Changing capitals, shifting livelihoods: case study of Luo community living on Awach catchment of Lake Victoria Basin, Western Kenya

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Changing capitals, Shifting livelihoods: 
Case study of Luo community living on Awach catchment of 
Lake Victoria Basin, Western Kenya 

by 

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This is to certify that the master's thesis of
Mary Kerubo Nyasimi
has met the thesis requirement of Iowa State University

Signatures have been redacted for privacy
DEDICATION

This thesis is dedicated to the people of Kanyibana village, whose loyalty and attachment to their land keeps them in an environment that is rapidly disappearing into Lake Victoria.

Also, in memory of my two sisters, Pamela Bochaberi and Elizabeth Bochaberi, whose inner strength and love I will always draw upon.
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DEFINITION OF COMMONLY USED TERMS

**Capitals** – Seven capitals are recognized as important in contribution to livelihoods. These are

- **Cultural capital** - A set of attitudes, practices and beliefs that are fundamental to the functioning of different societies, including the manner in which human groups learn to organize their behavior and thought in relation to their environment.

- **Financial capital** – This denotes the financial resources that people possess and may use to support their livelihood activities. Financial capital is held in two forms: available stock such as livestock, trees, land and income earned from labor, pensions, credit and remittances.

- **Human capital** – The skills, knowledge, ability to labor and good health that, together, enable people to pursue different livelihood strategies.

- **Informational capital** – The different sources of information (e.g., radio, television, newspapers, books and informal communication channels) and their usefulness to rural people.

- **Natural capital** – Natural resource stocks from which resource flows (e.g., land, water, air, energy) and services (e.g. nutrient cycling) useful for livelihoods are derived.

- **Physical capital** – The basic infrastructure needed to support livelihoods, including tools and equipment, transportation and communication networks, shelter, sanitation and water supply systems that enable people to function productively.

- **Social capital** – Social resources upon which people draw in pursuit of their livelihood objectives such as human networks and connectedness, membership in formal and informal groups, and relationships of trust, reciprocity and exchanges that facilitate cooperation.

- **Ecosystem** – A complex, dynamic assemblage of living and non-living organisms, living together within their environment and functioning as a unit with other ecosystems. The size and scale of an ecosystem varies from a small pond to a large tropical forest.

- **Homestead** – The lowest level of social aggregation, subsistence and economic production. Homestead composition varies from two generations, parents and children, to four generations involving grandparents, parents, grandchildren and great grandchildren. It is headed by one dominant male – Wuon dala.
Land - The solid ground, the water and the air. It is space that the Luo people perform their rituals, bring forth new children, and roam as ancestors.

Land degradation – The natural and human-induced processes which negatively affect the capacity of land to function effectively within an ecosystem.

Land quality – The capacity of land to function within a defined ecosystem boundary, to sustain plant and animal productivity, maintain or enhance water quality and support human life.

Laterite – A red soil found in tropical and sub-tropical regions that have been leached of soluble minerals, aluminum hydroxide and silica. Laterites are rich in iron and because of their gravelly nature, they have been successfully used in road construction as a base or sub-base.

Livelihood - A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living.

Livelihood strategies – A range and combination of activities and choices that people undertake in order to achieve their goals.

Local indigenous knowledge - Knowledge that is unique to a given culture or society and is accumulated by local people as they directly interact with the environment. It forms the basis for decision-making, social interactions, subsistence production and natural resource management.

Poverty - Poverty is a multidimensional concept. In this study poverty refers to empty homesteads, a lack of friends and social networks, changing migratory patterns that involve young children, human and livestock diseases and land degradation.

Resilience – A measure of how much disturbance an ecosystem or people can handle without shifting into a qualitatively different state. It is the capacity of a system (natural resilience) and society (socio-cultural resilience) to withstand shocks and stress and then rebuilds itself.

Vulnerability – A lack of capacity to cope after a shock or stress. It is also a lack of resiliency and power to “bounce back” following shocks and stresses, e.g. flooding, disease, drought.

