

Crop Post Harvest Programme (CPHP)

Rural Transport Services Project for Kenya



**Rural
Transport
Services
Project:
Household
transport
patterns in
study areas
and the
gender
livelihood
and socio-
economic
implications.**

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RURAL TRANSPORT SERVICES PROJECT

HOUSEHOLD TRANSPORT PATTERNS IN STUDY AREAS AND THE GENDER LIVELIHOOD AND SOCIO-ECONOMIC IMPLICATIONS

PROFILE OF THE STUDY AREAS

The five zones where this study was conducted provide widely varying situations in regard to population densities, economic activities, household transport patterns and access to means of transport, proximity to different economic and social services, etc. among other situations. Despite the differences in contexts, it is possible to highlight key generic characteristics regarding households' transport needs that seem to cut across the different areas. While this report will attempt to give an overview of issues that seem to apply to different areas, more attention is given to the particular issues that have been observed in each of the study areas.

The first section of this report provides an overview and profile of each of the study areas including the general household socio-economic characteristics. The second section presents the key contextual gender issues and factors that may have direct and indirect bearing on household transport patterns as well as the role of men and women in undertaking various transport activities. The third section gives an overview of socio-economic context at the household level, with a focus on access to means of transport and gender division of labour. The fifth and final section provides a synthesis of the key issues arising out of the study areas that need further investigation and strategies for intervention.

KEY SOCIO-ECONOMIC FEATURES

Lari Division

Lari Division is a resettlement area located in Kiambu District in Central Province of Kenya. Lari division occupies 564.7km² and the divisional headquarters lie about 45km North-West of Nairobi. High rainfall, moderate temperatures and rich volcanic soils make the area ideal for dairy and vegetable farming.

Smallholder agriculture is the main source of livelihoods for households. Average land holding is 2.5 acres. Most households combine subsistence production with small-scale commercial production. Main crops grown are cabbages, kales, carrots and potatoes. Smallholder dairy farming is also practiced in this area. Lari Division is part of an extensive belt extending up to the Aberdare Ranges that is regarded as a key source of food for the urban markets of Nairobi, Thika and Mombasa.

The division has a total population of 111,302 people, a density of 219 persons per square km, and a total of 25,438 households according to the 1999 Population and Housing census.

Basic Services in Lari: Compared to other rural areas in Kenya, there is a reasonable level of basic services in Lari-Division- although not as well developed as the rest of Kiambu District within which the division falls.

Water: There are surface and sub-surface water sources in the division. These comprise of many permanent rivers, wells and boreholes that are well distributed within the division. Generally water is within easy access in most parts of the division. However, the water resources have not been well developed as a result of which 50%/half of the households are said to have no access to safe drinking water.

Education Facilities: The division is reasonably well served by educational services. According to statistics from the District Education Office, the division has 50 primary and 17 secondary schools in addition to three vocational training institutions.

Health facilities: There is one fairly modern hospital in the division, 8 health centers, 13 dispensaries and 7 clinics.

Market centers: The area has numerous market centers offering different types of commercial and administrative services. The main market centers include Kimende, Kijabe, Uplands, Soko, Kirenga, Kagwe and Kamburu.

Table 1: Average household proximity to selected services in Lari Division

Service type	Average distance traveled by households (km)
Basic public health services	2
Water	2
Primary schools	2
Secondary schools	6
Market center for basic provisions	2.5

Source; KENDAT study team household questionnaire (2002)

Transport Services in Lari Division

The Mombasa-Kampala highway passes through the lower end of Lari Division. This highway combined with high robust smallholder agricultural sector and close proximity to urban markets has led to the development of vibrant agricultural trade along the roads and in the smaller market centers in the interior of the division.

Donkey carts are the main means by which produce is moved from the farms and the small market centers on to the highway side markets. Back loading by women is also a

common way by which the produce gets to the markets. There is also considerable use of bicycles for milk delivery, transport of fertilizer and personal errands. Transportation of produce from the roadside markets to points of consumption is exclusively done by itinerant traders using motorized transport. The roadside markets are active early in the mornings and late in the afternoons. Women are more involved in roadside agricultural markets as compared to men who are involved on the main highway. All the local road infrastructure is either murrum or earthen. Frequent rainfall and absence of a maintenance regime has led to severe deterioration of most of the local road network. In the rainy season, many of the roads become impassable. In many of the interior routes there is a total absence of transport services.. Walking and cycling are the main ways in which people undertake personal travel. Typically, women rarely ride on bicycles due to cultural inhibitions.

Household transport patterns and ownership of means of transport

Transportation of goods by households derives mainly from agricultural activities, principally transport to the markets, water haulage, movement of animal feed, fertilizer and manure. Donkey carts are the most commonly used means of household goods and agricultural produce transport. Thirty eight percent (38%) of the households have a donkey and a cart. Out of these, 78% have at least 2 donkeys. There are more bicycles (42%) than animal carts. 4% of the households have motorized means of transport, most of which are old pick-ups.

Table 2: Ownership of means of transport by households

Means of transport	% of households owning
Donkey and cart	38%
Bicycle	42%
Motorbike	0
Motor vehicle	4%

Source: KENDAT study team, household questionnaire (2002)

Whereas most households with donkeys use them to meet own transport needs, some households (14% of donkey owning households) provide local transport services in addition to own use.

The primary reason given for ownership of donkeys is transport of bulky agricultural produce (carrots, potatoes) and inputs such as fertilizer and manure. In addition, they are also used to transport water and evacuate produce from the farms to the homestead. Bicycles are preferred in the transport of lighter produce such as kales, tomatoes and green peas in addition to making personal travel.

Mwea Division

Mwea division is a high potential agricultural area found in the central part of Kenya. The study area covers 581sq.km. According to the 1999 population and Housing Census, it has a total population of 125,962, a density of 246 persons per square kilometer and 31540 households.

Smallholder farming is the main means of economic support. On average households have 1.53 hectares of land. Rice growing is the dominant cash crop in the area. However, the area has moved from being entirely dependent on rice farming. Horticulture is emerging as a potential activity, mainly in French beans and tomatoes. Other crops, which are grown in this zone include maize, cotton, tobacco, sunflower and coffee. Horticultural produce is exported to European countries.

Until recently, rice farming and marketing was a highly controlled activity through a quasi government agency, the National Irrigation Board. However, due to economic degradation, production, marketing and distribution activities are now in the hands of households and private traders. A vibrant local economy based on rice milling and marketing has developed. This has in turn led to a very vibrant transport service sector consisting of different types of non-motorised and motorized vehicles.

Water: The area is well endowed with water resources consisting of five major rivers and numerous streams. Rain harvesting is also a common practice. However, piped water is not available to most of the households. This means that transport to water sources is one of the main household transport activities.

Educational facilities: There are about 60 primary schools in the division, 14 secondary schools and 3 vocational training centers.

Health facilities: These are reasonably well distributed within the division. Indeed, Mwea has the highest number of health facilities in the district. There is 1 hospital, 2 health centers, 21 dispensaries, 3 outreach clinics and 2 private nursing homes.

Table 3. Average household proximity to selected services in Mwea division.

