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**FORESTS, ADJACENT COMMUNITIES AND FORMAL AND NON
FORMAL INSTITUTIONS INTERACTIONS AND THEIR IMPACTS ON
FOREST CONDITION: THE CASE OF KEDOWA BLOCK, WEST
MAU FOREST.**

SITE REPORT

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1.0 INTRODUCTION

Southwest Mau forest is one of the remaining natural forests in Kenya. This forest complex plays a significant role in water catchment, feeding the major rivers and streams that make up the hydrological systems of Lake Victoria. In addition, it is a reservoir of unique biological diversity. However, the Mau forest Complex has been under constant pressure by adjacent communities and emigrants from other areas who have settled. The new settlers are clearing land for subsistence agriculture, removing remnants of the forest and opening up new forest areas through non resident cultivation. These activities are jeopardizing the integrity of this forest to provide the essential role of regulating the flow of water to Lake Victoria, thus affecting downstream areas. This forest contributes directly and indirectly to the livelihood of the local forest adjacent communities.

1.1 Kedowa Forest Block

The site, Kedowa forest block is located on the slopes of West Mau forest at latitude 00 13' 29"S and longitude 035 34' 07" E at an elevation of 2295 m a.s.l (Fig. 1). The site is characterized by dry riverbeds, which are said to have had water about 15 years ago. The Kedowa forest block occupies 250 ha. (620 acres) and is divided into 2 management units of unequal size; the indigenous forest for protection of water catchment areas and the plantation forests for production of timber, poles and fuelwood. The Forest topography is mainly rolling terrain with some steep portions. Originally, there was a system of regeneration and harvesting that used to rotate through these units. But the regeneration system has been halted due to lack of funds, personnel and political interference's among many factors. The official legal designation of this forest is a Government Forest Reserve for water catchment protection and plantation for productive forestry.

1.2 The current Forest Status, Problems and Opportunities

According to the FD official in the area (DFO), The vegetation and species diversity in the forest is largely simple and the subsistence and commercial use of the forest is minimal. Although the forest is legally registered as a forest reserve where human activities are controlled through enactment of rules and regulations, there have been cases of illegal encroachment and harvesting of various forest products.

Over the past 5 years, the density of trees, shrubs and ground cover have decreased due to over-exploitation for timber, charcoal making and khat/miraa harvesting and overgrazing of bushes. Over the same period there is notable decrease in forest coverage because of excision by the government for settling the residents.

The residents have used a lot of poles, posts and timber from the forest in the reconstruction of new houses and fencing the farms.

The challenges facing the forest according to the official are:

- ◆ Non-resident cultivators destroying planted seedlings.
- ◆ Arson fires from (honey harvesters, grazers and non-resident cultivators).
- ◆ Illegal harvesting of cedar trees for making posts.
- ◆ Lack of personnel resulting from recent government retrenchment Programme.
- ◆ Lack of funds for operation and patrol of the forest.

In spite of the outlined problems, the forest still has potential and opportunities. These are:

- ◆ Increase acreage of plantations given more funds
- ◆ Additional staffs for labour intensive activities such as thinning, pruning and weeding.
- ◆ Involvement of non-resident cultivators and other local people in the management of forests.