Wuon gala – The head of homestead who is the decision maker on social and cultural practices and subsistence production.
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No research endeavor is carried out in solitude. In one way or another, researchers draw upon several people who provide guidance, and whose dedication and commitment to the research process, eventually leads to its completion.

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Iowa.
ABSTRACT

In rural Africa, the relationship between people’s culture and nature continues to raise challenging issues not only on the academic and research front, but in economic and political discourses. In this continent, 73 percent of the people subsist on natural resources. Degradation of this resource base threatens the economic, social, political and cultural survival of the rural people. This study was conducted in Kanyibana village, a patriarchal Luo ethnic group living on Awach catchment of Lake Victoria Basin to 1) understand the relationship and impact of cultural practices on natural resource management, 2) identify the livelihood strategies that people are pursuing as they deal with natural resource degradation and, 3) assess the usefulness of the sustainable livelihood framework in examining the apparent tension between natural and cultural capitals.

Through the application of inductive qualitative research methods, in which several methodologies were combined (focus group discussions, key informant interviews and other participatory methods), findings suggest that livelihoods of the people of Kanyibana village are becoming divorced from farming as the land use and management practices collide with embedded and valued cultural practices. There is evidence of increasing poverty levels from an initial 20 percent of the homesteads considered poor in 1979 to 77 percent considered poor in 2004. The meaning of poverty has become diffuse and diverse, touching and affecting all dimensions of Kanyibana people’s lives, that is, their social, cultural, natural, financial and physical capitals. In this village, a number of factors are linked to the emerging poverty levels. These are deteriorating land quality, increased flooding, heightened human and livestock diseases, and enduring cultural rituals. The most important is the degraded land that has destroyed, and continues to undermine the productive farming base on which the Kanyibana people rely. Through interactive activities and observations, the people of Kanyibana identified four main indicators of degradation -- soil, water, plant and social indicators. Land degradation appears to be highly influenced by persistent cultural rituals and customs that are not keeping pace with the changing environment.

Kanyibana people have responded to land degradation by getting involved in multiple non-farming activities within and outside the village. There is evidence of increased migration to surrounding villages in search of food and income. Lack of safety nets and social support as they engage in multiple non-farming activities, particularly outside their village, is making them less resilient and more vulnerable to existing and newly emerging shocks and risks.
The Sustainable Livelihoods Framework provided research guidance, that is, creating a focus on the assets and resources that local people have and their livelihood responses to asset changes. In particular, the framework proved useful in analyzing and understanding local complexities such as cultural land allocation practices that lead to land ownership insecurities, eventually contributing to land degradation. The flexibility of the framework enabled me to decide where to start the study – at the assets level-- and to determine who to involve at different levels and what methods to employ. Although the framework is useful in so far as understanding the local complexities, it does not provide solutions to problems that local people face. However, the knowledge gained from local community residents, combined with their active involvement is analyzing the factors impacting their livelihoods, does hold potential for follow up initiatives that could, if nurtured appropriately, induce social and natural resource change.
CHAPTER 1
INTRODUCTION

The Study Problem

The relationship between people’s culture and nature continues to raise challenging issues not only on the academic front, but in economic and political discourses. On the African continent, where environmental changes are seriously impacting people’s lives, understanding the relationships among land, culture and livelihoods is becoming more critical than ever. In Africa, 73 percent of the rural population subsists on natural resources degradation of the environment threatens economic, social, and cultural survival (United Nations environment Programme, 1999). Increasing human population is also exerting pressure on the natural resources. Kenya, like most of the countries in sub-Saharan Africa, has witnessed a rapid population increase, which in turn is exerting pressure on natural resources, specifically land, forests and water. The already occupied and cultivated lands have become degraded as a result of compounding factors that include mining plant nutrients without external nutrient addition and inappropriate farming practices which expose land to agents of degradation. This is forcing many farming dependent families to venture into new lands, many of which are fragile (Boahene, 1998). These new lands are quickly becoming depleted because of the absence of new farming techniques and external factors such as poor markets, low prices and lack of infrastructure.

