

Social Aspects of Dynamic Poverty Traps: Cases from, Vihiga, Baringo and Marsabit Districts, Kenya

**Paper presented at KIPPRA-Cornell SAGA workshop on
Qualitative and Quantitative Methods for Poverty Analysis
On Thursday 11 March 2004
In Grand Regency Hotel
Nairobi, Kenya.**

**Nelson Mango¹, Josephat Cheng'ole², Gatarwa Kariuki³
and Wesley Ongadi⁴**

¹ *Social scientist, International Livestock Research Institute, P.O. Box 30709, Nairobi, Kenya,
n.mango@cgiar.org*

² *Socio-economist, Kenya Agricultural Research Institute, Perkerra, P.O. Box 32, Marigat, Kenya,
cjmulindo@yahoo.com*

³ *Research Technician, International Livestock Research Institute, P.O. Box 30709, Nairobi, Kenya a
gatarwa.kariuki@cgiar.org*

⁴ *Consultant, ICRAF-Kisumu, P.O. Box 21599 Kisumu, Kenya, wongadi@yahoo.com*

Executive summary

This paper draws on qualitative research on Social Aspects of Dynamic Poverty Traps conducted in Vihiga, Baringo and Marsabit districts, Kenya. Using qualitative research techniques such as case study approach and community workshops, the paper explores the strategies that have been used by certain households to move out of poverty in the past ten to twenty years and reasons for descent into poverty by some households in the same period. Findings from this study indicate that poverty is not only an outcome of economic processes, but also an outcome of political, environmental and social processes that interact with each other and frequently reinforce each other in ways that exacerbates the deprivation of the environmental situation in which people live.

The case studies presented in this report give people's description of what living in poverty means and bears eloquent testimony to their pain. While it is tempting to think that for those who live in poverty escaping from it may seem impossible, findings from this study show that it is not. The case study materials presented in this paper indicate that poor people are not passive to their predicament but have time-tested coping and survival strategies and institutions that can even enable some of them to escape from poverty. Such strategies and institutions can be integrated into innovative poverty reduction programs because they present enormous potential for bottom-up approaches to poverty alleviation.

Households that managed to escape poverty in both Vihiga and Baringo sites, investing in education that leads to a well paying job both in the public and private sector and for making informed choices for those who remains in the village was found to be one of the most important strategies for escaping poverty. Other strategies were diversification in on-farm and off-farm enterprises, having a wider social network for acquiring knowledge and information and engaging in cash crop farming. Diversification in income generating activities both on-farm and off-farm was found to be the main strategy that was used by households that remained nonpoor not to slip into poverty in all the three sites.

Death of a breadwinner, funeral expenses (including slaughtering of livestock) following death of a family member and poor health and health related expenses were found to be common factors causing households to fall into poverty in all of the three sites. Other factors that were common to the three sites and were found to be responsible for falling into poverty were, low levels of education that can not lead someone to a well paying job, large family size (high dependency), and loss of employment. The main reasons for remaining poor in all the three study sites are low levels of education that is insufficient for one to secure a well paying job and make informed decisions, lack of resources and having limited social network. Poor health and frequent deaths in the family were other factors that kept people in poverty in the three study sites. People spend most of their resources in medical and funeral expenses.

There is a direct correlation between natural resource management and poverty. Households that managed to escape from poverty and those that have remained nonpoor were more concerned with natural resource management than households that did fall into poverty and remained poor.

1.0 Introduction

The biggest challenge facing Kenya today is high levels of poverty among its citizens. Poverty has been persistent in Kenya despite government's effort to combat it through national development programs. Results from studies on poverty in Kenya show that the poverty situation has deteriorated overtime and especially in the 1990s. The deterioration in living standards in the country is reflected in the rising number of people without food, inadequate access to basic necessities such as education, safe water, sanitation, and health facilities (Manda *et al* 2001). Most of the poor are in the rural areas and include subsistence farmers and pastoralists (*ibid.*). Kenya's current Poverty Reduction Strategy Paper (PRSP) perceives poverty as inadequacy of incomes and deprivation of basic needs and rights, and lack of access to productive assets as well as social infrastructure and markets (Republic of Kenya 2001). The minimum level of consumption at which basic needs are assumed to be satisfied is known as the poverty line (Manda *et al* 2001). In monetary terms, absolute poverty in Kenya is pegged at KShs 1239.00 per person per month in the rural areas and KShs 2648.00 per person per month for the urban areas of the country (Republic of Kenya 1997).

This paper is an effort to provide the sociological dimension of poverty dynamics in some three sites in Kenya. In these sites, quantitative⁵ surveys preceded the qualitative work. Although economic factors are certainly significant in explaining the poverty levels among rural agricultural households, they fail to account for all causes of household poverty and why some households become and remain poor while others come out of poverty yet they seem to operate within the same economic environment. Sociological factors are also significant and, for some groups like pastoral communities, may even outweigh economic considerations. Furthermore, in many cases, they establish the context in which the economic factors become significant. Clearly, the economic environment, though necessary is not sufficient to account for poverty levels within rural households. In order to understand these dynamics, the study focused on the following three sites: Madzuu in Vihiga district, Dirib Gombo in Marsabit district and Ng'ambo in Baringo district. In these sites, the study acts as a complement to an earlier survey analyses that focused on the quantitative factors determining poverty traps among rural households.

The main objectives of this social component of the study were:

- 1) To characterize, identify, and analyze dynamic poverty processes using social and historical methods, with particular attention being given to the effects of shocks on welfare dynamics and the relationship between natural resources management practices, changes in natural capital and human welfare dynamics.
- 2) To identify existing and potential strategies for households to escape poverty traps and to understand the constraints in employing them.

⁵ The quantitative and qualitative study is part of a collaborative project that involves Cornell University, World Agroforestry Centre (ICRAF), Kenya Agricultural Research Institute (KARI), and University of Nairobi (UoN), institutions that have come together to undertake a research on rural poverty traps in East Africa. Broadening Access and Strengthening of Input Systems (BASIS) and Collaborative Research Support Program (CRSP) of USAID are funding the study. The work is also being supported by supplementary grants from IDRC (Canada) and the Rockefeller Foundation.

Following a brief overview of the research methods and study sites, the paper gives an account of household level factors affecting welfare change in the research areas. This is determined by exploring in detail the poverty dynamics at household level by looking at strategies that were deployed by some households that have managed to move out of poverty ten to twenty years ago and reasons for descent into poverty by certain households over the same period. Strategies for remaining non-poor and reasons for remaining poor by some households over the same period are also determined. The last part of the paper tries to understand the links between natural resource management and poverty at household level.

2.0 Research methods

The overall approach to the research was qualitative. The following qualitative research methods were used in data collection:

In all the three sites, the study began with a one-day farmers' workshop. The workshops acted as a forum for giving feedback on results of the quantitative work that had been carried out in the sites while at the same time introducing the qualitative study. During the workshops, community-level focus group discussion was the main method that was used to gather information from farmers. Sub-group discussions and presentation of various topics closely related to the research theme in plenary sessions were used to solicit farmers' views on a wide range of important concepts related to poverty processes. The workshops sought to understand the main causes of poverty and general poverty trends in the communities living in the three sites. Further, the discussions helped identify the strategies employed to escape from poverty at the community and household levels. The community members in each of the three sites were assembled at one central place and with the use of pre-set guidelines gave data on poverty trend lines and timelines on poverty-inducing natural or artificial occurrences.