1.3 Tachasis Settlement

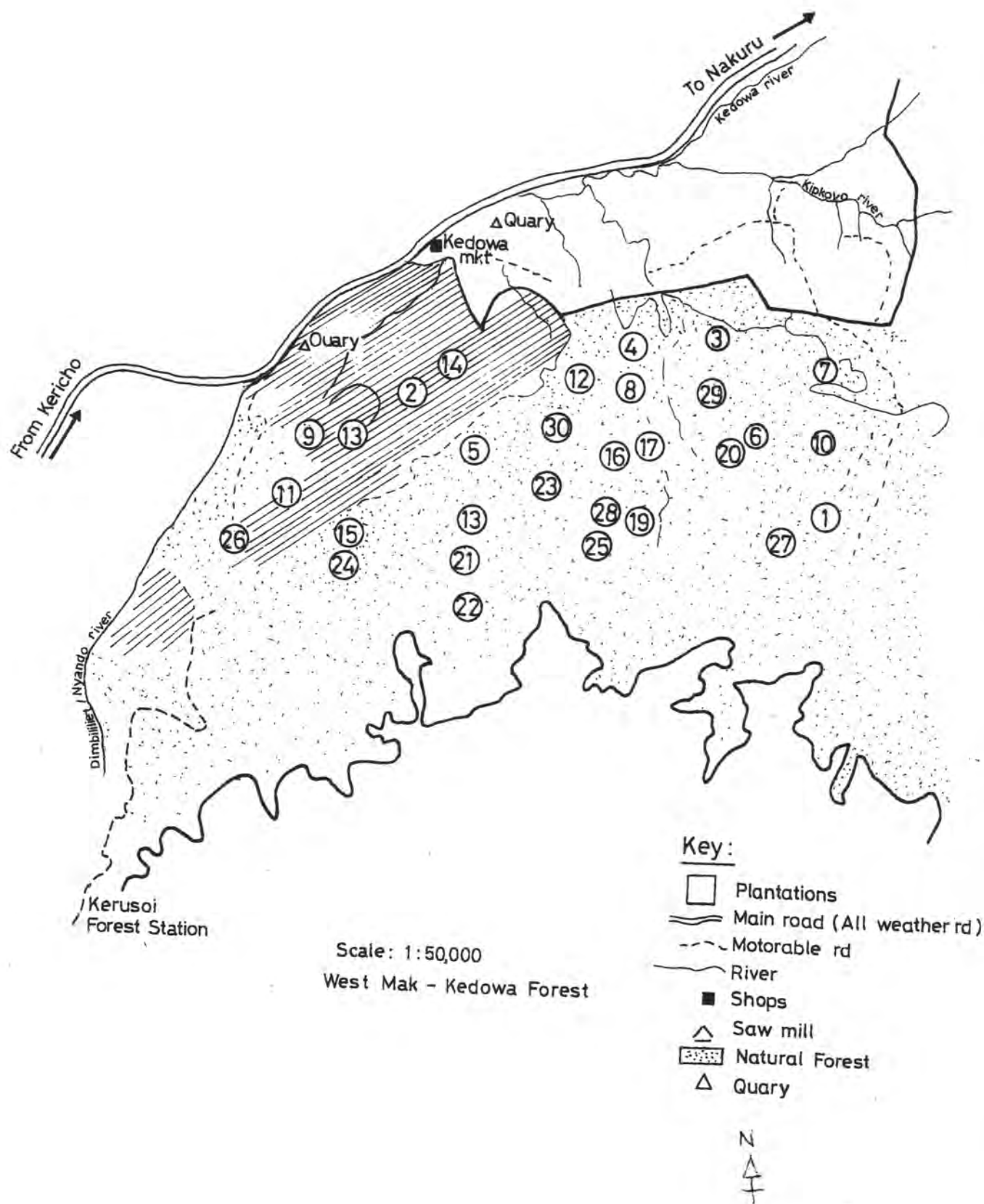
Tachasis is the settlement close to Kedowa forest block. It is located in Kedowa Sub-location, Londiani Division, Kericho District. Gentle and steep slopes characterize the settlement area. The total population of the settlement is estimated at 1580 individuals from about 220 nuclear families, housed in approximately 200 households. The residents derive most of their basic income from subsistence farming. Since the settlement borders the forest, there is evidence of encroachment accelerated by non-resident cultivation. The residents depend almost entirely on the forest for grazing their livestock, water for domestic use and for other products and services. Some people engage themselves in charcoal making, harvesting poles and posts as well as harvesting *catha edulis* (khat, miraa) for sale. The Kipsigis are the most predominant ethnic group in this area and accounts for about 70 % of the residents. The rest are Kikuyus, Kisiis and minority group (Luo, Ogiek) which form 15 %, 10 % and 5 % respectively.