In Africa, degraded land is a product of local resource management failure (Kelly and Hulme, 1993) as well as externally driven phenomena. However, there is another side of human interference that is central to the usage and subsequent degradation of land: the relationship of people’s culture to the land. The cultural ecology theory, proposed by Steward (1955), stipulates that certain cultural practices and institutions emerge as people interact with the environment. Some of these cultural practices, identified by Steward as “culture core” (subsistence patterns), interact more directly with environmental factors than other features.

To identify the cultural core components, Steward suggested a three-part methodology. First is to assess the relationship between the environment and the technology used; second is to analyze the behavior patterns involved in the use of that technology, and lastly, is to ascertain the extent to which other cultural features are affected by those behavior patterns. The use of this methodology enables us to conceptualize the
relationship between culture and environment. However, it fails to show that environment and culture are associated with other dynamic elements that are in continuous interaction, for example, the social and the spiritual part of life. In other words, the element of human choice is an important part of the equation. Furthermore, cultural ecology theory treats environment and culture as separate entities, whereby the environment is said to determine the evolution of culture. Thus implies a linear relationship. However, Steward's work, and that of later cultural ecologists, made a valuable contribution in recognizing the role that the physical environment plays in culture change.

Scholars who emerged after Julian Steward, such as Strehlow (1965) and Flannery (1968), argued that environment might hinder development of a certain cultural practice, while encouraging other cultural practices. In their argument, they showed that agriculture and related cultural practices developed in environments with "favorable" climates, while pastoralism developed in "harsh" environments. Unfortunately, this argument still reflects a linear relationship, whereby one independent element determines another element.

A later group of scholars argued that people interact with their environments in mutually constitutive ways. Geertz (1963), Netting (1969 and 1986) and Moran (1990 and 2000) focused on understanding the dynamic interactions and relationships between the living world such as animals, people and plants, and non-living things. This dynamic association of living and non-living things introduced a holistic approach to our understanding of people within their environment. Referred to as an ecosystem approach, this holistic approach incorporates the environment, people’s subsistence activities, their understandings of their environment, and their cultural and social practices.

The aim of this study is to examine the relationship among interacting components, namely environment, culture and subsistence activities. Specifically, the study will attempt to show that a tension exists between land and livelihood, and cultural protection in western Kenya. This is because cultural protection inadvertently seems to be leading to changes in the environment and livelihoods. Unlike Steward and his colleagues who argued that environment shapes people’s culture, the culture of the people of the Awach catchment in western Kenya appear to be shaping their environment. A key outcome appears to be destruction of the natural resource base on which the culture is dependent.

The Awach catchment has been occupied for centuries by two ethnic communities. These are the Kipsigis and Luo, who were primarily pastoral cattle herders and fishermen, respectively (Ogot, 1956). Over time, both ethnic groups turned to cultivation and by the turn
of the 19th century, had become sedentary cultivators (Ogot, 1956). Each ethnic group has its own distinct culture, defined as “A set of attitudes, practices and beliefs that are fundamental to the functioning of different societies” (Throsby, 1995: 202).

Yet, these two ethnic groups have interacted through trade, exchanging goods such as millet, sorghum, milk and cattle. Interactions through marriages, ethnic wars and cattle rustling have occurred as well. Finally, the two ethnic groups share an important natural resource: water. Several rivers originate in the Kipsigis highlands and flow through the Luo plains, finally entering into Lake Victoria.

**Description of Study Region**

Western Kenya is a land of environmental and topographic contrasts. It includes part of the watershed of Lake Victoria that is shared among three countries: Kenya (6%), Uganda (43%) and Tanzania (51%) (Odada et al., 2004). Lake Victoria, the world’s second largest lake, supports an estimated one million fishermen and fish sellers in Kenya, Uganda and Tanzania (Sanchez et al., 1997; D’Costa and Ominde, 1973). Elevations range from 1150 meters above sea level on the Lake shores to over 2100 meters in the highlands. The elevation ranges with accompanying rainfall supports a wide variety of crops, livestock, wildlife, trees and other vegetation. The highlands receive adequate rainfall and have red fertile soils that have the potential to support dense human populations. The other part of western Kenya is composed of lowlands with poorly drained black soils that are often subjected to alternating periods of flooding and drought. Population density is estimated at 700-1200 people per square kilometer (Hoestra and Corbett, 1995), making it one of the most densely populated regions of Africa. The demographic and physical characteristics of the major rivers draining into Lake Victoria Basin are presented on Table 1.