Service type	Average distance traveled by households (km)
Basic (public) health service	3
Water	1.6
Primary school	0.6
Secondary school	2.4
Market center for basic provisions	3

Source: KENDTA Study team, household questionnaire (2002)

Transport Services in Mwea

The main Nairobi-Meru highway passes through Mvea Division. The road is in good condition and is used by both transit and local traffic. There are numerous market centers along the highway, all of which thrive on agricultural trade. The transport sector is particularly robust in all these centers. It consists of ox and donkey drawn carts, hand carts and very significantly, bicycles. Indeed, bicycle taxi services have become a central feature of the local transport system. It is estimated that bicycle taxis provide direct employment to between 150-200 people in Mvea Division, and they move around 400 people per day.

There are motorized transport services along the main routes in the interior, although most of these services operate mainly on market days.

Household transport patterns

Just like Lari, transportation of goods by households is related to agricultural activities. Marketing of rice, maize and coffee are the main household goods' transport generators. Animal carts are the main means used for transport of goods over 150 kgs. 33% of the households have their own animal carts. 63% of households use animal carts on a regular basis, which is made possible by availability of hire services.

Ownership of bicycles is fairly high in this area. 57% of households have got a bicycle, while motor vehicle ownership stands at 2%.

Table 4. Ownership of means of transport by households

Means of transport	% of households owning
Donkey and cart	33%
Bicycle	57%
Motorbike	0
Motor vehicle	2%

Source: KENDAT Study Team, Household Questionnaire, 2002

KALAMA DIVISION

General socio-economic features

Kalama is a semi arid division found in Machakos District in Eastern Province. The division occupies 180km².

Climatic conditions

The division is generally hot and dry. The areas experience two rainfall seasons, the long and the short rain seasons. The long rain season starts at the end of March and continues up to May, while the short rains season starts at the end of October and lasts till

December. The average annual rainfall is 700-750mm. The mean monthly temperature varies between 18°C and 25°C. The coldest month is July while October and March are the hottest.

Key Natural Resources

Land and soils

Land – the average land holding in the areas is 1 hectare. The residents enjoy security of tenure as their land is registered and they have title deeds.

The zones have a short cropping season with a fair to good yield potential for Katumani maize, mvezi moja beans, pigeon peas, sorghum, cotton, mangoes and peas.

Soils – the area has sandy loam, red clay loam and black cotton soils. The soils are derived from sedimentary rocks. Generally, the soils have a variable fertility, especially on the hills. On the foot slopes of the hills the soils have an increase in clay with depth and have a moderate low fertility. The dominant soils of the undulating topography of the uplands have a low natural fertility.

Water resource

There are a number of rivers in the area that dry up during the dry season. Several dry riverbeds can be observed from the road. The area is served by one well called Kyamwange and people, mainly women, walk long distances (3-4 km) to fetch water.

The division is largely a semi-arid zone. The amount and frequency of precipitation is quite erratic. Ground water potential in the areas ranges from moderate to low. This is because of the massive nature of the parent basement rock. Because the rock bearing formation carries a high quality of soluble minerals, most of the ground water is saline.

Water resources in the areas have not been fully utilized to support domestic, livestock, farming and industrial use. Due to increase in population and economic activities, the water resource is continuously becoming scarce. Permanent buildings, which provide good potential for roof catchment, are not being fully exploited in the division.

Key government development targets/objectives for the study area

The government has started a project to help improve agricultural production in the area. The project is called National Agricultural and Livestock Extension Program. (NAEP). NALEP?? This is an organization where farmers come together, form into groups, identify their problems and identify resources to solve their problems. The project has a membership of 400 farmers. Extension officers train the farmers on how to identify the problems and the opportunities therein.

NGO involvement

There is only one NGO that has penetrated the area – The Kenya Network for Draft Animal Technology (KENDAT). The organization is running a project which entails using conservation tillage, which is a better method of farming compared to the traditional methods, used by the residents of the areas.

Community involvement

The community has been involved in development projects. One notable project is the Utooni project where the community constructed a road for themselves and carryout repair and maintenance work. The road is called Kyamuange road.

Following the new trend of horticultural production in the area, the residents of Kalama want to join the Horticultural Crop Development Authority (HCDA) so that they will be able to market their produce.

Socio-economic profile of Kalama

Population: Distribution and densities

Kalama Division has a high population growth rate. The average number of people in a family is six.

The following table shows the population in 1999.

Table 5. Population Density of Kalama Division, 1999.

Male	Female	Total	Households	Area in Km2	Density
19268	21732	41000	7789	330.2	124

Source. 1999 Population and Housing Census.

The higher number of females in the area implies that they are the major contributors to family farm labour and there is need to empower them to make critical decisions on production and utilization of resources available at the household level.

Main land use and settlement patterns

Land use patterns are based on the agro-ecological zones and influenced by the soil fertility. The land is mainly used for agricultural activity. Crops produced in the area include: maize, beans, cowpeas, pigeon peas, dolicos/lablab (Nzavi). These are known to save people in times of drought and famine. Coffee farming is practiced but farmers have neglected it because of poor prices. Fruits like avocados, citrus, peaches, pawpaws and grapes are also grown.

Livestock production mainly entails rearing indigenous zebu cows and crosses of zebu with freshian or jersey. Poultry is reared, donkeys local goats and sheep are also kept.

Distribution of services

Water facilities: Water is very scarce in the area. There is no piped water system and people depend on rivers, which dry up during the dry season. Women have to walk an average 2-3km to get water. A few people have boreholes on their farms but these also dry up during the dry season.

Education facilities: In Kola, Kiatuni and Kyangala areas, there are a number of primary schools, which are within easy reach for the pupils.

Health facilities: There is one health center in the area that is sponsored by the government. The center has adequate medicine. There are two private health clinics. However, these facilities are situated in Kola shopping center which is far from the resident's homes (approximately 3 km). People have to walk the distance when sick or have to be carried on wheelbarrows. The terrain of the area is hilly, making the process more difficult.

There are no maternity facilities in the centers and expectant women have to travel to Machakos which is ?? kilometers away. As a result sick people and expectant women have lost their lives.

Market centers: There are market centers in Kola and Muumandu. However, these are far from farmers and they struggle to get their produce to the market

. Table 6: Average household proximity to selected services in Kalama Division

Service type	Average distance traveled by households (km)
Basic public health services	5
Water	1.5
Primary schools	2
Secondary schools	2
Market center for basic provisions	2

Source; KENDAT study team household questionnaire (2002)

Livelihood Data

Economic activities

Agricultural activities

Agricultural production is the main economic activity in the area. Much of the crop is used for subsistence. Horticultural production is for commercial purposes.

People also work as casual laborers where they earn 70 shillings per day. Transporting produce to the places is also a wage earner for the residents.

- a) *Mining*: a few people in the area mine gypsum and harvest sand.
- b) *Formal sector*: Commercial activities in the areas include small shops and selling horticultural produce in small scale.

Local employment structure

Subsistence agriculture is the major source of employment in the areas. With the current retrenchment in the public sector and the slow rate of employment generation in the private sector, small scale agriculture is likely to remain the main source of income and employment.

Average incomes in the Region

Majority of the people in the area practice small-scale subsistence farming. As a result, little is sold in the markets.

The people who work in the informal sector have their income varying with the type of activity so that it's not easy to give data on income earned.

Poverty Profile of the Area and Analysis of Main Causes

Inadequate infrastructural facilities

Water – Generally, the areas have inadequate water for domestic use, livestock, crop and industrial use. Rainfall is inadequate and unreliable.