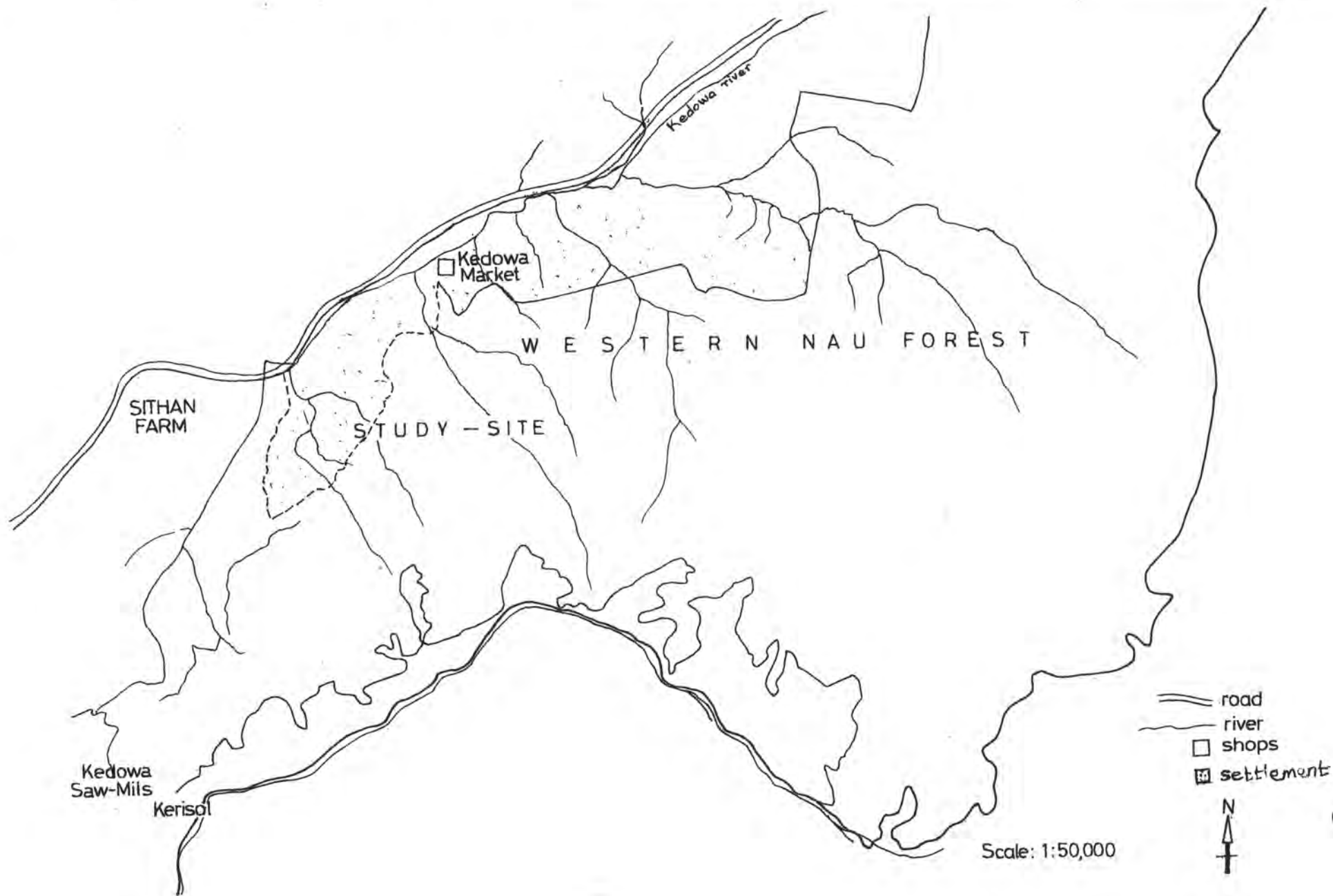
2.0 FIELD METHODS

This being an IFRI study site, full IFRI research tools were used to collect socio-economic and biophysical data. The socio-economic data was collected using PRA tools such as individual, group interviews and simulated games.

Due to the differences in vegetation and management practices in the forest, the plots were established to cover each vegetation and management type. The plots in each category were allocated based on the proportional coverage (size of each stratum, using UTM Grids). From the map, the planted areas covered 7.5 grids of the total 28 grids. Therefore the number of plots located in the planted forest

Fig. 2: Kedowa Forest map showing the sampled plots





3.0 PRELIMINARY FINDINGS

3.1 Forest Governance

The Forest Department (FD) governs Kedowa forest. The activities of the FD in this forest include coordinating, modifying and passing rules on seedling planting, other maintenance activities, distribution and sale of forest products to local users and determining the season and quantity of forest products harvested. The FD also determines type of technology used to harvest certain forest products, who is authorized to harvest and can sell rights to harvest forest to others. It can also rent nontransferable rights to harvest forest products, monitors forest condition, conformance to rules, sanction rule breakers (e.g. fines, punishment), arbitrate disputes among local users and interact with higher authorities.

There are no reported conflicts between rules created by this organization and those of forest associations(s). Internally conflicts in the organization itself are resolved by issuing warnings, dismissals and arbitration to the affected parties, or they may also be sacked. Members of user groups express their needs and concerns to this organization through, formal petitions, formal hearings, demonstrations, general meetings, illegal exchanges with officials, or other means (appeals and application of licenses or permits).

The office-holders of the organization carry out tasks themselves. Non-forest users fill the forest decision-making positions. An external or higher level authority can remove decision-makers in response to user complaints. The decision-makers of this organization cannot be removed by users and that the activities of this organization are supervised by government officials.

The organization provides the following information to forest users on a regular basis; technical information on silvicultural techniques and fodder crops availability.

3.1.1 Officials and functions

The organization has had three leaders in the past 5 years all of them males. 198 employees work for this organization on a full time basis, 30 on part time basis and 10 as volunteers. Full time employees are actively in the daily running of the FD activities such as office work, supervision, maintenance, policing etc while part time employees are usually casuals/ volunteers involved in heavy duty work such as pruning, thinning and weeding.

3.1.2 Resource mobilization and account keeping

The major financial sources for this organization are, payments that substitute for labor, fines, national or regional government, development agency, sales of forest

products from the forest, special levies, aid from external NGOs, and foreign governments.

The total budget for the organization in 1999 was Ksh. 800,000. The organization could not support its expenditures without external aid. FD maintains records of its accounts, which are audited and supervised.

3.1.3 Collective and constitutional choice processes

FD has a charter of mission and objectives that were developed through suggestions from the organization and stakeholders, then legalized through parliament as a bill, which was then established as law. FD is a corporate body, which can sue or be sued. The rules created by FD are enforced by both the FD and external officials appointed by the government.

3.1.4 Forest access rules and regulations

According to FD rules, anyone can use this forest for non-consumptive purposes if he/she is a citizen of this country, resident of Kericho district, or lives in a nearby village.

- ♦ Fuelwood collectors - should collect dead materials and not cut live trees
- ♦ Honey collectors - No special rules.
- ♦ Grazers - Restricted on taking goats into the forest but can graze cattle anywhere.
- ♦ Non-resident cultivators are allowed to cultivate only annual crops in specific areas and should not to cut trees or construct living structures. There should also be no cultivation on steep areas and along rivers.

3.1.5 Rules related maintenance of forest

The Forest Department controls maintenance / Improvement activities of the forest, infrastructure improvements, types of seedlings or seeds that can be planted, amount of wild game that can be trapped or killed (KWS), when and where fires may be started and the methods of weeding to be done in the forest.

3.1.6 Penalties applied

Verbal warning can be used if rules are broken for the first time, cash fine less than 1 day's work can also be imposed if the offence has been committed for the second time. Additionally, a discretionary decision by government office can be taken if the offence is committed many times. It is important to note that the penalty to be imposed depends on the kind of offence. In some cases, a harsh punishment can be imposed even if the rule has only been broken for the first time. If an offence has been committed, a government official in an administrative setting or a judge in a formal court setting decides on the penalties to be imposed.