The workshops were then followed by case studies of selected individual households⁶. Ethnographic interviewing technique was the basic methodology applied in carrying out case studies. Through a historical analysis, household-specific histories of welfare and natural resource management dynamics were explored. Other techniques included taking count of critical events that influenced farmers' welfare, life histories of individual households and listening to farmer narratives. The procedure used in identifying the households for the case studies borrowed heavily from the earlier quantitative work. Purposive sampling technique was used in selecting, from quantitative survey samples, households to be interviewed for the qualitative work. The households were selected using poor - nonpoor matrices constructed from the quantitative panel data on per capita household income of the previous BASIS study. In each site two households were to be selected for interviewing from (i) poor – nonpoor and (ii) nonpoor - poor cells of the transition matrix for the site. Also to be sampled were two households each from the poor-poor cell who (iii) enjoyed an increase in income per capita between the two survey periods, (iv) experienced no significant change in income per capita between the two

⁶ In the text, Pseudonyms have been used for individual household members interviewed instead of their real names.

survey periods, and (v) who suffered decrease in income per capita between the two survey periods. This was to be repeated on the nonpoor – nonpoor cell, covering two households each who (vi) experienced an increase in income per capita between the two survey periods (vii) suffered a decrease in income per capita between the two survey periods, and (viii) experienced no significant change in income per capita between the two survey periods. Based on these categories, a total of 16 households were to be selected for interviewing in each of the three sites.

However in our sampling only Madzuu site in Vihiga district, met the above set sampling criteria fully. In Ng'ambo site, Baringo district, nonpoor-nonpoor (increase) and nonpoor-nonpoor (decrease) subcategories had only one household each, there were no cases for nonpoor – nonpoor (no significant change) subcategory and it turned out that there were three cases in poor-poor (decrease) category hence the sample size yielded only 11 households. In this last category the three cases can be explained by the fact that during the selection, one case was not falling into this category but after listening to his narrative and during the analysis, he fell into this category. Dirib Gombo site in Marsabit district yielded 12 households because there were no households in poor – nonpoor category, and there was only one household each in nonpoor - nonpoor (decrease), and poor – poor (no significant change) sub categories.

The last phase of the study involved talking to key informants in order to corroborate and expand upon the key issues and details that emerged from the focus group and household interviews. Ethnographic interviewing technique was used to source information from the key informants. Other study techniques used to solicit information from key informants included recording oral histories that they gave and reading of text to them based on our findings from case studies.

3.0 The Study Sites

The study was carried out in Vihiga district (Western Province), Baringo district (Rift Valley Province) and Marsabit district (Eastern Province). Vihiga District lies in the highlands of Western Kenya, which is part of the Lake Victoria basin. The district is predominantly a high potential agricultural area covering approximately 563 km². The annual rainfall range for the district is between 1800 mm and 2000 mm, its distribution is bimodal, and the amount is considered adequate to support a range of crop and livestock species suitable for the area. Population growth rates are high despite a widespread incidence of HIV/AIDS, resulting in an extremely high population density of 800 to 1100 people per square kilometer (Republic of Kenya, 2001a). The average farm size has been steadily declining and is now 0.5 ha, and declining soil fertility is a widespread problem (Amudavi, 2002, Mango, 2002). A large proportion of the labor force is engaged in agricultural and livestock production activities. Poverty rates are amongst the highest in Kenya. In 1994, 53% of Vihiga District's population fell below the rural poverty line, increasing to 58% in 1999 (Republic Kenya, 1998, Republic of Kenya, 2003a). HIV prevalence rates remain high, up from 12% in 1994 to 25% in 2000 (Republic of Kenya, 2001b). Food insecurity is high with some areas experiencing up to 9 months of food deficiency. Madzuu, the research site, falls in Mungoma location of Vihiga division.

The second study site is located in Baringo district (Rift Valley Province). Ng'ambo location where the study was done is found in Central Baringo. Sampled households are spread within three villages, Ng'ambo, Loropil, and Sintaan. The region represents the floor of the part of the Rift Valley lying between 36^{00'}, 36^{015'}

E and 0⁰20', 0⁰30'N. The Ilchamus ethnic groups who were originally pastoralists but are now embracing agro-pastoralism, inhabit the area. The community has kept and relied on livestock whose mix has changed over a period of time. Initially, zebu cattle were the major livestock kept. There has been overgrazing and a change in vegetation cover from grassland towards bush land, and goats and sheep are the dominant livestock kept.

The area around Ng'ambo has been experiencing a cycle of droughts over the years. Very severe droughts tend to come every 10 to 15 years and small droughts just every three to four years. On average, the area receives a monthly rainfall within the 50 – 55 mm bracket. Available records indicate that Ng'ambo area receives heavy rainfall on an average 40 – 45 days a year. The population density is 76 persons/km² representing one of the most densely populated areas of Marigat division. Besides livestock keeping, irrigated crop production can be regarded as the most important supplemental livelihood together with bee keeping, fishing and craft making.

Marsabit district in which the third study site was located is one of the 13 districts that make up Eastern province of Kenya and covers a total area of 61,296 km² which is about 11% of the total area of Kenya (Republic of Kenya, 2001c). It is the second largest district in Kenya after Turkana district. It is located between latitudes 02⁰45' and 04⁰27' North and longitudes 37⁰51' and 39⁰21' East at an average altitude of 300–900m above sea level over most parts; Mt. Kulal is the highest point at 2355m above sea level. Dirib Gombo⁷, the research site, is one of the 28 locations that make up Marsabit district. It is found within Gadamoji division (ibid.) and lies on the southeastern windward slopes of Marsabit Mountain. The terrain is of gently rolling slopes with several dry riverbeds that drain water during the rain season. It covers an area of 98.5km² with a population of 3,718. The population density for this area is 38 per km². *Boran* and *Burji* are the two main ethnic communities settled in Dirib Gombo. The *Burji* are predominantly farmers and keep oxen primarily for plowing while *Boran* keeps more livestock. The climate is characterized by low rainfall, which falls in two seasons (April/May and November/December) and high levels of evapotranspiration. More than 97% of the district is rangeland. Livestock keeping is the major economic activity with pastoralism being the dominant mode of production. Crop farming is practiced on less than 3% of the district's land (about 3,512 ha).

4.0 Household level factors affecting welfare change

This section of the paper explores the social aspects of dynamic poverty traps through case studies of individual households in the research sites. Analytically the section determines the strategies that have been deployed by certain households to escape from poverty and factors that have led to descent into poverty. Talled to this are reasons for avoiding descent into poverty and remaining in poverty. In this section, an attempt is made to create a link between natural resource management and poverty dynamics.

4.1 Reasons for escape from Poverty

⁷ Dirib is Boran word for valley while Gombo is a traditional salt licking container for animals carved out from a tree trunk. Dirib Gombo therefore means shaped like a valley.

In Madzuu, Vihiga district, acquiring good education and securing a well paying job either in public or private sector were very important factors for people who were poor ten to twenty years ago, and are now not poor i.e. have managed to escape from poverty. Apart from education and getting employment other strategies that have been used to move out of poverty by the Maragolis of Vihiga district include diversification in on-farm and off-farm enterprises such as buying more land to diversify in crop production, investing in dairy farming and other livestock, and owning other businesses such as shop-keeping. Earnings from such businesses have helped in stabilizing households and cushioning them from slipping into poverty. That education has been an important strategy for escaping poverty in Vihiga district can be illustrated by the case of Okeny Lubete in Box 1 below.