Access roads – most of the access roads in the zones are impassable during the rainy season and remain in poor condition for a good part of the year. The poor condition of roads makes farmers earn less from their produce since only a few transporters are able to reach them.

Cooling facilities – cooling facilities for perishable goods such as milk and horticultural produce are not available at most production points, this has led to the exploitation of farmers by middlemen.

Inaccessibility to credit facilities

High lending rates and lack of collateral security limit access to credit by prospective loan applicants. On the other hand, ignorance on the part of those who possess acceptable collateral and the tendency of some farmers and small-scale businessmen to risk aversion have had the effect of limiting utilization of available credit facilities.

Underdeveloped human resources

Investment in the division have not thrived well, portraying inability of people with finance to identify productive and profitable businesses. The capability to adopt and make critical investment decisions is lacking.

With inadequate facilities for basic education, performance in examinations is poor. The perennial poor harvests experienced in most parts of the district do not allow for any financial gains to farmers and therefore denies the youth training opportunities that will enhance their productivity and provide the skilled manpower required to transform the region industrially.

AIDS- The AIDS pandemic has hit the area though residents claim that it's not rampant.

Transport System

The tarmac road leading to the area from Machakos is in good condition. However, the roads accessing the interior are earth roads, which become impassable in the wet season. The roads are also rough and bumpy. Due to the poor state, farm produce rots in the farms during the rainy seasons. The areas are mainly accessed through footpaths winding up the hills.

People walk, use bicycles, wheelbarrows, oxcarts or their backs for transport purposes. The oxcarts are improvised and are made of wood and bearings as wheels. This limits them in the amount of commodities they can carry.

Water, firewood, and agricultural produce are the commodities that are mainly transported. When there is much agricultural produce, a pickup is hired to transport it.

The charges for transporting produce is fifty shillings by human portage and a hundred shillings for a sack of tomatoes on a pick up. On Average, each trip made by human portage involves carrying a maximum of thirty kilograms. This implies either high cost of transportation owing to numerous trips in times of bumper harvest or great post harvest losses if the farmer does not have the money to pay for transportation of produce.

Telecommunications

Kalama divisional headquarters is not covered with telecommunication services.

Table 7: Ownership of Modes of Transport in Kalama

Mean of transport	% of households owning
Ox and cart	31
Bicycle	43
Motorbike	2
Sledges	34.7
Motor vehicle	2

KENDAT Study Team, Household questionnaire, 2002

Gender Analysis

Both men and women work in the farms but women spend more time in the farm than men do. Men work in the mornings only while women work all day. Transport of farm produce is mainly done by women and girls. This is because they use their backs and

culturally, men do not carry anything on their backs. However, men use ox-carts and wheelbarrows when need arises.

An interesting scenario is that women, including wives are paid for transporting farm produce to the market centers. Women fetch water and firewood which they carry on their backs. Men's participation is minimal.

Table 8: Ownership of ox-cart by Household members.

Household member	%
Wife	6.1
Son	Nil
Husband and wife	Nil
Husband	14

Source: KENDAT Study Team, Household questionnaire, 2002

In regard to repair and maintenance of roads, men do most of the work. Women participate minimally but they are left at home carrying out household chores and farming activities.

Women are well represented in the community group targeted by the government for development. Even in leadership, in a committee of nine, there are 4 women and 5 men.

Women carry out small trade where they buy horticultural produce from the farmers and take it to selling centers. Men on the other hand trade in cattle. This is because traditionally, men are the owners of the animals. Women have no authority over animals apart from poultry.

In conclusion, women do all of the reproductive work in addition to some productive roles. On the other hand, access and control of resources in the family is carried out by men.

OLEKATOTIORI ZONE *Study area is Magadi**

Ngurumani located in in Magadi Division in the North Western part of Kajiado District. Magadi Division as a whole covers a total area of 2,749 sq. kms. According to 2001 projections by the Central Bureau of Statistics, Magadi Division has a total population of 28,244. The main activities carried out in the Division are pastoralism on the lower parts and agriculture, mainly horticultural farming on the upper parts near the Ngurumani Escarpment. Crops grown include bananas, paw paws, oranges, watermelon, mangoes tomatoes and a variety of Asian vegetables. Rainfed agriculture is hardly practiced as the amount of rainfall is not enough. Animals reared include cattle, sheep, and goats. Donkeys are also kept and are important for transportation when the community moves in search of pasture and water for the livestock.

Climate & Topography

The topography of Magadi is characterized by volcanic hills intercepted by plains that are dissected by valleys. Most of the area lies between 500m and 800m above sea level but for the western Ngurumani Escarpment which has a higher altitude.

Magadi Division experience two rainfall seasons- the short and long rains. Short rains come between October and December and the long rains between March and May. The Division is generally dry with high temperatures for most part of the year.

Facilities

Water: Magadi Division is faced with severe shortage of surface water. This is due to relatively low precipitation and recurrent draught. The problem is more pronounced on the lower parts of the Division than on the upper part which is near the Escarpment. There is no piped water system and people depend on the few boreholes, shallow wells and small streams. Most of these dry up during the dry season forcing people and livestock to travel far distances in search of water.

Communication and Infrastructure: The road network is inadequate posing difficulties in internal communication within the Division. The available road network is in a poor state with very few access roads. There are also very few means of transport available owing to the poor state of the road. Telecommunication services are only found in Magadi town.

Health: The Division has two hospitals and five dispensaries which are scattered all over the Division.

Table 9: Average household proximity to selected services in Magadi Division

Service type	Average distance traveled by households (km)
Basic public health services	5.5
Water	10
Primary schools	5

Source; KENDAT study team household questionnaire (2002)

Transport services are inadequate. From Ngurumani, there is only one mini- bus operating in the area. It leaves Ngurumani every day at 7.00am for Kiserian only to come back at 10.00 pm. If one is lucky to afford the fare, s/he may not be lucky to get a space, even to stand, as it is usually very full. In some instances, they cannot afford the fare to Magadi and have to walk all the way. The only other means of transport that may help are the trucks that ferry horticultural produce to Nairobi from Ngurumani. One may hike a lift on them if they are not very full and the driver is willing to help.

Most of the farming is done on the upper side of the division where water is relatively adequate while pastoralism is practiced on the lower parts. Walking through the villages, one observes very interesting infrastructural scenario. Speaking to the people brings out even more stories on transport be it household, farming, marketing or health – related. Roads and tracks to farms are narrow, overgrown with bush, and full of pebbles making even basic mode of movement (walking) difficult. It is no wonder then that one observes very few bicycles let alone motorised mean. Yet these are the tracks used by the farmers to transport their crops to buying centres, by children to schools, animals to markets, women to markets (sell, buy), fetch water and firewood, and animals to grazing, water points and markets. Horticulture buying companies desist from venturing into farms owing to the poor state of the roads. This forces the farmer to head/ back load his/ her produce to buying centres which are on average 5 km away.

During rains, the few roads turn into big uncrossable rivers cutting off communication. At such times, a lot of produce goes to waste, not to mention loss of human and livestock lives. One river, Oloibortoto (*‘river of the white stones’*) is especially notorious. The river dries up during the dry season leaving only a small stream barely a meter wide across the road. When it rains, it swells and covers between 500 – 700 meters across the road. It also

brings with it large stones hence its name. One key informant had this to say about the river;

"This river causes us a lot of pain. As long as I can remember, there is no rainy season that it does not claim at least one human life and several livestock. ...It makes us go hungry, it cuts us off completely we cannot buy, we cannot sell. However, it does not dry up completely, our cattle can drink from it, and our women do not have to go very far in search of water." (Ole Kelai, 65).