If a fine is imposed, a government official in the forestry department or in an administrative setting collects it. The collected fines are used as a general source of revenue for national government. In most cases users do not pay fines. Government officials keep record books of the offences and penalties imposed.

3.2 Organizational Inventory and Inter-organizational arrangements

3.2.1 The Kenya Wildlife Service (KWS)

Several organizations are involved in the management and governance of West Mau forest. These include the Kenya Wildlife Service (KWS) whose major activities are to protect the forest and enforce rules on conservation and preservation of wildlife. KWS is not actively involved in planting and other maintenance of the forest activities such as harvesting / using or selling of forest products.

3.2.2 The African Highlands Produce (AHP) Company Limited

AHP is involved in raising plantations of cypress and eucalypts to provide wood for the tea factories in Kericho. The company is not directly involved in the management or the governance of the forest.

3.2.3 Forest vigilante groups activities

These groups are primarily involved in ensuring that all the residents are treated fairly in relation to allocation of forestland for non-residential cultivation. They are not involved in other forest management or improvement activities. They were formed after the tribal clashes of 1991/92.

3.2.4 Council Environment Committee (Kericho County)

The council is not actively involved in the management or governance of the forest, although it has expressed interest in getting some forestland for unknown reasons. Currently there is tension between the council and the FD.

3.2.5 Lake Victoria Environment Management Programme (LVEMP)

The Lake Victoria environment management Programme is indirectly involved in protecting the forest and enforcing the rules. This is because they view the West Mau forest ecosystem as important to the proper functioning of Lake Victoria ecosystem.

3.2.6 OGIEK Welfare Association

The Ogiek welfare association is involved in protecting the forest and also harvesting forest products. They also do plant and maintain trees.

3.2.7 Non-resident cultivation committee

Non-resident cultivators become involved in planting seedlings in the forest only recently. Although they claim to protect the forest and enforce rules, they are also involved in other illegal activities such as charcoal making and khat harvesting both of which are destroying the forest. They are also involved harvesting other products from the forest.

3.3 Inter-organizational Arrangements

There is coordination among organizations that govern Kedowa forest block as shown below:

- ◆ The (KWS) and FD have a memorandum of understanding on the management of the forest. This has been facilitated by Forest Action Network (FAN).
- ◆ The FD, Lake Victoria Environment Management (LVEMP) Project and the Kericho County Council request for funds used to rehabilitate degraded sites.
- ◆ FD, KWS, Kenya Forestry Research Institute (KEFRI), FAN and Ogiek group on share and exchange information indigenous knowledge research work.
- ◆ The FD, KWS, Provincial administration and local vigilante group patrol the forest.
- ◆ FD, KWS, Provincial administration and AHP have been creating awareness on the need to conserve these forests.

However, conflicts currently exist between FD policies and user groups' wishes. For example the Ogiek have been traditional users of the forest and do not approve tree felling, establishment of plantations of exotic trees and excision of some forest areas that were under traditional management. The Ogiek would like the forests to remain intact and their traditional methods of usage are reinstated under their welfare association. The Forest Department and Kenya Wildlife Services are against the group hunting activities and honey gathering.

3.4 Inter user group Arrangements

No user group has harvesting advantages over all other groups. Harvesters from different user groups do cooperate with one another although some conflicts do occur. Conflicts may lead to delays in implementation of projects. Some privileged groups also interpret presidential or ministerial bans to suit their interest in the forest. Some users may deny others from using some areas of the forest due to their cultural or political background.

4.0 SETTLEMENT-FOREST RELATIONSHIPS

4.1 Tachasis Residents

There are about 1580 individuals living within 5 km from the forest. The 200 households have 800 females, out of which 600 are female children. Males are approximately 790 out of which 550 are male children. In the settlement, about 5 individuals from 5 households work outside the settlement on full time basis. Two are women and three are men. About 1200 individuals from the 200 households depend on forests for subsistence. Five resident individuals are known for commercial exploitation of the forest. Generally most households depend entirely on the forest for grazing their animals.

The Tachasis residents define wealth as a person having over 5 acres of land, which can produce sufficient food for the family and has surplus cash, own a permanent house and many heads of cattle in addition to running a business or a vehicle. The residents also define a poor person as one who is physically disabled or unable to meet basic needs such as food, shelter, education, clothes and often landless.

There are about 5 wealthy households and 20 poor households. About 190 households legally own agricultural land. Twenty households own land but cannot meet their subsistence needs, while 50 households produce surplus food; primarily grains. All the people consume their own food reserve for at least 10 - 11 months in a year and use wood for cooking.

4.2 Socio-economic Status

About 1425 individuals are literate. One thousand and two hundred, 250 and 10 individuals have attained primary, secondary and college education respectively. About 80% of the members own pieces of land. Most people gain their livelihood through subsistence farming, livestock keeping and /or small businesses. Some cut and sell poles and posts from the forest, and sometimes make charcoal. The *miraa* trade is growing and some households are beginning to earn some money from it.