Box 1: Poor - Nonpoor cases

Okeny Lubete was born in 1955 in Vihiga district. After his secondary education, he trained as a primary school teacher. He is married to a fellow primary school teacher and they have six children. He considered himself poor twenty years ago because he was coming from a poor household. The poverty in his parents' household could be attributed to family feud on land and had to flee from their home to Kitale, in the Rift Valley, where his father worked for a white farmer who paid him KShs 3.00 per month. This was too low to secure his education. When they came back from Kitale, the brothers to his father had grabbed all the family land and they had nothing left other than the house his father built in his grandfather's compound. Okeny formed a work group with other youth in the village through which they offered their labor to other village members. This way he secured money to go through primary and secondary education. After his secondary education he joined primary teachers training college and was employed as a primary school teacher upon graduation. He then got married to a fellow primary school teacher and they have got six children. He managed to escape from poverty through education. He states that:

"Compared to twenty years ago I am better off."

Okeny and his wife are members of a Teachers Savings and Credit Cooperative Society through which they acquire loans. They have used the loans to buy two acres piece of land, built a permanent house, and bought two crossbred dairy cattle.

Harrison Otari Agade was born in 1949, in Kisiyena Sub-location. He went to school up to standard eight and dropped out after the death of his father. In early 1970s to late 1980s he was very poor. He inherited only one acre piece of land from his father. Towards 1990 he decided to link up with his uncle who was working in Naivasha. His uncle helped him to secure a job at Pana Foods Company as a loader. In 1985 he left Pana Foods Company and joined Kenya Breweries Company, packaging department still as a loader. Agade's cousin had a petrol station in Kisumu and he asked Agade to manage it on his behalf. *"My cousin understood my problems and thought it wise to help me. The petrol station job was a turning point in my life because while at the garage, I learnt how to drive and got driving license"*, he said. Through his own networks with friends he managed to get a driving job with Cooperative Bank, Kisumu branch. According to him, this was a well paying job that he had to leave working at his cousin's petrol station. He worked in the bank for eleven years. *"In the bank my life was better off because I was being paid well and I also received many allowances"*, he added. It is during this time when he was working in the bank that he managed to educate his children, built a small permanent house and bought two cross bred dairy cattle. He also used to lease land from neighbors and plant maize, as his family had grown larger. His eldest son is an office messenger in the Central Bank of Kenya and he helps him in paying school fees. Though he had low education, good rapport with friends and relatives helped him move out of poverty. Apart from crop farming, he also owns two crossbreed dairy cattle, which gives him milk on a daily basis that he sells to villagers. Every day he earns KShs 140.00 from milk sale.

The case of Okeny Lubete also illustrates how acquiring education can be a means to other strategies of escaping poverty. After acquiring his education, he was lucky to land a job as a primary school teacher. He invests part of his salary in a savings and credit cooperative society. This enables him to acquire loan, which he uses to diversify his income earning activities. Ability to establish a wider network was also

found to be a strategy for escaping poverty. There are households that have managed to come out of poverty by establishing wider social networks some of which go beyond the village. Social networks are vital as they act as linkages for acquiring certain commodities that one might not have including securing employment. The case of Harrison Agade a farmer in Vihiga helps to illustrate this (see Box 1). Agade did not go past primary education. However through his own networks, he managed to escape poverty through securing employment in various companies. Through establishing social networks, hard work, discipline and willingness to change professions, he moved from a mere casual worker in various companies to a driver with a commercial bank that was well paying. He acknowledged that his life did improve when he was employed in the bank. From his salary in the bank he managed to educate his children, buy more parcels of land and venture into dairy farming. He also networked with his area Member of Parliament who secured employment for his son in the Central Bank of Kenya as an office messenger.

Getting employed in the government or private sector was still found to be an important strategy for moving out of poverty among the *Ilchamus* of Baringo district. Either one had to go for formal employment himself or invest on the education of his/her children who, if lucky, can secure employment in the private or public sector. Through sending remittances back home, they bail their parents out of poverty. See the case of Alice Lenasiaku in Box 2 below.

Box 2: Poor-Nonpoor cases

Alice is a widow living in Sintaan village of Ng'ambo location. By 1984 she had sunk to the lowest levels of poverty having lost her livestock to Caprine Bovine Pleuro-Pneumonia (CBPP) and drought. This was the time she remembers going to stay with her parents until conditions improved and stabilized. By the time the 1999/2000 drought came, she had built her herd of livestock again through remittances that she got from her son who was now working as a primary school teacher. Though the drought of 1999/2000 claimed some of her livestock, she managed to pull through as the remittances from her son cushioned her household from starvation. She also got some funds from *Letboi Women group*, which she is a member. In addition, relief food was available and the family did not go without food for even a single day.

After the drought of 1999/2000, Alice decided to start a business of selling vegetables and fruits to boost her income. She started buying and selling vegetables within Longewan area, before she was given a tender to supply vegetables to a local secondary school. This was when she begun buying vegetables from the Irrigation Scheme where there was a larger supply. She now supplies the school with half a sack of vegetables daily and sells the rest in the open-air market at Marigat shopping centre. Things have taken an upward trend for her because in 2002, another of her sons was employed as a prison warden improving the income to her household.

In their women group, they are involved in making gourds for sale, fundraising for each of the members and general farming. They have leased land from the irrigation scheme where they grow Kenya Seed Company maize collectively then share the returns to each of the individuals. She hopes to upscale her business and thereby acquire wealth for the household. As of now, she believes life is fairer than it was in 2002. *"I have been poor, but I am no longer poor"*, she said.

Paul Lengusoranga is a man who has known the faces of poverty and wealth through the years. He was born in a poor family in Ng'ambo and therefore had to struggle for survival from an early age. In the 1970s while a bachelor and staying with the mother (father passed away earlier on in life), Paul was out daily doing casual menial jobs. He used to work in the Irrigation Scheme for very little wages. He only managed to raise enough money to buy livestock when he got short stints at KARI – Perkerra and KETRI offices in Marigat. By the time he was marrying his first wife in the early 1980s, he had a few livestock to himself. Later on he began dry land farming and farming under irrigation. By 1990, Paul's household was considered among the wealthy households in the community. However, he had no child (wife was barren). The drought of 1991 forced him into poverty once again. He was left with very few animals. He was lucky to find help from one of his *Ilparsaina* clan members who lent him a cow to milk. He finally managed to build a herd and flock from the animals and by mid 1990s, his household was wealthy again. He took a second wife.

He is trying his hand at farming. Paul owns land under irrigation and hires more. He plants Kenya Seed Company maize and some horticultural crops (melons, tomatoes and onions). The income from the 2003 harvest was used to purchase 3 head of cattle. The remaining goats have multiplied and together with a few purchases had a total of 30 by the close of November 2003.

Other strategies that were used to escape poverty by some individuals included engaging in crop production at the irrigation scheme (see case study above). Income from crop harvest is then ploughed in restocking livestock after drought or floods. Even though the social system of helping one another is now breaking down, some individuals still get assisted to come out of poverty through donations and gifts from their clan members. The case of Paul Lengusoranga helps to illustrate this. Breeding of the stock remaining after drought was also mentioned as a strategy of coming out of poverty. Other strategies of escaping from poverty in this site include, engaging in small or large scale business, engaging in brewing local beer though illegal and outlawed, and belonging to an active women's group that are active in, collective farming in the Irrigation Scheme such as collective seed growing for Kenya Seed Company (see the case of Alice Lenasioku).

In Marsabit site there was no case of a household that successfully escaped from poverty.