This and other rivers bring along big pebbles which have to be cleared after the rains to make a road once again.

For the lower pastoral areas, the situation is no better transport wise. The tracks leading to the *manyattas* are difficult to walk. Marketing of livestock is difficult because the nearest reliable market is about 125km away in Kiserian town. The animals (and of course their sellers) have to walk all the way taking between 1-2 weeks to reach the markets. Smaller animals are sold at Olkramatian market, which is about five kilometres away, but fetch a low price there. For the pastoralists who have ventured into horticultural farming, they have to back/ head load for 2km to the nearest collection centre.

Women's share of transport burden.

Reproductive roles, which are performed purely by women, are not spared by the poor state transport services and infrastructure. In addition to performing her reproductive roles, a woman also have to do some productive roles. The greater burden seems to lie on women and girls who transport water and firewood over long distances. This gets worse as one moves to the lower parts of the division due to scarce water resources and depleted fuel wood sources. At times the women walk for up to 10 kilometres daily in search of water for domestic use. In addition, services such as health (7 – 15km) and schools (2-

3km) are located far from the Manyattas. Given that women are the custodians of family health, they usually have to trek to seek health for themselves, their children, husbands and kinsmen/ women. In addition to such roles, they also have the general home care chores which are not only time-consuming but also energy draining.

The upper areas are better endowed with water resources due to its proximity to the ranges hence many streams. Fuel wood is also relatively nearer compared to the lower parts. This, however, does not lessen the women's burden since they have to make several trips each day to the sources. Nasieuku, a housewife makes on average 17 km every day to accomplish her duties as a mother, farmer and wife:

"I wake up at 5.00 am to go to the stream (500m away) to fetch water before the cattle and those using it for irrigation make it too dirty for cooking and drinking. I make two trips so that I can have enough water for the whole day...I then go to the farm (1 km away) at around 8.00am till 10.00 am when I come back to the homestead to prepare lunch and take the goats to the stream. The harvest is brought to the homestead at noon and I help transport to the buying centre (3 Km away). I have to come back to serve lunch and prepare to go to the forest (2 km away) to fetch firewood at 3.00pm. At 5.00pm, I go to the farm to irrigate or harvest the okra and brinjals until 7.00pm. This is when I come home to prepare supper, for the family and rest" (Nasieku, 35).

Although some of her chores seem trivial, a woman may end up walking another 2 km around the home in the course of preparing meals and "resting", be it in moving between houses, serving family members and kinsmen and women.

Although women did not mention failure of husbands to remit money from sale of livestock, some men said that they knew of men who never brought anything back home from Kiserian (the livestock market) having spent it all on beer and town women. No

such allegations were made by the predominantly horticulture community, probably because they did not go to far away markets.

IMTs and Motorised Transport

There is a minimal number of IMTs in Ngurumani. The poor infrastructure makes it difficult to use IMTs such as bicycles and animal carts. The roads are poorly developed making it difficult to cycle. In addition, there is an absence of artisans to repair them when they break down. Observations around homesteads show a number of abandoned wheelbarrows due to break down since there are no repair services within the area. A few donkeys can also be observed grazing alongside the cattle and occasionally ferrying water and household belongings as the pastoralists migrate in search of pasture.

Table 10: Ownership of Modes of Transport in Magadi

Means of transport	% of households owning
Pack animal	60.7
Bicycle	42.8
Motorbike	-
Sledges	-
Motor vehicle	3.6

KENDAT Study Team, Household questionnaire, 2002

Key Natural Resources

Water resources

The area is faced with severe shortage of surface water due to the fact that most of the rivers and streams in the area are seasonal. These include River Uaso Nyiro and several

streams flowing from the Eastern face of Ngurumani escarpment and Loita hills. The shortage is caused by low precipitation and frequent drought experienced in the region.

NGO involvement

Semi Arid Regions Development Program (SARDEP) is involved in improving livelihoods of the people. It has initiated a drip irrigation project in the area and donated a donkey cart to the people. The organization also sunk a borehole for the people, which now serves as a reliable source of water.

Community involvement

The women of the area have formed a group where they are involved in the drip irrigation project. The women also buy goats and later sell them at a profit hence generating income for them.

Socio-Economic Profile

Population distribution and densities

According to the 1999 census, there are 91 households in the area. 222 are male while 209 are female. The total population is 431 people. The area has a growth rate of 4.51 and a death rate of 8 out of 1000 people.

Main land use and settlement patterns

Land in the area is mainly used for livestock production. Beef cattle, sheep and goats are reared. Land is owned in group ranches.

Minimal crop production is practiced. Maize is grown on a very small scale for domestic consumption.

Distribution of Services

Water facilities

There is no piped water system in the area. People depend on water pans that are largely inadequate. They have to walk on average 2-4km in order to obtain water for consumption as well as for large herds of cattle.

Electricity

The area is not adequately supplied with electricity apart from Kajiado town. There is clearly need to connect the area to the electric grid.

Educational facilities

There is only one primary school in the area and some pupils walk very long distances to school every morning and afternoon. Very few girls are enrolled in school (the average girl enrolment rate is 18%) and most pupils in the area do not go beyond primary school.

Health facilities

There are no health facilities in the area. A private practitioner is said to visit the area every Thursday of the week to attend to the sick. The people have to walk 25km to

Kajiado or commute if they can afford. Most of them find the fare of kshs.200 for a return trip unaffordable. There are no maternity facilities either. Most residents depend on traditional birth attendance.

Livelihood Data

Economic activities

Agricultural activities: The main economic activity in this area is livestock production. Beef cattle, sheep and goats are reared.

A small fraction of the population practice crop production for domestic consumption.

Formal sector: Although most of the population in the area derive their livelihood from agricultural and livestock activities, some of them have ventured into other non-farm activities. These include retail shops.

Poverty Profiles of the area and Analysis of the Main Causes

Inadequate infrastructural facilities

Insufficient water: the area faces severe water shortages. Clean water for drinking is a big problem. The water sources available are not protected and as a consequence, water for domestic use is fetched at the same source where livestock is watered. This has led to poor health standards and frequent outbreaks of water-borne diseases.

Poor access roads: The road network in the area is not well developed. This has resulted to poor accessibility and adversely affected transportation of inputs and outputs to the area. Existing resources in the area have therefore not been tapped.

Inadequate and under utilized educational facilities

The schools in Olekaitotiori are underutilized. There is low enrolment and constant absenteeism by pupils. This is attributed to such factors as early marriages, moranism and long distances to schools. This has led to low literacy levels and scarcity of semiskilled and skilled laborers. As a result, few people engage in businesses and their out-migration in search of jobs is curtailed.

Inadequate medical facilities

There are only a few existing health facilities, which are widely scattered and patients have to walk for long distances before they can get medical attention. As a result, mortality and morbidity rates in the area are high. The health status of most people is considerably poor. This affects their potentiality in respect to development and industrial activities.

Underdeveloped human resources

Olekaitotiori faces shortage of skilled manpower and more so from the local community members. Access to education and training opportunities is difficult for them. The

majority of the youth who comprise a large proportion of the working population have inadequate skills to venture into income generating activities.