The most common combinations of occupations are:

- Farming/livestock keeping; Farming/Small business,
- Small business/charcoal making/poles & posts harvesting,
- Small business/Farming/Sale of Miraa /Charcoal making.

The effects of the 1991/2 land clashes, which left many people homeless is the major conflict that changed the overall population and social structure of the residents. Most of the residents currently in Tachasis originated from other parts of

the country (Laikipia, Nyandarua and Narok districts) and were offered settlement in Tachasis in exchange with the Kikuyus and other tribes who used to live in Tachasis and have since left.

Some residents reported that the charcoal makers and khat (miraa) harvesters are destructively using the forest because they cut whole trees. Others take goats into the forests, which is not allowed. The situation is complicated by the fact that those involved are jobless and must feed their families. Most individuals insist that they should earn a living from the forest.

4.3 Residents Activities in the Forest

They are legally allowed to harvest trees, bushes and grasses after paying for a license. They do not have a right to harvest wildlife. The most important product to them are trees most of which are harvested for firewood for cooking and heating. The major species used are *Olea africana* and *Juniperus procera*. Others include grasses (fodder for livestock and thatching) and medicinal plants.

The forest also provides water, building stones, honey and wild fruits. They harvest poles and posts for household fencing and construction and use the forestland for non-residential cultivation where they plant some crops such as maize, beans and potatoes. In addition they use the forest for cultural purposes such as circumcision rites.

The residents of Tachasis settlement are socially cohesive society. The forest supplies 80% of the residents' need for fodder, 100% for fuelwood, 90% for housing timber, 5% for biomass-green manure as farming inputs, 5% for food and 60% for medicines.

According to the residents the forest condition has deteriorated. For example *Prunus africana* used to be abundant but now only few trees are available. The residents raised the following concern about the state of the forest in the next five years.

- ♦ There is poor rule enforcement and laxity among the forest guards.
- ♦ The Forest Department is not following laid down management guidelines such, as no cultivation should be allowed along rivers. Revised management plan lacking and non-adherence to management guidelines.
- ♦ Illegal and destructive harvesting by charcoal makers and khat harvesters
- ♦ The forest guards lack of facilities for effective control.
- ♦ Quarrying in the indigenous forests (destroying trees).

However the residents feel that the forest:

- ♦ If protected well, the forest resource can regenerate itself.

- ♦ The communities feel that it is important for water and a source of fodder for animals.
- ♦ Formation of vigilante groups indicates that the residents are willing to participate in forest management.

5.0 FOREST PRODUCTS

5.1 Firewood

The forest act allows the residents to collect firewood from dead and drying parts of the trees. Firewood is mainly for domestic use and is available for 6 – 12 months and access is all year round. Firewood is measured in headload and the village unit price is Kshs. 20 while it is Kshs. 10 more at the nearest urban centre. The total amount of firewood collected by the residents could not be obtained because there are no official records. The residents revealed that all the household's (200) collect firewood from the forest and pay the money (Ksh 39 per month per household) directly to the forest officials and no receipts are issued. No records available from the FD offices for the last 2 years. The closest substitutes for firewood is charcoal which, is easily obtained from charcoal makers in Kedowa forest. Only few individuals can afford to buy charcoal.

The residents are only allowed to use *pangas* to cut dead and dying branches. They however, use axes to cut bigger logs. They are also allowed to use human transport only to transport firewood from the forest.

5.2 Khat (miraa)

Currently there are no rules governing khat harvesting from the natural forest. This group harvests twigs from *Catha edulis* primarily for sale in the urban centres e.g. Kericho, Nakuru and Nairobi where the demand is high throughout the year. At the moment the product seems available for this full year. The unit used to measure the quantity of this product is bundle (100 to 150g). In local currency, monetary value for 1 unit is Ksh 12 while in the nearest market it costs Ksh. 50. There is clear exploitation in this trade because the residents seem unaware of the market price that fetches between Ksh 400 - 500 for the same unit in Nairobi. There is no information to indicate how much has been harvested from the forest since the trade is illegal. Like the stone mining, the miraa harvesters seem well protected by the administrative authorities. The group uses axes and *pangas* to cut down the trees and then manually pluck the desired twigs.

5.3 Grass

Grazing in the forest is allowed after payment of Kshs. 30 fee per animal per month. Due to overgrazing and drought, the grass is available only during the wet seasons, which last for about six months.

Records are missing from the FD offices on the number of animals that graze in the forest although the officials of the local cattle dip report that there are at least 100 heads of cattle in the settlement. The closest substitutes for grass are nappier grass, dairy feed supplements, shrubs and maize stover. Most individuals can afford nappier grass, shrubs and maize stover but only few people can afford animal feed supplements from the market.

5.4 Charcoal

The nature of user group's claim to this product is contrary to the forest act. It is banned by the FD and is therefore an illegal activity. The major tree species utilized are *Olea europea sub sp. africana*. Charcoal is mainly for sale in the local and distant markets. Charcoal making is done throughout the year although the group prefers to do it during the dry periods (six months in a year). Charcoal making is a serious threat to the forest because it has been the cause of many forest fires. The unit used to measure the quantity of this product is in 20-kg tin or sack. At the time of the survey, one sack of charcoal was selling at Kshs. 150 at forest gate and Kshs. 200 at the nearest centre. It is difficult to estimate the amount of charcoal produced at any given time because the charcoal makers undertake the activity illegally. The closest substitutes for charcoal are firewood, gas and electricity. While most people can afford firewood from Kedowa forest, other government forests, or through agro-forestry production, gas and electricity is not easily affordable by most people in the settlement.