4.2 Reasons for remaining Nonpoor

Diversification in income generating enterprises both on-farm and off-farm was found to be the main reasons for remaining non-poor in all the three sites. Households that have remained non-poor started their lives in a good note by first acquiring education that landed them in well paying jobs. They also came from stable families with well to do parents. For instance Enane Lukose, a farmer from Vihiga district stated that:

“My father was a church minister. He was keen on my education and supported me up to college level. Now I am a retired school teacher and I still enjoy the benefits of my education through pension.”

For individuals who are still in employment, they use their salaries to diversify in other income sources while retirees are covered by their pension. In households where the household head and his spouse are both in formal employment, they are better placed to remain nonpoor as they are capable of combining their income to cushion themselves from falling into poverty. These households still use their savings to invest in other income generating enterprises. They take loans as well from their respective savings and credit societies to initiate income-generating activities and also to educate their children. When their children complete schools and are lucky to secure employment, they send remittances back home to support their parents. In Vihiga district some of the farm enterprises that households that remained non-poor diversify in include cash crop farming such as the growing of coffee and tea, buying land in a settlement scheme in Lugari district and growing hybrid maize in large scale, and keeping high yielding crossbred dairy cattle (see Box 3). Zero-grazing dairy cattle farming is considered to be a very capital-intensive adventure and thus not an enterprise for the poor. However it gives high returns. Other income generating activities off-farm that have made these households not to slip into poverty include engaging in businesses such as shop keeping, plumbing, carpentry, and owning rental houses.

Box 3: Nonpoor – Nonpoor case

Jomo Opatia is a seventy-two years old farmer from Vihiga district. His wife Winnie is sixty-seven years old. Jomo was a registrar of the high court while his wife Winnie was a primary school teacher. They are all retired civil servants. They had six children, two died and the remaining four are all employed. He owns a permanent house. He said that twenty years ago he was not poor because he was already working and had bought four acres of land where he planted tea. He also inherited six acres from his father. Of the six acres of land he planted coffee on four acres. He also owns crossbred dairy cattle, which he keeps in a zero grazing unit. Another six acres of land, which he owns, is in the settlement scheme in Lugari district and he has settled his eldest son there.

He said that because of education, he has been able to think ahead not to fall into poverty. He performed well in secondary school and was offered a job in the civil service immediately. While he and his wife were still in the service, they joined various Savings and Credit Cooperative Societies. They severally took loans in turn to finance their children's education and other development projects in the family. He has been able to avoid poverty through diversification in various enterprises and by educating his children who are all working. He owns a commercial plot in Bukuga market where he has constructed a bar and a restaurant, which are both operating. He encourages his children to save and invest in business and farming.

Among the pastoral communities such as the Ilchamus of Baringo district and the Boran of Marsabit district, households that managed to remain nonpoor are those who adventured into crop farming as well. In Baringo, strategies such as owning a piece of land and practicing horticultural farming and engaging in maize seed production for Kenya Seed Company within the Perkerra Irrigation Scheme were some of the ways of evading poverty. Horticultural crops, which have got high market value such as peppers, cabbages, kale and onions, were being produced in the irrigation scheme. These crops are mainly exported and fetch very good market price. Proceeds from crop farming in the irrigation scheme are used to purchase livestock, pay for children's school fees and purchase other commodities. Monica Kararayo and Joyce Lebene represent excellent examples of farmers who have managed to escape from poverty by engaging in farming at the irrigation scheme.

Monica remembers the late 1970's and early 1980's with a spat on the ground and a curse. During this period life was a nightmare to her, as her family had no iota of wealth (livestock). She told us that it took her ten years to come out of poverty twenty years ago. Since then she has never been poor. She now owns in excess of 20 head of cattle and more than 100 small stock. According to Monica, her household is one of the wealthiest in the region. Monica narrated to us that:

“Perkerra Irrigation scheme was the savior of my household. My family and I entered into the production of pepper, which has got high market value 20 years ago. We also planted maize for food and onions for sale though pepper provided the bulk of our income. With income from sale of the first crop, we bought one cow and two goats. With next income from crops we bought more goats.”

Investing in children's education increases their opportunities to get employment in the government and private sector. Monica and Joyce both invested in their children's education. They are working and they do send remittances back home that play an important role in acquiring wealth. Though some households blamed education as a contributor to their poverty state, those households with educated children were on the wealthier side.

It appears like land outside the irrigation scheme did not play a big role in increasing household wealth mainly because no serious returns could be realized from the same because of high rainfall variability in Ng'ambo. Belonging to an active

women group is also another strategy of avoiding being poor. Both Monica and Joyce are members of active women groups. Monica's group is also involved in seed production for Kenya Seed Company.

In Dirib Gombo, engaging in mixed farming as well as remaining in employment was found to be important strategies of remaining nonpoor. All the four case studies studied in this area, the individuals are in employment or are retirees or their children are in employment. They have diversified their farming activities by practicing mixed farming through keeping of livestock and engaging in arable farming which include the growing of cash crops such as tea and *miraa (khat)*. Some of these households whose farms are situated near boreholes engage in growing high value crops such as kale and tomatoes through irrigation. The boreholes are being constructed and maintained in the area by Intermediate Technology Development Group (ITDG). Some of the households that have remained nonpoor invested in their children's education and the children are now employed in government and private sectors. They send remittances back home, which their parents plough into farming and some they use to stock livestock. This way they are cushioned from falling into poverty. Meso Galmagar from Dirib Gombo for instance told us that the government employed his eldest son as a police officer and his son normally send to him some money, which he uses to improve on his farming.

4.3 Reasons for falling into poverty

Twenty years ago, there were individuals who were not poor in Madzuu but can be seen today as having fallen into poverty. From our case studies, we managed to identify nine most important factors that cast households into poverty in Madzuu.

The *first* and most important factor is death of major income earner in the family. Most households whose breadwinners die for whatever reason, very quickly degenerate into poverty. This is because overcoming the effects of death is very difficult because it requires a lot of money. If the deceased was the sole income earner, then it takes longer for the family to recover or they just do not recover at all and fall into absolute poverty. See the case of Abisai Oyengo (Box 4) below. When his father died his family started experiencing problems. So many children drop out of school particularly after their parents, who had been paying for their school fees have died.

Box 4: Nonpoor - Poor case

Abisai Oyengo was born forty-three years ago in Madzuu and is married. He has four children, two girls and two boys from his first marriage. His second wife has got no child and his first wife separated from him because she felt he is an alcoholic and irresponsible. He inherited all the two acres of land of his father as the only brother he had died. Abisai attended primary school up to class seven after which he went to Muranga District in Central Province where he was employed as a casual worker in a coffee plantation. He came back home after continuous malaria attack. He has a semi permanent house and no livestock. Twenty years ago he was not poor because he was depending on his father who was working in Nairobi. More so their land was giving high maize yields (twenty to thirty bags per season) because of regular and continuous application of animal manure. His father could sell surplus harvest to support him and his siblings. The father had seven cattle that produced surplus milk and manure.

