussed as a problem |
| 2. Credit facilities | Identify target group Group formation Registration of group | People Funds Land and premises Materials | Funds Training Material and personnel | mid October 1999 | Sub committee | Already existent groups to start with |

| | | | | | | |
|--|---|--|---|------------------|---------------|--|
| | Raise money and open account Develop by laws Election | | | | | |
| 3. Group diversification | Land (leasing) Identify relevant crop Training Look for capital | Farm implements Seeds (inputs) Appropriate technology | Farm implement / inputs Appropriate technology | On going | Sub committee | Extension services required |
| 4. Micro enterprise marketing agricultural product | Identify enterprise Identify target group Training Identify market and product Develop storage facilities Find premise Construct road | Funds People Raw materials Stores Revolving fund Transport (donkey / vehicle) | Funds Personnel Materials Loans Mode of transport (vehicle) | Mid-October 1999 | Sub committee | Improve on going activities |
| Problem: Land issues | | | | | | |
| 1. Mass education | Community mobilisation Baraza | Participation Land Funds | Technical expert Materials Transport | November 1999 | Sub committee | There are existing land laws that govern |

| | | | | | | |
|---------------------------------|--|---|--|----------------|---------------|---------------------------|
| | Field days Identify area of land use conflicts | Materials Transport | Funds | | | land sub division etc |
| Problem: Soil erosion | | | | | | |
| 1. Plant trees | Refer discussion in CAP lack of trees | | | September 1999 | Sub committee | |
| 2. Construction of score checks | Mobilise community Sensitise people through baraza Identify affected sites | Labour Material | Technical experts | September 1999 | Sub committee | |
| 3. Training on conservation | Identify site of training Mobilise community Identify who to train | Participants Venues | Technical expertise | September 1999 | Sub committee | |
| 4. Zero - grazing | Planting of fodder Provision of water Zero grazing unit est. Form | Fodder Water Shelter Materials Labour | Materials Iron sheets Cement Sand Nails Technical experts | October 1999 | Sub Committee | Some groups already exist |

| | | | | | | |
|--------------------|--|---|--|-------------------|----------------------|--|
| | groups and register | | Skilled labour | | | |
| 5. Agroforestry | Identify farm Identify tree species | Labour Farm Seeds | Seeds Technical experts | May 2000 | Sub commit tee | |
| 6. Mulching | Cut grass and dry Preserve maize stocks Mobilise the communit y Effect the act governing position | Dry grass Maize stocks Labour Farm | Technical experts Police administrat ion | Decemb er 2000 | Sub commit tee | |

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

1. Inhabitants of the Kamtyong sub-location practice small-scale, mixed farming. Their livelihood depends on agricultural and livestock production.
2. The Mt. Elgon forest plays an important role in the livelihood of these people, having both direct and indirect benefits.
3. Mt. Elgon as a mountain resource has been over exploited, especially tree products, by commercial saw millers. If this trend continues, then benefits to local people from this important resource will diminish in the future.
4. The local people are able to play a leading role in the management and sustainable use of the Mt. Elgon resource because they know and understand the status of the mountain resource, its trends, and its threats.

5. Poverty of the local people has subjected the mountain resources to pressure and increased conflict.
6. The rapid increase in population has resulted in land degradation on the farms adjacent to the forest and low per capita land ownership. Therefore, local people have entered the forest in search of fertile land to meet their subsistence and financial requirements.
7. Judging from the identified sites of interest by the youth, ecotourism in the area has potential which requires further exploration.

7.2 Recommendations

1. Concerning agricultural and livestock production, which is the main source of livelihood of the local community, appropriate land resources management has to be practised so that people can get high and sustainable yields at the lowest cost thereby increasing agricultural profitability and reducing dependency on the forest for food production and income.
2. In order to relieve pressure on the forest resources and reduce conflict, the community, in collaboration with the relevant organizations and government ministries, should strive to provide certain forest resources on-farm.
3. In order to raise the living standards and financial status of the local community thereby reducing poverty and dependency on Mt. Elgon forest resources, agricultural and livestock production technology, enterprise diversification and marketing need to be improved.
4. Alternative sources of income generation need to be identified through education of the communities so that the pressure on land is reduced and that there is sustainable use of Mt. Elgon's resources.
5. Government ministries and organizations, NGOs and other stakeholders should seek the views of the local people as major stakeholders on how to sustainably use and manage the Mt. Elgon resources.

Appendices

Appendix 1: PRA Multidisciplinary Team

| Name | Designation | Address |
|--------------------|---------------------|---------------------|
| Steve Aversa | Facilitator, MEICDP | Box 2578, Kitale |
| Phylis Bugun | LEO, Cheptais | Box 281, Cheptais |
| Janeline Cherotich | CDA, | Kapsokwony |
| Patrick Hayombe | DPPO, Mt. Elgon | Box 116, Kapsokwony |
| Teresa Mugun | LEO | Box 105, Kapsokwony |
| Zipporah Mugonyi | Facilitator, MEICDP | Box 2578, Kitale |

| | | |
|---------------|-----------------------------|---------------------|
| John Nato | DLPO, Kapsokwony | Box 174, Kapsokwony |
| Ndefu | District Roads Officer, ME | Kapsokwony |
| James Omare | DFO, Mt. Elgon | Box 88, Kapsokwony |
| Charles Ouma | Partnership Supervisor, KWS | Box 293, Kapsokwony |
| Benard Owuori | Facilitator, MOA | Box 1781, Kitale |
| Hellen Sikuku | DFEO, Kapsokwony | Box 88, Kapsokwony |
| Peter Wamalwa | DSCO, Mt. Elgon | Box 105, Kapsokwony |
| Susan Wasike | KENGO | Box 2507, Bungoma |
| Wekesa | MoW | Kapsokwony |