During charcoal making, most users cut down trees and let them dry adequately. The trees are then cut into suitable sizes and placed in charcoal kiln. The individuals use tools such as axes, power saws and sometimes *pangas* that are all not allowed by the FD unless licensed.

5.5 Medicinal plants

The residents have had a long traditional user right of this forest resource. Medicinal use of these plants is supported by the current forest act for domestic use. Medicinal plants are usually available for half a year (during the wet seasons). There are no established units to measure quantities of medicinal plants. Users just collect the amount they need (roots, barks or leaves of various plant species). Consequently there are no known units for measuring medicinal plants. Like the other products, information is missing on how much is collected from the forest on a regular basis. Users however confirm that especially fires, drought and the current increasing trade in medicinal plants have drastically reduced quantities of medicinal plants. The closest substitutes for this medicinal plants are conventional medicines from health clinics (locally and external) which not easily affordable by most residents.

Usually most individuals use knives, axes, *jembes*, for breaking and uprooting plants during medicinal plant harvesting.

5.6 Building Stones

The nature of user group's claim to this product is by right, as established by law and the stones are for sale. Although the user group has a legal right, 90% are mining stones (granites) illegally. Only one has paid for the permit and then he sub-contracts the others illegally thereby making more money. Currently stones are available the whole year. Stones are measured in terms of volume (lorry load) or length (meters or feet).

One lorry load (450 ft) is valued at Ksh 4,000 in the settlement while in the nearest market it is valued at Ksh 5,000. Again there is no clear information on the amount of stones that have been mined by the 20 stone miners. But at least each one of them may process for up to 100 feet per day (Kshs 900 per day). The closest substitute for stones is timber that is easily obtained from Kedowa forest or other government forest(s) or from trustland. Most individuals remove the topsoil manually, and then use stone, blasters to break the rock into smaller pieces during mining of stones. They then use tools such as mattocks to break the stones into suitable sizes.

5.7 Rules for harvesting/ mining the products

5.7.1 Firewood

The FD allows each household to collect a headload of firewood per day after paying Kshs. 39 per month. By tradition only females (women and girls) collect firewood although young boys may be sent by their mothers to help collect firewood in designated areas and at the specified period (6.00 am to 6. 00 p.m.). Only human transport is allowed. The harvesters have rights to harvest alone or in-groups. There are no rules to guide processing of firewood.

5.7.2 Miraa / Khat

This is a new activity in this forest because the khat trees in the major khat growing areas (Meru) have been affected by the current drought. The problem is that more people are turning into the activity to earn extra income. This is an illegal activity. Furthermore the FD had not expected people to harvest khat from the forest, consequently there are no rules or restrictions on the quantity of the product that can be harvested.

5.7.3 Grass

Although legally there are restrictions on the quantity of the product that can be harvested, it is difficult to control the amount of grass that can be consumed by the animals. Cattle owners are required to take their cattle in to the forest between 6.00 am and 6.00 p.m. and only in designated areas. This is however rarely followed

because people neither pay for the permit nor restrict themselves to the designated areas.

5.7.4 Charcoal

The FD has banned charcoal making.

5.7.5 Medicinal plants

The FD has no established formal restrictions on the quantity and the type of harvesting technology of medicinal plants that can be harvested. Culturally there were rules that used to govern medicinal plant harvesting and only respected herbalist used to do the harvesting. Currently many people are involved in the sale of medicinal plants. Users do not follow the cultural ethics. The trade is threatening many species of trees, shrubs and herbs.

5.7.6 Building Stones

The FD permit restricts the quantity of the product that can be harvested by individuals. However the FD has not effectively done so due to lack of surveillance and rule enforcement in the quarries. More users are involved other than the registered ones.

6.0 FOREST-USER GROUP RELATIONSHIPS

The main products harvested from the forest are poles, posts, thatching materials, fodder trees, building stones, water, wild meat and other services such as water catchment, sacred groves and food. Three major user groups all nascent were identified from the settlement. These were charcoal makers, khat/miraa harvesters and stone miners.

6.1 Kedowa Charcoal Makers user group

On average individuals live within 5 km from the forest. The group is allowed to harvest trees, bushes and grasses after paying for a license. They also have a right to collect water but are not allowed to make charcoal and harvest wildlife.

The group operates illegally and involves about 70 individuals from about 70 households, all males. About 60 individuals live outside the settlement (market center) and only 10 live within the settlement. The members depend on the forest for subsistence and commercial activities.

The most important product to this user group are trees most of which are harvested for charcoal making, poles, posts and firewood. The major species used are *Olea africana* and *Juniperus procera*. Other products are water for domestic and livestock, grass for fodder, honey, wild fruits and for cultural use.

The forest provides an estimated 90% need for fodder, 90% fuelwood, 60% housing timber, and 5% food. This group seems satisfied with the level of conservation in this forest (happy with the lack of surveillance and enforcement of rules). The group expresses concern over diminishing resources for charcoal making and are willing to participate in reforestation.