Following the death of his father, mother and brother, he has been left poor as all the cattle were sold to meet their funeral and medical expenses. He is unemployed and depends on low paying casual jobs in the village. His land is unproductive because he no longer has cattle to provide him with manure that he can use to rejuvenate soil fertility and at the same time he cannot afford to buy fertilizer. His sister who supports him fell sick sometime in 2002 and has not yet recovered and can no longer provide him with farm input. He rents out one and half acres of his land and works on half an acre, which yields half a bag of

The *second* factor has to do with heavy funeral expenses when a member of the family dies. Families incur heavy expenses during funerals when they lose one of their own. These expenses incurred are mainly related to buying the coffin and food for taking care of mourners and church ministers who conduct the funeral ceremony. In most cases family members use most of the assets of the deceased to meet these expenses. In Madzuu these include slaughtering of livestock to feed mourners as well. Wealth is also lost when livestock and other assets are sold to raise money for meeting funeral related expenses. During funerals, there is indiscriminate harvest of trees to provide firewood that is used in cooking and lighting fire for people to warm themselves by at night, thus interfering with the natural resources. This is exactly what Abisai Oyengo and other people like him had to undergo when they lost their family members. The *third* factor is loss of employment from the public and private sector through retrenchments and retirement. Mr. Richard Opatia, one of our respondents in Madzuu, went for an early retirement after regular disease attack. He was working for the Ministry of Agriculture as a messenger. He told us that he opted for early retirement for fear of being sacked. Today he lives in poverty as he does not have proper source of income. *Fourth* factor is poor health and health related expenses. Households where there is a very sick member tend to drift into poverty as most family resources go towards meeting their medical expenses. People with poor health can also not participate in productive activities. Their family members as well have to divide their time between taking care of them and engaging in productive work. The *fifth* factor has to do with small land holdings. Reduction in land sizes is one of the major factors that have cast some households in Madzuu into poverty. Many of the households rely on farming as a source of income. Due to population increase and cultural requirement that every son must inherit a portion of his father's land, land sizes per household have seriously reduced. Average land size per household in Madzuu is estimated at 0.5 hectare. Richard Opatia for instance has got only a quarter an acre piece of land yet he supports many descendants.

The *sixth* factor is unproductive land. Because households own very small land sizes which they cultivate every season; the soil fertility has gone down. Over-cultivation of these small land holdings coupled with non-use of soil fertility replenishment practices is the main cause of very low yields from these plots. Maize yields from these plots are too low that they hardly support farm households for three months. People have to turn to buying maize from the markets. This has increased the level of poverty in individual households. See the case of Abisai Oyengo above whose plot produces very low crop yields due to unproductive land.

Low level of education is the *seventh* factor that has cast some households into poverty. Richard Opatia was not poor ten to twenty years ago because the ministry of agriculture employed him. However because of his low level of education, he could only be employed in the lowest cadre where he earned a very low salary. With his poor health and increased responsibilities, he had to fall into poverty. Similarly Abisai Oyengo, though was not poor initially as he used to receive support from his parents, could only be employed as a casual worker both in a coffee plantation in Muranga district and in his own village because he had low levels of education. When his parents died, he plunged into poverty.

The *eighth* factor is high dependencies. This can be as a result of having a large family of one's own or taking care of other relatives' families. High dependency on a few individuals in the family or on relatives is a cause of falling into poverty by some

households that were not in poverty. Richard and Abisai have got so many dependants in their households that they have to take care of. Ten to twenty years ago they did not have many dependants.

Land conflict is the *ninth* factor that plunge households into poverty. Because of high population densities, land disputes are very rife in Madzuu. During land subdivision a lot of conflicts arise in most families and there are many land cases lying in court. In such families, people fear making long-term investments on the pieces of plots that they work on. Richard Opatia told us that one of the things that have cast his household into poverty is a long running legal case with his brother, who altered the boundary of his farm. “*I spent all my retirement benefits fighting for my land*” he said. Alcoholism and other domestic problems create instability in families. Such families are not productive and in most cases end up in poverty.

Among the pastoral communities that we studied, frequent droughts and floods are the main factors that are responsible for people falling into poverty. Droughts are often accompanied by both human and livestock diseases. Falling into poverty in Ng’ambo is the easiest. It only requires a one-day heavy rainfall accompanied by flash floods and most households will be in poverty. For households that fell in poverty in Ng’ambo Baringo district, they mostly attribute it to the droughts of 1991, 1999/2000 and 2003. Both livestock and human diseases often accompanied these droughts. A lot of money was being spent in health care for family members. Sometimes when there are floods it sweeps crops and livestock to Lake Baringo. In Marsabit floods were not mentioned as a real problem as such. However frequent droughts and unreliable rainfall were a real concern.

Box 5: Nonpoor-poor cases

Lopokoit Kamakil considers his household to be poor. He says he has only 6 goats. His poverty stemmed from the drought of early 1990s (most probably 1991). Before then, he had 30 goats, 20 sheep and 30 head of cattle. His relatives, mainly from the *Ilkapis* clan helped him with 2 goats, which he bred and built a flock within 5 years. He had even acquired some cattle before the 1999/2000 drought, in addition to the goats. All the animals died from the drought and he was left with nothing. He has no money to hire land in the Irrigation Scheme and only relies on the portion outside the Scheme to grow maize, beans and vegetables for food. This however happens only when the rains are available. His crop for the year 2003 failed because the rains did not come as expected. Kamakil only goes to the Irrigation Scheme to offer his services as a casual laborer. The jobs are not always available. There are times when a week can pass without him getting anything to do within the scheme. These are the times when his wife has to go begging from relatives.

Halima Girma was born in 1973 in Sagante location of Gadamoji division, Marsabit. She got married to Girma when she was 15 years old. Her parents were rich in terms of livestock and had 8 acres of land but her husband was poor when he married her. The only piece of land he owned was the $\frac{1}{4}$ acre plot where Halima lives with her children. Halima’s husband became sick and died while in Nairobi. When he was alive he used to send money to them every month and she and her children lived comfortably. After her husband’s death life has never been the same again, she had nothing except the plot. She has four children, the first-born is a boy aged 14 years and the last-born is a girl aged 2 years. Three of her children are going to primary school thanks to the free primary education. Due to the difficulties she was facing in raising her children alone, Halima approached the community elders for assistance. They allocated her a small plot next to the community borehole where she plants kale, which she sells to support her children. She pays no rent on the plot but she has to pay for the water used. She sells her kale at Marsabit market and she makes one trip per week with average sales of KShs. 600 per trip. She says that though she works alone on the plot her crop output is increasing.

In Marsabit, migrants were the ones who tended to fall into poverty. Migrants who were rich in their original homeland found themselves landless in their new homes. They had to lease land from the natives to establish their own homes and to cultivate

crops. Because of just being tenants, incentive to invest in the land properly was lacking and was a root cause of falling into poverty. Mr. Dub Galma migrated from Ethiopia. In Ethiopia, his parents had a good number of livestock, 70 heads of cattle and 100 goats. In 1973 Somali raiders took away their animals. Later in the year the community (clan) contributed cattle to assist them build a new herd. Due to poverty and lack of land they left Ethiopia for Kenya and by the time they reached Marsabit in 1982, they had only 20 goats since most had perished on the way. They live in a grass-thatched house and they don't have land to farm. None of the members of the household belongs to a group. Dub's father has been sick for 4 years, his mother is aged and his son got "lost" in Nairobi where he went to look for casual work.

Also in Marsabit, death of a breadwinner was still found to be a factor that plunge households into poverty. See the case of Halima Girma (Box 5 above) who was born in a rich family and got married to a working class husband. She fell into poverty when he died. Other factors include drought that come with both livestock and human diseases.

4.4 Reasons for remaining poor

The main reason for remaining poor in all the three study sites is low levels of education that is insufficient for one to secure a well paying job and to make informed decisions. However there were also site-specific reasons that were advanced by individual households for remaining in poverty. For example in Madzuu where people practice subsistence mixed farming type of agriculture, small land sizes that are unproductive was mentioned as one of the reasons for remaining in poverty. The small parcels of land are cultivated continuously without soil replenishment practices. Some households also mentioned prolonged illness of household heads as one of the reasons for remaining in poverty. Kaulenti Chisenga, Box 6 below, has a dislocated backbone, which has forced him to remain in poverty. Most of his income goes towards medical expenses instead of offsetting poverty.