Inaccessibility to credit facilities

Institutions that offer credit are inaccessible to most people of Olekaitotiori. A vast area is still under group ranch management. Most of these group ranches have not been subdivided and as a result the owners do not have individual title deeds. They therefore cannot produce collateral for loan procurement. This has affected the community adversely in that most people fail to raise enough capital to diversify their production.

Transport system

The roads in the area are earth and graveled. They are bumpy and usually impassable during the wet season. There are two matatus that ply the route. One passerby in the morning and only get back in the afternoon. Merchandise is brought to the shops by a lorry once a week on Thursdays.

Most people mainly walk to their desired destinations. Women use their backs to transport firewood and water. Donkeys are used minimally.

Wheelbarrows are only used to ferry goat dung from the house to outside.

Gender Analysis

Women do not have access to donkeys as their use is controlled by the men. As a result, the women cannot use them effectively to transport purposes. We prefer to have the donkeys rest and the women work.

Women sell their goats to us because they are not able to travel the long distances to the market centers.

Only women are involved in an irrigation project. The men cannot participate in such work as it is considered culturally a woman's job. Men and boys ride bicycles and use them to transport stuff but women do not.

According to the Maasai culture, women build houses and men do not participate in any way whatsoever.

Maasai men are reluctant to send their daughters to school and they prefer marrying them off. Women and girls are considered lesser beings in this area while men are considered above the law.

BUSIA - Matayos and Township Divisions.

Matayos/ township Divisions are located in the western part of Busia District in Western Province. Matayos Division covers a total area of 173.3 square kilometers while Township covers 22.2 square kilometers. According to the 1999 population and housing census, Matayos had a population of 55,186 and Township had 22,158. The population density was 318 and 1133 per square kilometer for Matayos and Township respectively in 1999 and this was projected to increase to 348 and 1240 in 2002 in these divisions respectively. The total number of households in the two Divisions is 17,809, with 11,789 in Matayos and 6,012 in Township.

Climate and Topography

Township and Matayos have various topographical features which include plains, few hills and swamps. The topography is generally gentle undulating with irregular water channels. Altitude varies from 1170m to 1260m above sea level with the exception of a few hill tops which have higher altitude.

There are two distinct rainy seasons in the area; the long rains from March to May and the short rains from August to October. Dry spells usually last from December to July. Mean annual temperatures vary from 18 - 30 degrees Celsius.

Agriculture:

Small holder subsistence farming is the dominant mode of farming in the two divisions. Crops grown include maize, beans, sorghum, finger millet, cassava, bananas and both indigenous and exotic vegetables. Although these are solely grown for subsistence, some are sold to the markets to supplement household income. Groundnuts, sugar cane and cotton are grown on a small scale for commercial purpose. Small scale dairy farming is also practised by 13% of the household interviewed. Small scale agriculture farming employs the majority of the population. The small farms are on average 4.2 hectares in Matayos and 3.3 hectares in Township.

Facilities:

Water: There are different water points namely rivers, streams, springs, water tanks, wells and boreholes within the divisions. There are also some piped water schemes operated by Busia County Council, different institutions and by community self help groups. It is worth noting, however, that these water points are located at outside the homestead, (on average 0.5 km) which means residents have to make several trips to fetch the water for both domestic use and animals.

Education: There are thirty-eight primary schools, two secondary schools and two technical training institutes in the divisions. On Average, the primary schools are located two kilometers away from households.

Health: There are two hospitals in Township, one government health centre in Matayos, and four dispensaries in Township. These facilities are inadequate considering the number of people they have to serve. They are also located far from the villages, most of which are located in Busia and Mundika towns.

Market centers:

There are two main market centers which include Mundika and Municipality.

Transport Services and communication

Roads: The two Divisions have a fairly well distributed road network compared to the other study areas. There are a total of 21km of tarmac, 27 of gravel and 23 km of earth roads. Apart from the tarmac road, all the others are in poor state and become impassable during the rainy season.

Telecommunication: Apart from Busia town, the other market centres have no telecommunication services. This forces the residents to travel far distances to access these facilities.

Modes of transport: Owing to the poor condition of the roads in the interior, public transport means that used to operate in the area have withdrawn paving way for boda boda. Other modes of transport available include ox and donkey carts, wheelbarrows, lorries and tractors. On the tarmac, motorised transport and boda boda offer transport services.

Table 11: Average household proximity to selected services in Matayos and Township Divisions

Service type	Average distance traveled by households (km)
Basic public health services	4
Water	0.5
Primary schools	2
Secondary schools	5
Market centers	4

Source; KENDAT study team household questionnaire (2002)

Household transport patterns and ownership of means of transport.

The main household transport activities center on transporting agricultural produce from the farms to homestead or to markets, transport of water, animal feeds and manure. Transport of farm produce is mostly done by women who back or headload them to the homestead or market. Owing to small amounts of produce sold, most marketing is left to the women who sell at the local shopping centers. Commodities so marketed include indigenous vegetables, maize, sorghum, cassava, sugar cane, groundnuts and kales. A few farmers sell their produce to far off markets in Busia town on market days. For these, bicycles are the commonest mode of transport. Bicycles are also used to market milk, transport water and animal feed.

A scenario worth noting is that in the two divisions, there are no cultural inhibitions regarding women's use of bicycles both for marketing and personal travel. However, most of those interviewed said that bicycles are owned by the men in the homestead (84%). Another unique scenario which come up during in-depth interviews is ownership of means of transport by widows. Such interviews reviewed that widows are involved in boda boda business. This is done by employing young men to operate the bicycles.

Animal carts are mainly used to transport building materials or manure to farms. Wheelbarrows are used for water and manure transport.

Table 12: Ownership of means of transport by households in Busia

Means of transport	% of households owning
Donkey and cart	3
Bicycle	87
Motorbike	2
Motor vehicle	8

Source: KENDAT study team, household questionnaire (2002)

(Lucy kindly key in/paste from Legesse write up. After description of each study area include a map)

GENDER ANALYSIS: IDENTIFYING THE ISSUES

Gender Roles and Responsibility

Whereas men fully participate in preparing the farm, planting the crops and taking the livestock to water, women do most of the productive and reproductive responsibilities on a full-time basis. Men never take part in fetching water or firewood, bathing the children, cleaning the house, washing clothes, or even in self-help activities. It is however, interesting to note that men participate in activities related to transporting farm inputs and produce from and to markets respectively. In Mwea, for example, men transport rice on bicycles or donkey carts to the mills, and may also be seen carrying fertilizers and other inputs on bicycles. Who transports what, is also to a large extent determined by the quantity and value of the goods/service.