6.1.1 Socio-economic status

The user group defines wealth as being in formal employment, owning a shop, owning over 5 acres of land, cars and have disposable income. The user group defines poverty as someone who has no regular source of income, no land and is not able to meet the day to day basic needs of his/her family. From the above definition, none of the user group members is regarded as wealthy. There is no great difference in wealth among households of this user group. About 10 households own agricultural land but the land cannot meet subsistence need. Sixty households produce surplus food, mainly grains. Most members consume their own food crops for at least 10 months and use wood for cooking.

All the 70 individuals in user group are literate. They have all attained primary level education while 30 individuals have attained high school education. About 2% of the user group members are tea stall owners, 30% farm their own land, 60% rent forestland for non-resident cultivation and 8% are posts & pole harvesters.

The most common occupations in this usergroup are:

- Farming/small shop owners;
- Farming/livestock keeping

Over the past two years, there have been issues that have created conflict within the user group and the Forest Department. The FD and most of the area residents regard the activities of this group as illegal. The settlement residents feel that they are destroying the forests and sometimes cause fires in the forest.

6.2 The Khat (miraa) Harvesters user group

Members of this group live between 1-5 km from the forest. They are free to use the forest for water harvesting but are not allowed to harvest trees and bushes without license.

This user group is regarded as illegal. It involves about 300 individuals from 150 households (250 males and 50 females). There are 100 male 25 female children. Fifteen households have members who work outside the settlement on a part time basis and none of them are women. All the 300 members depend on forests for subsistence. Two hundred individuals depend on forest for subsistence and commercial activities and graze about 300 heads of livestock in the forest.

The most important products to this user group are trees in particular *Catha edulis* from which they harvest only the young twigs. Besides khat harvesting, the group

members also harvest other tree species for timber, poles, posts, and medicines. The major tree species used are *O. europea sub sp. africana* and *J. procera*. Other important products for this group include water for domestic and livestock use.

The forest supplies about 90% of the user group's need for fodder, 100% for fuelwood, 90% housing timber, 10% for food and 90% for cultural rites and medicines.

The most serious problems that the forest managers and users face in the next five years (as described by members of the user group) are:

- ♦ Decrease in tree quantity and diversity.
- ♦ Rivers are drying up.
- ♦ Less grass for fodder.

The greatest opportunities they face in they face in the next five years:

- ♦ Recognition of the importance of the forest by the users.
- ♦ Involvement of the users in the management of the forest
- ♦ Improved monitoring and rule enforcement through vigilante group formation
- ♦ Evidence on farm of tree planting to reduce dependence on the forest
- ♦ Adoption of energy saving technologies

6.2.1 Socio-economic status

This user group defines wealth as having surplus cash of money, permanent house, owns businesses, car(s), many heads of cattle (over 50) and extensive land. The group defines poverty as a person who is unable to meet the basic necessities of life such as food, shelter, education and clothing. From the definition, none of the usergroup members is regarded as wealthy. There is no great difference in wealth among households of this user group. One hundred and twenty households own agricultural land and 5 households own land but cannot meet subsistence needs. Eighty households produce surplus food, mainly grains. Most of the households that sell grain consume their own food throughout the year and use wood for cooking. All the (300) individuals in user group are literate; 150 have passed primary school, while nine have passed high school. None is college educated.

About 80% of the members own land (1 - 2.5 acres) and also rent land from the FD for non-residential cultivation. They plant crops such as maize, beans and potatoes for domestic consumption, and for sale. They also harvest khat for sale. About 15% combine farming with livestock keeping. Livestock usually depend on fodder from the forestland. An estimated 5% combine charcoal making with other small businesses such as tea stalls and green grocery shops. Some also mine stones from the quarries.

The most common occupations within this group are:

- Farming/livestock keeping;
- Charcoal making/quarrying/small businesses at the market

Over the past two years, conflicts have emerged within the user group and other organizations /groups such as the FD which regards them as very destructive harvesters. Those residents who do not harvest khat also reported that this user group is destroying the forest. The conflicts have not yet been resolved.

6.3 The Stone Miners user group

On average individuals live between 1 and 5 km from this forest. The group also has a right to harvest water from the forest. They also get harvesting rights to harvest other products from the forest if they purchase the required licenses. The group enjoys patronage and protection from the local administration and FD orders (rules) are ignored.

This group has no formal organization although one person has been licensed to mine stones. A total of 20 people are actively involved in stone mining without licenses. The group is comprised of 20 individuals from 20 households, all of them males. Five households have members who work outside the settlement (2 on part time basis and 3 full time) all of them males. All the individuals depend on mining stones in the forest for subsistence and commercial activities. 15 individuals also farm and graze their animals in the forest.

The forest provide stones for building as source of income to this group besides other products such as water, fodder (60 %), building timber-poles and posts (40 %), fuelwood (95 %), charcoal, honey, medicines (70 %) and land for agricultural crops (15 %).

The most serious problems forest managers and users face in the next five years (as described by members of the user group) are:

- ♦ There are several footpaths that have been created in the forest, which leads to poaching of the user stones.
- ♦ There are some people who have been subcontracted to mine. This leads to the reduced profit margins.
- ♦ Over-exploitation of the forest.
- ♦ Non-compliance to regulations for stone mining.