Box 6: Poor – poor cases

Kaulenti Chisenga was born in 1947 in Madzuu and is separated from his wife. He has seven children, four sons and three daughters. All the three daughters are married though no bride wealth has been paid yet. Twenty years ago he was poor, which he attributes to his low level of education. He attended primary school up to class three and then dropped out following the death of his father who had been paying his school fees. This was the main cause of his being poor. He left for Nairobi where he was doing casual jobs that were low paying (earning KShs 30.00 to KShs 50.00 per day). He could not make any savings. The other cause of poverty in Kaulenti's household is the small parcels of land he owns. Kaulenti had four brothers with whom he had to share his father's land. After land subdivision, they ended up with very small parcels of land. Kaulenti himself got only three-quarter acres. Kaulenti's ill health is another cause of poverty in his household. He has a back problem, which emanated from a dislocation of the backbone. Kaulenti worked as a loader in trucks when he was in Nairobi. One day he attempted to carry a 135kg bag on his back and dislocated his backbone. He had to retire from this job. He spent all his benefits on treatment. Due to his poor health, his wife went to look for job in Nairobi ten years ago never to come back. Kaulenti experiences labor constraint in his farm. He is unable to hire labor because a big portion of his money goes to medical expenses. He depends on handouts from his relatives to supplement his subsistence.

His family has remained in poverty due to low levels of education among the children. None of them went beyond primary school. In this household, indicators of poverty as spelled by most people in this region are very much visible: poor conditions of the house, mud walls, which are not well maintained, leaking grass thatched roof and inside the house, the farmer has got old stools which need repair as seats. He does not own any livestock. The ones he had were sold out to meet medical expenses. He does not have sufficient food almost throughout the year. His land has been exhausted of nutrients as it has been tilled continuously for the last twenty years without nutrient replenishing techniques.

Diseases are very common in Kaulenti's household and its neighborhood. Malaria attacks Kaulenti regularly and this coupled with complication of his back has cast him into poverty.

Zablon Kuyabi admitted that he is a poor man. He went to primary school up to class two in Kisiyenya. His household has been plagued by a series of deaths. In 1983 he lost his first-born son, then twin daughters at birth in 1985. In 1987 he lost a son to malaria. In 1994 he lost another son who was living in Nairobi. His sickness was not known. In 1995 the second last-born son died while in prison. He had been jailed for five years for robbery with violence. In 1999 he lost his fourth born son to unknown disease. In the year 2000 his daughter who was staying in Kisumu died leaving behind two children. He suspects she was suffering from malaria. From 1996, his wife has been very sick and she is too weak to farm. He has only two sons left. One is serving a jail sentence for assaulting him and a neighbor. The other son ran away from home and for the last ten years he has not been seen. He suspects he must have died as nobody hears from him. The remaining daughter is married and his son-in-law volunteered to pay someone who planted tea for him on his half an acre plot. For the past twenty years he has been depending on his daughter and son-in-law to give him food.

The death of his children has made him become poorer. One of the grand daughters he is living with is epileptic and cannot work in the farm.

Other reasons include lack of resources to engage in modern farming techniques and to diversify into other income generating activities and frequent deaths of household members. Frequent deaths within Zablon Kuyabi's household, see Box 6 above, is one of the reasons that have made him remain in poverty. Kuyabi is unlucky man. He has lost quite a number of his children due to various illnesses. Because of this, he has depleted almost all his resources in meeting funeral expenses. He nowadays just relies on his daughter for his subsistence. Loss of employment, high dependencies due to bloated family size and land conflicts were also mentioned as some of the reasons that have kept people in poverty.

In pastoral communities as is found in Baringo and Marsabit the main reason that was cited for remaining in poverty other than low levels of education that can lead to well paying jobs was prolonged drought that wipe out livestock and lead to crop failure. In Baringo, households that rely on livestock are prone to loosing everything they have in a drought and attaining hopelessness because there is no other source of livelihood they could turn to for survival. Floods, which also come once in a while in this region, wreck great havoc in some poor people's households as it sweeps all their crops and livestock to Lake Baringo. See the case of Jacob Laboso (Box 7) below who have had sad experiences with these two natural catastrophes. Nowadays in Baringo, both livestock and human illnesses accompany these droughts and floods.

Box 7: Poor- poor cases in pastoral areas

Jacob Laboso traces all his poverty problems to two droughts. He had a well-off family until the drought of 1994 led to the death of all his livestock. It was after this, when reduced to a beggar, that he started working as a casual laborer in the Perkerra Irrigation Scheme. He raised enough capital to buy and sell green vegetables on a very small scale. Money from the petty business was not enough to care for his family's needs. He supplemented it by borrowing from his *Ilmurtanat* clan members and friends. By 1997 he had a few goats and sheep. When the drought of 1999/2000 came, it cleared them and he was left with totally nothing. His mother (a widow) saw the suffering he was undergoing with his family and gave him a calf, which he has been rearing since then. His main benefactors after the last drought were the government of Kenya, non-governmental organizations and his clan members. Their help to his household was in terms of food, money for paying for medical services and some materials for clothing.

The floods of 2002 washed away his crop for that year when he had great hopes of a bounty harvest given the rains. The floods also carried away his one goat and its kid. He currently owns one cow and 4 sheep, rewards from the marriage of his daughter who was given away at the age of 15 years in early 2003. With these, Jacob considers himself poor.

Diida Nega was born in 1968 at a place called Mega in Ethiopia. When he was growing up his parents were rich in terms of livestock numbers. They had 50 heads of cattle and 20 shoats. A few years later his parents lost their wealth of cows, sheep and goats through a severe drought, which killed many animals. According to him this seems to coincide with the severe drought of 1973, which is associated with eclipse of the sun (*ola adun dote*) as reported in the community workshop. Due to famine, Diida's parents left Ethiopia for Kenya when he was 10 years old in 1978. They had only one cow, which they sold (at 70 birr) to get money to travel to Marsabit. When they got to Marsabit their father sought help from his brother-in-law who accommodated them in the village. However one month later he chased them away and they became stranded in the area. His father (Nega Adi) went to the next village and requested one Halake Gurguro who belonged to his clan if he could accommodate them on his farm and the latter agreed. He showed them a portion of land, which they could use (no fee) and this is where they have lived since then. After sometime Diida's father approached one Osman Halima who lived next door for assistance. The latter sympathized with their situation and allocated them a 4-acre piece of land where they have ploughed and grown crops without having to pay for it. In the first season they got 5 bags of maize and kept progressing. Diida's eldest sister got married and the bridegroom paid 1 cow as bride price and this was the first cow they owned since coming to Marsabit. They later acquired another 2 cows, 10 goats and 15 hens. Diida mentioned that their major problem was water and people (mainly women) have to walk for 9km to and fro to get 20 liters of water.

Diida experienced poverty since he was born and growing up in Ethiopia. He says that drought is one of the factors that has brought poverty to them since previously they had 50 heads of cattle all of which except one perished. He adds that they were in a situation different from his neighbors with respect to land since they did not have land of their own and they continue living on someone else's land. This makes it difficult for them to climb out of poverty.