Fig. 1: Typical Gender Roles in the Study Areas

Activity/Roles	Responsibility			
	Adults		Children	
	Men	Women	Boy	Girl
Farm preparation	■			
Crop planting	■		■	
Crop weeding		■		
Crop harvesting		■		■
Livestock herding	■			
Livestock watering	■			
Livestock milking		■	■	■
Food search/preparation				■
Feed children				
Fetching water	■		■	■
Fetching firewood	■			
Fetching vegetable		■		
Transporting farm inputs	■			
Transporting farm outputs to markets	■			
Bath children				■
Clean the house				■
Wash clothes				■
Circumcision ceremony				
Funerals				
Participation in self-help activities			Youth	Youth
Water point management	■	■		
Cattle dip management				

Marriage ceremony				
Repair and maintenance of IMTs				

Source: KENDAT study team; Focus group discussions

Note: Full participation
Partial participation

In traditional societies, gender roles and responsibilities were more or less clear-cut. These days however, changes are noticeable. Farm preparation, fetching water, fetching firewood were predominantly women's roles. However, with the increased use of IMT's, better education and modernisation, some of these roles have shifted in some cases fully or partially to men and youth. The contribution of religion in discouraging stereotypical household division of labour was also reported in some group discussions. This is however was not the case in Magadi, where crop planting and weeding, livestock milking, cooking and cleaning is done only by women, boys and girls. Participation in self-help groups is limited to women and youth in all the study areas. Repair and maintenance of IMT's is limited to men. However, women participate in improving local infrastructure such as paths to water points during the rainy season as reported in Kalama. Furthermore, the number of households that are headed by women is increasing. In the study areas, women are the breadwinners in 10-30% of the households. If we consider the families with fathers working away from home, then the effective number of households headed by women would even be higher. Unfortunately, the literacy levels of women headed households seem to be lower than the average.

DECISION-MAKING AND RESOURCE CONTROL

The Constitution of Kenya guarantees equal opportunities for men and women in decision-making institutions. Nevertheless, there are still very few women members of local political and economic decision-making institutions. On average, women constitute 0-3% of the total membership of the District Development Committees in the study areas.

At the household level, men usually make decisions on income, labour and land. They decide on the crops to plant, the need to hire additional labour, the amount of seeds to purchase, the amount of crops to sell, the mode of transport to be used, among other issues. The tradition of men being granted the decision-making authority is deeply rooted among the Maasai Luhya, Kamba and Kikuyu people who dominate the study areas. Such tradition of valuing the boy-child over the girl-child explains why few women having better access to education and other opportunities. Consequently, fewer women would have the qualifications to seek higher posts in government policy-making bodies or would have the confidence to make decisions at home.

Table 13 : Use of Household means of Transport by Gender in all study zones

Gender using the transport means (%)				
	Male	Female	Male & female	Total %ge of ownership
Transport means				

Motor vehicle	2.6	00	3.9	6.5
Bicycle	47.6	0.9	15.4	63.9
Animal cart	21.0	00	6.0	27.0
Pack animal	6.8	8.6	6.0	21.4
Wheelbarrow	27.5	00	25.0	52.5

Source: KENDAT study team, Household questionnaires, 2002

Of all the means of transport shown in Table 13, the majority of the users are the male members of the household. This is despite the common knowledge that female members of households are responsible for most of the productive and reproductive roles which have great transport requirements. The table also shows that ownership of transport means by households is low with on with the exception of the bicycle (63.9%).

Table 14: Gender Access and Control over Household Resources and Assets

Resource/Asset	Access and Control			
	Men		Women	
	Access	Control	Access	Control
Land	√	√	√	
Water	√	√	√	
Trees	√	√	√	
Household Building	√	√	√	
TV	√	√	√	
Radio	√	√	√	
Cows	√	√	√	
Goats	√	√	√	
Chicken	√		√	√
Donkey	√	√	√	
Dogs	√	√	√	
Car	√	√		
Bicycle	√	√		
Cart	√	√		
Granary	√	√	√	
Cooked Food	√		√	√

Source: KENDAT Study Team, FGD 2002.

From the table above, it is obvious that women have very limited control over household assets and resources. In Magadi, for example, although women have access to cows for milking, they do not own or control them. Access is only limited to milking. In the study area, women seem to have complete control over cooked food (taboo for men to be in the kitchen) and chicken. However, in Lari, where they are practicing poultry farming on a commercial basis, the control over the rearing and sale of chicken is by men.

With regard to access to transport assets, women in most cases have no access to the car, bicycle or cart (oxen or donkey). These assets are fully controlled by men.

Landholding and Tenure

In the study area, most families depend on small pieces of land; about 60-70 percent of the families own less than 2 hectares of land. By tradition, only heads of households who happen to be the husbands can own land. Daughters are not allowed to receive any land because it is assumed that their future husbands would have their own land. When a husband dies, his brother takes control over his property while carrying the responsibility of his wife and children. However, the traditional practice of land inheritance is slowly changing. The Government has already passed the law the Succession entitling both wives and daughters to share in the estate of their husband and fathers. In addition, female participants of the focus group discussions pointed out that girls might start inheriting land in the future because there is an increasing number of women who do not marry and who are now educated and "westernised". They also mention single mothers, who are quite common in the study area, who would also need a piece of land for subsistence cultivation.

Educational Attainment/Literacy Levels

Although there is no evidence in international research on the link between better rural transport services and literacy levels of the community members, there is a likelihood that people with higher literacy levels will opt for improved infrastructural facilities in the rural areas. In the study area, this might be the case, considering that women and men are responsible for a myriad of responsibilities directly or indirectly related to rural transport. The roles of women range from fetching water and firewood, going to the market to buy farm inputs and sell farm produce. Men on the other hand are responsible for taking livestock to the markets, transporting large quantities of farm produce to markets and mills, etc. In Mwea and Busia, where the study has reported relatively higher literacy levels, the adoption of IMT's such as the "boda-boda" has been well received. In some cases, it has been modified to cater for the transport needs of the community. It is observed that higher literacy levels allow for better absorption of new technologies in communities.

Community Participation

There are many community based self-help groups in the study areas. There are youth groups, church-based groups and women's groups. There are local groups as well as international NGO's in some of the study areas, such as ITDG in Magadia and Plan International in Mwea. According to the household survey, about 70% of the women are involved in group activities.

Most of the group activities include income-generating activities such as farming, livestock raising, trading, handicraft, and establishment of rice mills. Some groups administer rotational funds, wherein participants contribute an agreed amount of money at regular intervals (weekly, fortnightly, monthly). The total collection is given to a member of the group. The same system continues until all the members have received their collections. The cycle of collection then begins afresh. This arrangement is very popular among women's groups in Kenya. Usually, the money collected is used for

household improvement and purchase of household utensils. When the need arises, such contribution may also be used to pay for school fees and medical bills.

There are many issues regarding community participation in rural transport services or generally in infrastructure development that may need further investigation. First, some community based groups in other parts of the country (outside the study area) have been reported to have been successfully involved in infrastructure improvement, including technological innovation in IMT. In Mwea, an association of the boda-boda operators has been established albeit not fully. However, even where such community organisations exist, only a few have made significant contributions to raising the general standards of living particularly of those residing in remote rural villages.

Secondly, the motivation for mobilizing participation of the community around rural transport services, just like in the case of other services and infrastructure, has been at times abused for personal interest - by community leaders, politicians or government officials. When Kenya gained independence, the government promoted the 'harambee spirit' as the catalyst for rural development. It has been reported that some community members are unlikely to participate in harambees as money collected for infrastructural improvement is most of the times diverted for personal needs and enrichment.

Thirdly, although there are many women groups in all the study areas, still their participation in community activities is limited partly by their heavy workload at home. It seems ironical for women not to be involved in agricultural cooperatives even though they are the ones primarily responsible for agricultural production. On the other hand, very few women's groups are involved in activities related to rural transport services or infrastructure improvement, yet they have immense responsibilities that depend on such services.

OTHER SOCIO-ECONOMIC AND POVERTY CONTEXT OF RURAL TRANSPORT SERVICES

Demographic Characteristics

Like most Sub-Saharan African countries, Kenya has a predominantly young population. About half the population (48%), belong to 0-14 age group. In the study area, this young age structure is also evident. For example, the age cohort from 0-14 years is estimated to be 53.5% in Mwea division and 51.1% in Busia.