The highlands of western Kenya are composed of basement rocks juxtaposed with pre-Cambrian volcanic rocks of the Nyanzian system (D’Costa and Ominde, 1973). The lowlands are believed to have been covered by Lake Victoria to about 1400 meters above sea level. With the lowering of the lake level, silt and clays sediments were left behind (D’Costa and Ominde, 1973). With time, erosion and fluvial activities, particularly in the highlands, have brought in new materials and deposited them on the lowlands. Aerial view shows that the region is deeply dissected by rivers and streams that form the headwaters for Lake Victoria (D’Costa and Ominde, 1973). All the major rivers—i.e., Nyando, Sondu-Miriu,
Nzoia, Yala and Mara—originate in the highlands and not only naturally deposit their sediment load along the river levees, but cause serious deluges that overwhelm the vast lowland tracts.

Table 1. Demographic and biophysical characteristics of the Kenyan inlet drainage basins of Lake Victoria (Odada et al., 2004).

<table>
<thead>
<tr>
<th>River basin</th>
<th>Estimated size (Km²)</th>
<th>Estimated population in 2000</th>
<th>Average annual rainfall (mm)</th>
<th>Average percent slope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nzoia/Yala</td>
<td>15143</td>
<td>3,346,000</td>
<td>1306</td>
<td>2.3</td>
</tr>
<tr>
<td>Nyando</td>
<td>3517</td>
<td>611,000</td>
<td>1360</td>
<td>5.0</td>
</tr>
<tr>
<td>Sondu Miriu</td>
<td>3583</td>
<td>788,000</td>
<td>1415</td>
<td>2.3</td>
</tr>
<tr>
<td>Gucha</td>
<td>6612</td>
<td>1,481,000</td>
<td>1300</td>
<td>2.0</td>
</tr>
<tr>
<td>Mara</td>
<td>13915</td>
<td>640,000</td>
<td>1040</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The Western Kenya region is split in half by the equator. Due to its unique latitude location as well as proximity to Lake Victoria, it receives convectional rainfall ranging annually from 960 millimeters in the lowlands to 1820 millimeters in the highlands (Odada et al., 2004). Rainfall is bimodal, with the long rainy season falling between March and July and a short rainy season from September to November.

In western Kenya, farming practices are rainfall-dependent and sedentary. Farmers integrate crops, livestock, trees and shrubs on the landscape. The main crops grown are maize (*Zea mays*, L.), common bean (*Phaseolus vulgaris*, L.), sorghum (*Sorghum bicolor*, L.), sweet potato (*Ipomea batatas*, L) and finger millet (*Eleusine coracana*, L). These crops are usually intercropped, the most popular being maize intercropped with beans. A variety of both indigenous and exotic vegetables are grown primarily for home consumption. Excess is sold to local markets and middle men from urban areas such as Kisumu, Nairobi, Nakuru and Mombasa. Vegetable production for home consumption has been the domain of women, but in recent years men have become more engaged since they are able to generate cash income (Verma, 2003). Cash crops introduced during earlier eras are also grown. These include tea (*Camellia sinensis*), coffee (*Coffea arabica*), sugarcane (*Saccharum officinarum*) and cotton (*Gossypium hirsutum*, L). Tea and coffee are currently grown on the highlands. Cotton and sugarcane were once grown on the lowlands. Mismanagement of farmers' cooperatives and poor market prices has discouraged current farmers from growing cotton and sugarcane.
Local Zebu cattle (Bos indicus) are reared as a source of milk and financial security. Cattle are sold when a financial need arises such as payments for education, health care and bride-wealth. Other livestock include goats, sheep and chicken. Due to small land acreages, most of the livestock, particularly cattle, sheep and goats, are tethered around the homestead or grazed along the roadside, river bank, school compound, church, chief’s compound and local shopping centers.