In addition to the above mentioned factors, in Marsabit lack of land for those who are immigrants and insecurity (cattle rustling and ethnic clashes) which are still rampant in the region are some of the reasons that have made poor people to remain in poverty. Diida Nega is not a native of Dirib Gombo. He migrated to this part of the world from Ethiopia. Because of his position as an immigrant, he cannot secure land of his own to invest properly into agriculture.

4.5 Poverty and natural resources management

Results from case studies analysis show that there is a direct correlation between households that have managed to escape poverty and natural resource management practices. Analysis from case studies show that households that have managed to escape poverty or have managed not to fall into poverty are the ones that are concerned with natural resources management. These households have adopted ways of natural resource management depending on their ability to mobilize labor. They hire labor regularly to construct terraces and maintain them in their farms and also to plant trees. Terraces were found to be the most popular structures for controlling soil erosion in Vihiga district. Furthermore they are easy to construct provided there is labor. Enane Lukose, a case of nonpoor-nonpoor in Vihiga district has been practicing soil and water conservation through terracing and afforestation in his farm practices for a long time. He hired labor to dig terraces on all his plots to conserve soil and water. In his compound, he has planted a lot of trees to provide timber and act as a windbreak. Okeny Lubete, a case of Poor-Nonpoor, also from Vihiga district has changed the land use pattern on his farm. His father used to plant many crops in different plots of the farm but for him, he plants several crops in one plot to maximize profit. Because his farm is located on a sloppy area, he has constructed several terraces to stop soil erosion. The trees he has are just planted along the fence, as he has no space in his farm to plant them. However he stated that he would have liked to

plant more if he had a big parcel of land. His home is fenced with eucalyptus, jacaranda, grevillea and cypress trees. He said they act as a windbreak thus reducing soil erosion. Tree leaves are mixed with animal manure to give farmyard manure. The farmyard manure is spread on the farm to help improve soil fertility. He is able to maintain such a big plantation because he is financially stable; if the trees are to be cut then it is for firewood in the household and not for sale.

In Baringo, natural resource management is not widespread. It is limited to construction and disilting of water pans only. Community members carry out this activity collectively. Furthermore as Joyce Lebene, a case of nonpoor-nonpoor, in Baringo puts it:

“Soils within the Ilchamus flats are under no threat of erosion and there has been no recognizable decline in soil fertility within the region.”

In Marsabit sinking of bore holes to get water for human and livestock use and also for irrigation was a common activity. No one appeared to be conserving natural resources either in terms of soil and water conservation or planting of trees.

In all the three study sites, households that fell into poverty and those that have remained poor have not been very keen in conserving their natural resources. These households have got their plots experiencing severe soil erosion and they are engaged in indiscriminate harvesting of trees in search of their subsistence without planting new ones. Majority of them are pre-occupied by activities aimed at achieving a days meal and meeting other immediate pressing demands. They are always under pressure to cope as they lack resources to hire labor. In Vihiga Mr. Abisai Oyengo, a case of nonpoor-poor has got terraces in his farm that were constructed by his late father. However they are not well maintained because Abisai is busy with casual jobs on other people's farms. His late father planted the trees on his farm. Abisai has never planted trees on the farm himself as he claims that the tree seedlings are quite expensive. Similarly Ateko Lupola and Zablon Kuyabi, both cases of poor-poor, had terraces in their farms initially but were unable to maintain them and some of the terraces got filled with soil. Zablon Kuyabi is even in more trouble because he cannot do the work himself, nor can he hire labor. Lupalo is unable to maintain the terraces because during the rainy season he is always busy on other people's farms doing casual jobs to be able to buy food. The increase in soil erosion has led to reduction in crop yields hence continuous buying of food, which is an impediment for the two households to escape poverty.

Ateko Lupalo cuts his trees for sale; this has increased soil erosion on his farm. The trees are cut for sale to earn money for buying food. They are not able to buy tree seedlings to plant and their argument is that they are poor and have no money to buy seedlings.

In Baringo and Marsabit natural resource management is not really of serious concern to the poor. As such there is still indiscriminate harvesting of trees for charcoal burning that has led to serious soil erosion. People are not really conserving their soils. In Marsabit there is rampant cutting of trees for charcoal burning by poor people. They sell their charcoal and the proceeds from it they use to buy food.

5.0 Synthesis site-specific results

In analysing household level factors affecting peoples' welfare, results reveal that reasons that were advanced by households in falling into poverty to be different from reasons for escape from poverty. Similarly, reasons for remaining nonpoor also

tended to be different from reasons of remaining poor. While some of the reasons were similar in all the three study sites, there were also site-specific reasons for falling into poverty and escape from poverty.

In both Vihiga and Baringo sites, investing in education that leads to a well paying job both in the public and private sector and for making informed choices for those who remains in the village was found to be one of the most important strategies for escaping poverty. Other strategies were diversification in on-farm and off-farm enterprises, having a wider social network for acquiring knowledge and information and engaging in cash crop farming (growing of tea and coffee in Vihiga and maize seed growing for Kenya Seed Company and horticultural farming in Baringo). Off-farm activities such as running petty and major businesses were found to be important strategies for escaping poverty in both sites. However there were strategies that were unique to each site. In Vihiga, engaging in dairy farming by keeping crossbred dairy cattle were other strategies that were used by those who escaped from poverty. In Baringo, breeding the remaining stock after drought, being a member of an active women's group, and brewing local beer were other strategies for escaping poverty that were peculiar to it.

Diversification in income generating activities both on-farm and off-farm was found to be the main strategy that was used by households that remained nonpoor not to slip into poverty in all the three sites. Other strategies were remaining in employment until one attains retirement age. Education though along term investment was found as one way of remaining nonpoor particularly when the children end up in well paying jobs.

Death of a breadwinner, funeral expenses (including slaughtering of livestock) following death of a family member and poor health and health related expenses were found to be common factors causing households to fall into poverty in all of the three sites. Other factors that were common to the three sites and were found to be responsible for falling into poverty were, low levels of education that can not lead someone to a well paying job, large family size (high dependency), and loss of employment. Frequent droughts that wipe out livestock and lead to crop failure, livestock and human diseases that accompany droughts, and over reliance on livestock were found to be serious factors that plunge households into poverty and are peculiar to Baringo and Marsabit only. Floods that wipe out livestock and other assets to the lake was a factor of falling into poverty and was peculiar to Baringo site only. Small farm sizes due to high population pressure, land conflicts, alcoholism (family instability), loss of employment due to retrenchment and retirement were factors that made some households to fall into poverty in Vihiga only. In Marsabit lack of land among immigrants and insecurity were other causes of falling into poverty.

The main reasons for remaining poor in all the three study sites are low levels of education that is insufficient for one to secure a well paying job and make informed decisions, lack of resources and having limited social network. Poor health and frequent deaths in the family were other factors that kept people in poverty in the three study sites. People spend most of their resources in medical and funeral expenses. In Madzuu, lack of land and small land sizes that have been depleted of nutrients, loss of employment, high dependencies due to large family size and land conflicts were some of the reasons of remaining in poverty. In Ng'ambo other reasons for remaining poor included lack of land within Perkerra Irrigation Scheme, frequent drought that lead to livestock deaths and which sometimes come with both human and livestock diseases, and floods which when they occur sweeps all the livestock and other properties into Lake Baringo.