The greatest challenges they face in the next five years:

- ♦ They are not updated on revised quarrying rules. There is need to develop a channel to exchange information between them.
- ♦ They need to be involved in construction of roads and gates to the forest.

- ♦ Quarrying impacts assessment.

6.3.1 Socio-economic status

Within this user group a wealthy person must have many heads of cattle, have a permanent or semi-permanent house, surplus cash, at least 2 acres of land and or small businesses such as tea stalls, kiosk or shop. The group defines poverty as lack of basic necessities of life such as food, clothing and shelter. Within the group the members are neither poor nor rich. Consequently there is no significant difference in wealth among households of this user group. All the 20 households' own agricultural land, which meets all their subsistence needs. Five households produce surplus food, mainly grains. All the households sell grains and consume their consume food reserve for 11 - 12 months in a year and use wood for cooking. All the 20 individuals in user group are literate, having passed primary school and 15 have passed high school. None of them is college educated.

The most common occupations are stone mining /farming /small businesses.

Over the past two years, there have been some issues that have caused conflicts in the user group and other groups. These include the FD because 19 of the members are mining the stones illegally.

6.4 Forest rule making and forest improvement by the user groups

None of the user groups (Tachasis residents, Charcoal makers, Khat/miraa harvesters and Stone miners) participate in rule making regarding forest use. They have not planted seedlings, trees and bushes to improve the forest condition, neither have they built protective fences or barriers or cleared undergrowth. In the past year, the user groups have also not removed forest encroachments, created nurseries, removed leaf or needle litter, sought help from external authorities, or reduced medicinal plant harvesting. Further they have not adopted more efficient wood stoves, pressure cookers, adopted other technologies, invested in bee keeping techniques, planted seedlings that alter species mix or adopted other improvement technologies.

6.5 USER GROUPS' LIVESTOCK INFORMATION

User group	Livestock type	Rank	Total No.	No. Graze in forest	No. Fed by forest fodder
Tachasis residents	Cattle	1	90	90	0
	Goats	2	150	150	0
	Sheep	3	100	100	0
Charcoal burners	Cattle	1	0	0	0
	Goats	2	0	0	0
	Sheep	3	0	0	0
Khat (miraa) harvesters	Cattle	1	80	80	0
	Goats	2	70	50	20
	Sheep	3	50	50	0
Stone miners	Cattle	1	25	25	0
	Goats	2	15	15	0
	Sheep	3	30	30	0

7.0 COUNTRY VISION FOREST ASSOCIATION

There is one recently formed forest association called Country Vision. It is composed of young school leavers who came together to raise awareness on forest conservation and also to keep themselves busy. The members also do other volunteering jobs in the World Visions offices at Kedowa centre. This association is young and only six months old since inception and has not made a noticeable impact on the ground. Their major activity involves establishing a tree nursery but hope to be actively involved in forest surveillance and policing and other environmental conservation issues.

7.1 Governance and structure

There is an Executive Committee (EC) for the Association. The membership breakdowns are 3 females and 9 males. Members regularly elect the EC members. The committee or administrative body meets every 6 months or more.

Committee member terms:

Chairperson:

V. Chairperson: [All fixed period of one year and can be re-elected]

Secretary:

Treasurer:

Other members:

No forest user has held a position on this committee or a representative body. There has never been competition for positions on this committee or a representative body. It is not possible for users to expel members but errant members can be expelled by administration with recommendation of the members.

7.2 General membership of the association

Meetings are not held where all members of the forest association can participate all the time. General meetings are held once a year and almost all members attend the meetings. Members cannot call a meeting when they want to discuss a problem. The executive committee has not changed the organization's rules or rules on the allocation of forest products as a result of member suggestions. The association maintains records, and formal audits have not been performed on these records. The forest association has no influence over the forest rules and governance.

7.3 Staff and officials

The association has no full time employees. There are 8 part time/volunteer association employees who mainly engage in raising seedlings. The association has no forest guards.

7.4 Resource mobilization and account keeping

The major financial sources for this association during the most recent year are through voluntary contribution of funds and membership fees.

7.5 Rule making in the organization

A written statement of the association mission and objectives exists. The rules of this association are based on an original set of rules provided by a government agency. To change the mission statement an extraordinary majority is required.

7.6 Internal relations

No internal association conflicts have been reported. The members resolve internal conflicts. There have been no problems in selecting association officials. The association members and officials enforce rules of the association. This association perceives itself as a forest governing structure which, cooperates with other actors but is independent of other organization rules. It is therefore an independent body formed by members but it is linked to other government organizations' such as the Forest Department (FD), the local council and the Chief's office.

7.7 Performance

The members are satisfied with the rules since none has been disadvantaged by rule application.

8.0 KEYS ISSUES IDENTIFIED

- ◆ Most preferred use of the forest and its impact on forest condition (Grazing, charcoal, Miraa)
- ◆ Degradation of catchment areas (indicators; drying rivers and streams)
- ◆ Institutional capacities.
- ◆ Habitat destruction (Indicators; few wild animals)
- ◆ Community participation in forest protection (indicator; vigilante group formation)
- ◆ Possible involvement of other stakeholders in management of the forests (e.g. neighboring tea companies, LVEMP)
- ◆ Quarrying and impact on forest condition (Site rehabilitation)
- ◆ The settlement changes resulting from 1991 / 92 land clashes impacts on the forest condition.