The temporary out-migration can be attributed primarily to young males seeking jobs in the cities - Nairobi, Kisumu and Mombasa. The household interviews conducted by KENDAT revealed that parents expect their children to seek employment and economic advancement outside their communities. The irony is that in Busia and Mwea, it is the young men, 18-35 years that are involved in boda-boda business.

Food Adequacy

In the focus group discussions, a question regarding food adequacy at the household level was raised. Most of the households reported food inadequacy. This phenomena can be attributed to:

- Prolonged drought and famine periods, particularly in the Magadi area
- Shifting from food crop farming to cash crop/horticulture in Kalama, Magadi and Mwea
- Lower yields due to exhaustion of soils and lack of farm inputs in Mwea

SOCIAL CONTEXT

Ethnicity and Beliefs

Magadi is inhabited predominantly by Maasai, Mwea by the Kirinyaga, Kalama by the Kamba, Busia by the Luhya and Lari by the Kikuyu.

Although there are no well-defined relationships between ethnicity and rural transport services, a pattern seems to emerge with regard to ownership, control and use of transport services and modes defined by ethnicity and cultural beliefs.

It has been observed that women do not ride bicycles in Lari, Magadi and Kalama. Even in Busia and Mwea, women users are very limited. There is need to do further research in this area to identify the links between ethnicity/beliefs and advancement in rural transport services.

ECONOMIC CONTEXT

Income and Expenditure

Generally, the mean income of each district in the study area is half the national income. Compared to the national average of male monthly income of about Kshs. 2869, the average for the study area would only be about 1/3 to 1/2. The income for males in Magadi and Mwea is however, far better than the national average - attributed to livestock and rice respectively. However, the income of women in Magadi is very low Ksh. 300. Some boda-boda operators in mwea indicated that due to the huge influx of people in the service, they are rarely breaking even.

In most of the study area, the average expenditure exceeds the average total income. This result would require further validation as the survey respondent might have overstated their expenditure and understated their income. Nonetheless, focus group discussions have established that some households depend on their working children, relatives and friends for soft loans or money gifts, albeit in an ad hoc manner. In other cases, households borrow money from commercial institutions or local self-help groups.

Major Economic Activities and Agricultural Products

The major economic activities and income sources depend on geographic characteristics of various sections of the study area. Magadi area depends on livestock production, Mwea on rice growing, Kalama on horticulture and food crop production and Busia and Lari on agricultural production. A large number of people in Lari are also involved in regular salaried employment. People living around the market centres and towns have however, a diversified source of income. For example, regular and casual employment and informal small-scale business (jua-kali) are found more often in Lari township, Mwea township and Busia town. Roaring boda-boda business is also observed in both Busia and Mwea, whereas donkey carts are observed engaging in serious business in Lari and Mwea.

Table 15: Composition of Income Sources

Area	Salary/Wages	Business (self Employment)	Agriculture/Livestock
Lari	26%	10%	64%
Mwea	15%	9%	76%
Busia	15%	10%	75%

Kalama	8%	9%	85%
Magadi	6%	9%	85%

KENDAT Study Team, Household Survey, 2002

As shown in the Table 15, 64%-85% of the households depend on agriculture as the main source of income.

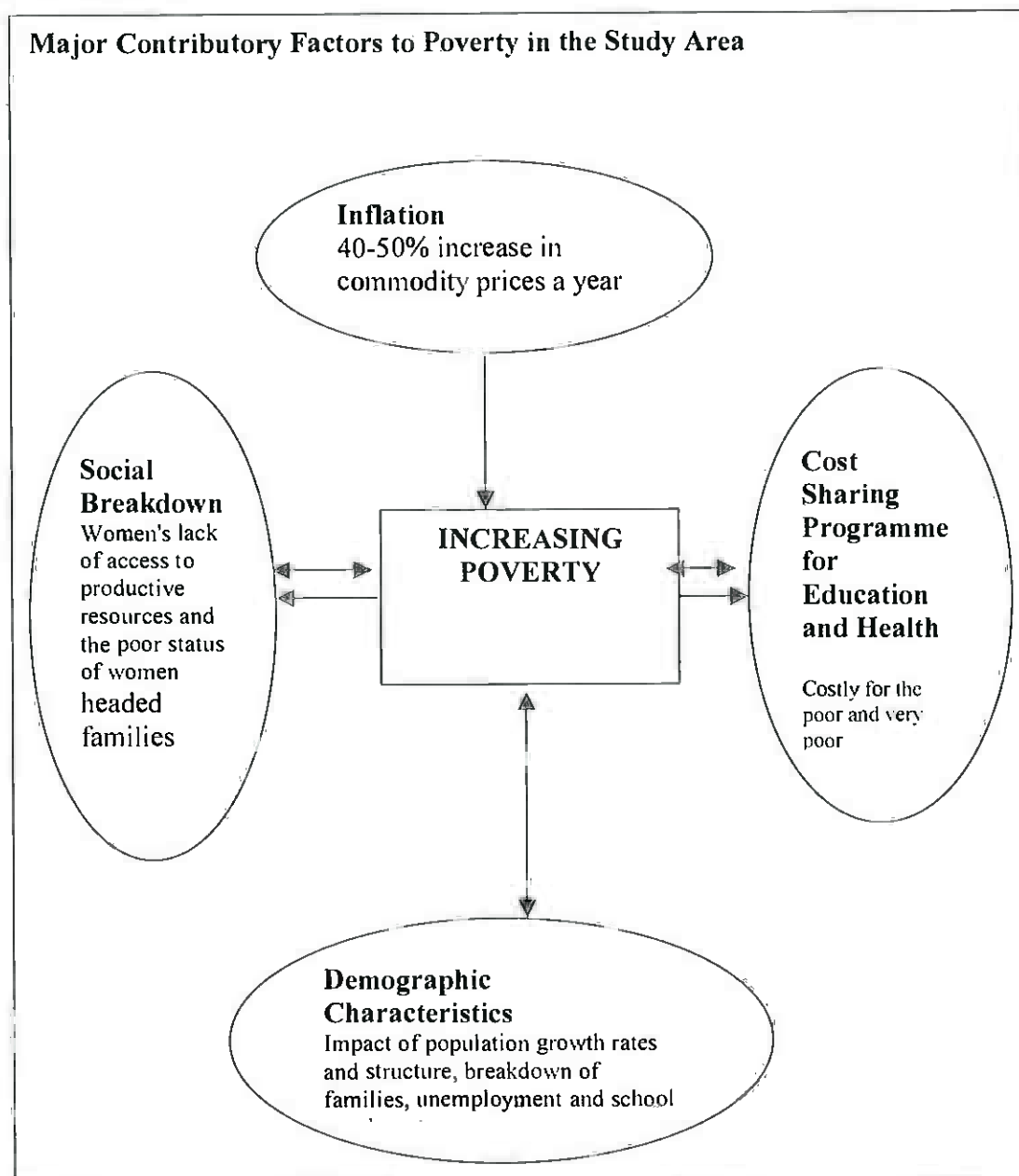


Fig. 2: Major contributory Factors to poverty in the Study Areas.

¹ The NARC Government has recently introduced free primary education in 2002. However, parents are still responsible for providing uniform, books and other related expenses.