Appendix 2. List of Community PRA Participants*

MEN

Stanley Chelimo
 Naibei Masudi
 Kennedy Kipkirich
 Pius Masikini
 Tulmos Naibei
 Peter K. Bera
 Matinda Bera
 Joseph Sitet
 Festo Sirkoi
 Sylvester Belio
 Pius Ndiwa
 Stephen Kiterie
 Yeko Bramwel
 Geoffrey Kibet
 Julius Okimar
 Geoffrey Kiterie
 Andrew Ndiema
 Paul Festo Mnanda
 Denis Kapchanga

WOMEN

Rosemary Nasimiyu
 Helen Cheren
 Pamela Boiyo
 Phanice Ngorom
 Agnes Temko
 Eunice Chesakit
 Elizabeth Kapondi
 Jacqueline Kirong
 Everlyne Sobet
 Mildred Chesang
 Joselyne Dekei
 Rosemary Belio
 Alice Kipkirich
 Doris Cheren
 Janet Cherop
 Mary Pepela
 Violet Kiterie
 Nancy Makan
 Nelly Chesang

Kirong M Masudi
Naibei Sirkoi
Peter Tiriongo
Kintai Bramwel
John Sholey
Patrick Kipsang
Peter Kachiba
Reuben Sobet
Raimond Murunga
Turutea Enock
Stephen Kapchanga
Silas Kangogo
Tiriongo Jafred
Psenjen Cheroben

**Youth included among men and women*

Appendix 3. List of Institutions and Their Organisation and Activities

Institutions

1. Women Groups

- a. Keberen Women Group
- b. Sinendet Women Group
- c. Tete women Group
- d. St Ann Women Group
- e. St Rose Women Group
- f. Chepsogei Women Group

Why the groups were formed (objectives)

- a. Planting of trees
- b. Merry go-rounds
- c. To improve the living standards
- d. Sharing the available resources
- e. Exchange of ideas
- f. Improve personality/leadership
- g. To improve economic status of members
- h. To bring unity among members
- i. To create employment
- j. To enable the group acquire loans or assistance

Activities of the group

1. Merry go-round
2. Joint labour force and leasing of land
3. Keeping of cattle, poultry, etc.
4. Buying of utensils among members (household goods)
5. Planting of trees/nurseries

6. Fundraising - school fees, funeral, etc.
7. Education on health food etc.
8. Management of cattle dips
9. Water and soil conservation management group
10. Road maintenance group
11. Environment and land issues committees.

History of Chemichemi self help group

- Started on 15th Jan 1999.
- Members: 15 - 20
- Member contribution: 120/= twice a month
- Hired one and half acres of land.
- Planted beans
- Planted in one of the member's farm e.g. blue gum, cypress.
- Each member will plant trees at his or her farm.
- They are looking for donors

Responsibility of the chairman

- Calling meetings

LOONG'ETI YOUTH GROUP

- 19 members: 10 men, 9 women
- Started May 1998

Objectives

1. Unity among the youth
2. Self - help
3. To get funds
4. Identify a project

Achievements

- Contributed Ksh. 1,500 per member.
- Opened an Account
- Held a fundraising and collected Ksh 30,000
- They are running a cattle dip
- Money is banked every Monday
- Have Ksh 37,000 in the account

Problems

- Drugs are very expensive
- Cattle very few

SINENDET WOMEN GROUP

- Started 1998
- 20 members.

Objectives

- Merry go-round
- Cattle keeping
- Poultry keeping
- Tree nursery

Achievements

- Prepared a seed bed
- Have a bank account

- Registered the group
- Each member contributes Ksh 50 per month.

Problems

- Poor contributions from members.

Appendix 4. Pair wise Ranking of Non-agricultural Income Generating Activities Appendix 5a. Seasonal Calendar

Information on food availability, fuel wood availability, communication, education, spending patterns, rainfall, family income, weeding, and reweeding was collected but not available.

Appendix 5b. Division of Labour and Among Social Groups, Including Decision Making

Appendix 6. Activity Profiles for Men and Women

Appendix 7. Cost/ Benefit Analysis of Crops Per Acre (Potatoes, Onions, Tomatoes, Cabbages)

Appendix 8. List of Indigenous Tree Species (in Three Languages) Used by the Community

Appendix 9. Indigenous Trees and Traditional Uses of Their Components

Appendix 10. Criteria Ranking Matrix for Exotic and Indigenous Trees

Appendix 11a. Pair wise Ranking of Problems -Men

Appendix 11b. Pair wise Ranking of Problems - Youth

Appendix 12. Options Assessment Charts for Opportunities

Appendix 13. Transect through Kamtyong Sub-Location (Mt. Elgon District)

Appendix 14. Farm Sketches

Appendix 15. Checklist Used by PRA Team Members