On natural resource management, households that were able to escape from poverty in one way or another and those who have remained nonpoor were more concerned with natural resource management. In Vihiga district it was observed that due to high population densities, people own very small parcels of land which they till every season. Because of this, the soils have been exhausted of nutrients and soil erosion is very high, as farmers do not use soil fertility amendment practices. The most popular natural resource management practices today in Vihiga district are digging of terraces to reduce soil erosion and planting of trees where they have been cut. As population increases, forests get cleared to pave way for arable land. In the process the benefits of having forests are lost forcing farmers to establish their own woodlots. However those who escaped from poverty and remained nonpoor were the ones that were using these methods of natural resource management. They were also capable of mobilizing labor to construct soil conservation structures and buy both organic and inorganic inputs for soil fertility replenishment. The same was found in Marsabit. In Marigat, though people were aware of shrinking natural resource base, awareness has not been created enough to make them act. Natural resource management is limited to collective action of desilting water pans. This is communally practiced.

On the other hand households that did fall into poverty and remained poor showed very little concern to natural resources management. Natural resource management practices such as digging of terraces to conserve soil were not a priority in poor people's land. This is because poor people are preoccupied with working in rich people's farms to secure their subsistence. They do not have the time and sufficient resources or incentives to construct these structures in their own farms. In the event that there are no alternative employment opportunities in the village, they embark on indiscriminate use of natural resources e.g. harvesting of trees for charcoal making and firing bricks in the kilns. Brick making is one way in which soils get mined indiscriminately. Brick laying was very common in Vihiga while cutting down of trees to make charcoal was very high in Baringo and Marsabit districts.

6.0 Conclusions

This paper has dwelt on social aspects of poverty dynamics in some three sites in Kenya. Through case study approach the paper has revealed the strategies that were used by people who were poor ten to twenty years ago to move out of poverty and reasons for falling into poverty by people who were not poor ten to twenty years ago. Similarly reasons for remaining nonpoor and poor by some households for the same period have been determined in this paper. While some of the reasons were similar in all the three sites, there were also site specific reasons for escape or descent into poverty. These differences can be explained by the fact that the communities studied tended to have different livelihood strategies and occupy different agro-ecological zones. *Maragolis* of Vihiga district are mainly subsistence mixed farmers while the *Ilchamus* of Baringo are agropastoralists with pastoralism dominating. In Marsabit the *Boran* are agro-pastoralists while the *Burji* are arable farmers. Vihiga district is a high potential area with sufficient amounts of rainfall that can support agriculture throughout the year. However high population densities have led to very small land sizes that are not economically viable. Baringo and Marsabit fall in areas with very high rainfall variability, which makes both livestock rearing and crop production to be at high risk. Frequent prolonged droughts accompanied by both human and livestock

diseases are a major cause of poverty in these areas. Furthermore floods, which when they occur, wreak havoc by sweeping livestock and other properties in Baringo district is a major concern.

The other cause of the difference can be explained by the factor that people's livelihood practices are embedded in their cultural repertoires. The *Ilchamus* for instance perceive their welfare to be fully tied to livestock. Income from any other source must be translated into livestock in order for it to acquire a meaning to the *Ilchamus* people. Because of these differences, interventions that are aimed at poverty alleviation should be locale specific. Such interventions can be developed in partnership with farmers by borrowing heavily from their strategies of escaping from poverty. Participatory technology development enhances the pace at which such technological innovations are internalized by the society as it takes into account people's cultural repertoires.

In order to achieve this, we need locale specific policy recommendations in addition to the generalized national policy recommendations. Policies aimed at providing health care should be encouraged as most asset including land and livestock are currently being lost as people look for ways of meeting the cost of treating their sick family members (cf. Kristjanson et al 2003). This is because a sick society cannot be productive. However there are some general conclusions that can be drawn from this study for all the three sites. First, this study has shown that fighting poverty through agriculture alone is impossible and that other sources of income must be sought. Secondly education for the entire population is important to enable people who are still of age to be employed elsewhere while those who remain in the village can make informed choices that can enable them manoeuvre their way out of poverty. Earlier studies in Madzoo also indicated that a good education would enable individuals to access more lucrative labor markets in the formal wage sector (Marenya et al 2003). This enables them to secure considerable financial stocks, which they can use to undertake further investments in natural, physical, human, and also social capital.

7.0 References and further reading

Amudavi D., (2002), *Voices of the Poor Livestock Keepers in the Lake Victoria Basin with a focus on Natural Resource Management, Vihiga District*. An ICRAF Technical Report.

Barret, C. and B. Swallow, (2003), *Fractal Poverty Traps*. Cornell University and World Agroforestry Centre.

Kristjanson, P., A. Krishna, M. Radeny and W. Nindo, (2003), *Pathways out of Poverty in Western Kenya and the Role of Livestock*. FAO/Pro-Poor Livestock Policy Initiative. Working Paper No. 5.

Manda, D.K., M.S. Kimenyi and G. Mwabu (2001), *A review of Poverty and Antipoverty Initiatives in Kenya*. KIPPRA Working Paper No. 3. Nairobi, Kenya

Mango N.A.R, (2002), *Husbanding the land. Agrarian Development and Socio-technical Change in Luoland, Kenya*. Published PhD Thesis, Wageningen University, Netherlands. 322 pp.

Marenja, P.P., W. Oluoch-Kosura, F. Place, and C.B. Barret, (2003), *Education, Non-farm Income, and Farm Investment in Land-Scarce Western Kenya*. Basis Brief No.14. Basis Collaborative Research Support Program (CRSP), University of Wisconsin, Madison, USA.

Republic of Kenya, (1997), *Welfare Monitoring Survey III*. Central Bureau of Statistics, Office of the Vice-President and Ministry of Planning and National Development. Nairobi. Government Printers.

Republic of Kenya, (1998). *Second Report on Poverty in Kenya. Volume 1. Incidence and depth of poverty*. Ministry of Finance and planning, Nairobi, Kenya.

Republic of Kenya, (2001b), *1999 population and Housing Census. Counting our people for Development*. Central Bureau of Statistics, Ministry of Finance and Planning. Volume I and II, Nairobi, Kenya.

Republic of Kenya, (2001b), *AIDS in Kenya. Background, Projections, Impact, Interventions and Policy*, 6th ed. Ministry of Health in collaboration with the National AIDS Control Council, Nairobi, Kenya.

Republic of Kenya, (2001c), *District Agriculture Annual Report*. Ministry of Agriculture and Livestock Development, Marsabit Kenya.

Republic of Kenya, (2003a), *Interim Poverty Reduction Strategy Paper 2000 – 2003*. Available at <http://Poverty.worldbank.org/files/kenya%201PRSP.pdf>

Republic of Kenya, (2003b), *District AIDS Council*. Ministry of Health Vihiga District.

World Bank, (1997), *Development Report*. Washington, D.C. World Bank

Acknowledgement

This paper is an outcome of a collaborative research program implemented by the combined effort of Cornell University, the World Agroforestry Centre (ICRAF), the Kenya Agricultural Research Institute (KARI), and the University of Nairobi (UoN). First and foremost, the study team wishes to acknowledge the source of funding that enabled this study to be a success. In particular we would like to acknowledge the support received from IDRC (Canada) and the Rockefeller Foundation that provided funds for the qualitative research component of the Dynamics Poverty Traps study. The study team would also like to thank USAID through its Collaborative Research Support Program (CRSP) for its unlimited financial support for the Dynamic Poverty Traps study in East Africa and Madagascar right from its inception to date.

The research team would also wish to thank the many persons who assisted in this project. Over 100 people were consulted in the course of this study and we thank them for sharing their time, experiences, and insights so generously with us. We would like also to thank the Principal Investigators and the University of Nairobi staff members who have in many ways assisted in making this study a success.