RISK OF POVERTY

According to focus group discussions conducted in the study area, most of the households believe their future situation will be worse. This conforms to the results of poverty assessments carried out for the Poverty Reduction Strategy Paper 2002. Four factors have been attributed to the respondents' bleak perception of their future. They include;

- a) inflation, wherein prices of commodities increased by 40-50 percent in a given year;
- b) limited access of women to productive resources
- c) decline in agricultural production
- d) impact of HIV/AIDS and malaria on population structure
- e) cost sharing programme for health and education services¹ burdening the poor and the very poor.

PLANNING ISSUES AND DIRECTION

Based on the discussions in the previous sections, at least three issues could be considered for the development of a programme of action for rural transport services in Kenya.

One, women are expected to play significant and multiple roles in transport and transport related activities at the household level. However, they have many responsibilities that compete for their limited time. They also hardly have any control over household resources. They have limited chance to own land that would serve as a primary source of household food and income. They also have limited access to income.

Two, there are self-help groups in the study area wherein women, young people and church members could participate actively in transport related activities. But women's responsibilities sometimes would make involvement in such groups difficult.

Three, it seems people in the study area are in worse off condition in terms of income than the average Kenyan population. Although agriculture remains the main economic activity, about half the residents reported inadequacy in their food supply. Worse, almost all the people participating in the focus group discussion expressed a bleak view of the future.

Considering the issues raised above, the following directions are proposed:-

- a) Investment in the development of women's capacity
 - b) Diversification of community-based self-help group activities to transport related activities and enterprises
 - c) Improvement in standards of living of rural communities through introduction of home economic improvement activities
 - d) Transport services education for school-children and youth with the involvement of schools and community (e.g. the donkey awareness radio programme by KENDAT)
-

Suggestions for specific projects are among others, as follows:

- a) dissemination of knowledge, increasing awareness and promotion of best practices in rural transport
- b) promotion of rural transport (care of donkeys and other pack animals) education for school children and youth
- c) strengthening district rural transport programmes
- d) enhancement of institutional capacities on management of rural transport services
- e) financial resources, through micro-credit for individuals, community groups engaged in rural transport services.

Fig. 3: *Focus Group Discussion: Understanding Rural Transport Services- Voices from Kyangala Village in Kalama, Machakos District.*

Focus Group Discussion: Understanding Rural Transport Services- Voices from Kyangala Village in Kalama, Machakos District

A hilly semi-arid and eroded area with relatively low population density. Infrastructure is basically seasonal roads (dusty) and footpaths with no bridges or culverts, but concrete "over-passes" across sand dams or seasonal rivers.

Transport Problems

- Roads, especially for residents of the hilly region
- No wholesalers, or hardware stores yet supplies are needed for many purposes
- No IMTs or other vehicles can reach the hill-tops

Goods and human transport

- Cement and other loads have to be repacked in smaller quantities to allow for human portage
- Transport boys can be hired from the market places to get goods home and even up the steep hills
- A bag of cement that would cost about Ksh 500/- is transported 2 – 3 km by humans in Kyangala for 100/- having come @ 50/- on vehicle transport from Machakos, 30km away.
- Passenger (human) transport is paid at 100/- for 30 kilometres by Matatu on rough road (Kyangala-Machakos) and 40-50/- for similar kilometres (Muumandu-Machakos) on the new tarmac road. Muumandu is a few valleys across from Kyangala, some three kilometres or so in a straight line

Seasonal variation

- Rain season transport is a big problem due to difficult infrastructure which breaks vehicles

Communication and Power/Energy Supply

- Muumandu has been opened up by the new road and now has telephone service (ground line), electricity supply hence capacity to run jua kali welding sheds
- Mobile network is received only in selected areas on the hills but it remains unaffordable to the large majority

Roads and repairs

- Roads are in a pathetic situation. Labour methods of cut and fill are detrimental to environment. Government repairs not regular - can be once in ten years and especially just before national elections.

Problem ranking

- 1) Infrastructure (roads) and communication

Source; KENDAT study Team, Focus Group Discussion (June, 2002)

TOWARDS A SOCIO-ECONOMIC FRAMEWORK FOR RURAL TRANSPORT SERVICES IN KENYA

Economic Growth

During the period 1995-2000, Kenya performed a bit low economic growth in terms of real GDP, that is, on the average. The National Development plan (2000-2003 ?? 2002-2008) has launched a considerably ambitious growth target, a 5.p% pa, to be led by a strong growth in the industrial sector. The contribution of the agricultural sector is projected at a minimal level, 4.4%.

The economy in the study areas is mostly based on agriculture; 50-60 percent of the income comes from the agricultural sector. Although drastic industrialisation will hardly take place in the study areas, the local economy is expected to grow steadily through production of cash crops and horticulture. As a result, it is projected that the economy will grow at 4-5% pa. If the economic growth is less than projected population growth rate, eventually the study areas cannot escape from the current poverty level.

Planning Objectives and Strategies

Two key planning objectives and several strategies to achieve them have been identified.

Objective one: To provide all residents with universal access to basic rural transport services and upgrade the quality of the services through:-

- Enhancing rural transport services
- Making functional the district rural transport service delivery system
- Promoting linkages between private (including small-scale enterprises) and public rural transport providers
- Rehabilitating existing rural transport infrastructure and services
- Strengthening the financial capability at the local level
- Institutionalising supervision and monitoring for quality assurance

Objective two: To strengthen linkages with other sectors in facilitating community development that relates to rural transport services improvement by:

- Encouraging community based rural transport services activities
- Facilitating the improvement of rural roads, water and sanitation facilities, including access to sources of energy
- Encouraging self-help group activities that empower women.

These strategies are formulated to tackle the problems of the study area as discussed in preceding chapters. They cover all the areas of the improvement of the rural transport services in terms of a) improvement in physical conditions and institutional systems and b) capacity building of management and technical know-how.

Using the sustainable livelihoods framework, the study concludes that the necessary conditions for implementing the strategies of the master plan are physical and institutional improvement as well as capacity building. The table below shows the relationship between the conditions and strategies. It should be noted that one strategy alone cannot be effective. It needs to be mutually related with another for successful implementation.

Table 16: Required Conditions for Planned Strategies

Strategy	Improvement		Capacity Building	
	Physical	Institutional	Management	Technical
<i>Objective One</i>				
Enhancing rural transport services	XX	XXX	XXX	XXX
Making functional the district rural transport service delivery system	XXX	X	XXX	XX
Promoting linkages between private (including small-scale enterprises) and public rural transport providers	X	XX	XXX	X
Developing programmes for continuing education for rural transport personnel	XX	X	XXX	XX
Rehabilitating existing rural transport infrastructure and services	XXX	-	XXX	X
Strengthening the financial capability at the local level	-	XXX	XXX	X
Institutionalising supervision and monitoring for quality assurance	X	XXX	XXX	XX

Strategy	Improvement		Capacity Building	
	Physical	Institutional	Management	Technical
<i>Objective two</i> Encouraging community based rural transport services activities	X	XX	XX	XX
Facilitating the improvement of rural roads, water and sanitation facilities, including access to sources of energy	XXX	-	XXX	X
Encouraging self-help group activities that empower women	-	XX	XX	X

Notes; the number of "X" stands for the level of requirement. XXX: greatly required; XX: considerably required; and X: somewhat required.