Traditionally, farmers in this region practiced an agricultural system that permitted effective utilization of resources. One strategy was natural fallowing, defined as the deliberate abandonment of land for a period of time to restore lost fertility (Sanchez et al., 1997). Other strategies included intercropping of legumes and cereals such as maize and sorghum, or application of animal manure and compost. However, the increase in human population and the subsequent demand for more food, introduction of the plough and cash crop system, led to the disappearance of traditional land restoration strategies. For instance, natural fallowing is feasible where there is sufficient land, but with increased human population, this is not possible (Hilhorst et al., 2003). Continuous cropping without addition of external inputs such as manure, compost and inorganic fertilizers, absence of soil conservation measures, and cultivation of thin fragile soils, has led to a decline in soil organic matter and plant-available nutrients, deforestation and overgrazing, thus exacerbating the land degradation situation (Sanchez et al., 1997).

**Research Questions and Study Objectives**

During the research proposal development phase, I had one main guiding question: what is the current status of land and how is this related to livelihood strategies? Over time, as I interacted with and observed the study participants and collected data, three main questions emerged. These are:

1. What is the impact of cultural practices on natural resource management?
2. What livelihood strategies do people pursue as they deal with natural resource degradation?
3. Is the sustainable livelihood framework useful for examining the apparent tension between natural and cultural capital?

Based on the above three questions, I thereafter developed three specific research objectives. These are:
1. To understand local people’s perceptions of the condition of their land.
2. To understand the various livelihood patterns pursued by local people.
3. To demonstrate the centrality of cultural capital in the land-livelihood interface.

Rationale and Importance of Study

The Sustainable Livelihood Framework

African agrarian societies have been experiencing steady erosion of livelihood resources as evidenced by increasing poverty and vulnerability. These livelihood resources include natural, social, financial, physical, human and political capitals. Land, as one of the critical natural resources, has a strong bearing on the livelihoods of the people dependent on it. This is critical in western Kenya where 80 percent of the families rely directly on the land for their survival (Republic of Kenya, 2001). In this region, increasing human population between 1963 and 1990 (estimated at 3.4 percent annual growth) led to intensification of cultivation on already cropped land and clearing and cultivation on naturally thin soils, for example in the Nandi and Mt. Elgon forests (Republic of Kenya, 2002). Intensification of crop cultivation implied that traditional land fertility restoration practices were abandoned and replaced with continuous cropping, making the land more susceptible to agents of degradation.

In addition, some areas of western Kenya region have been politically and economically marginalized by the two governments that have been in place since Kenya achieved its independence in 1963. Allocation of the annual development funds for agriculture, infrastructure, education and medicine has been low compared to other parts of Kenya (Republic of Kenya, 1995). Production of major cash crops, such as sugarcane and cotton, has collapsed because the Kenyan government failed to enforce import regulations. In terms of infrastructure, the region suffers from poor connectivity of its rural areas and most of the crops, particularly highly priced vegetables, cannot make it to urban markets on time. The HIV/AIDS pandemic has taken its toll on the people of western Kenya (Wilson, 2001). In western Kenya, 40 percent of adults between 15 and 45 years are infected with HIV/AIDS (Wilson, 2001). A study conducted on the impact of HIV/AIDS on families shows that HIV/AIDS robs families of cash, labor for agricultural and other activities and opportunities for education, as children forfeit school to care for the sick (Topouzis, 1998). As those infected succumb to the disease, a worrying trend of child-headed households is emerging (Piot et al., 2001).
In the rural areas of western Kenya, people lack appropriate protective mechanisms against natural and social vulnerabilities. Some of these vulnerabilities include degradation of natural resources, poor infrastructure, market inaccessibility, human and livestock diseases, inappropriate government policies, limited social networks and lack of credit facilities. Choice of a livelihood strategy in this region is governed not only by the above vulnerabilities, but condition, ownership and accessibility to natural and social resources (De Haan, 2000).

There is a critical need to apply a holistic approach to understanding the dynamic elements that reinforce and/or compete against each other as rural people in western Kenya strive to make a livelihood. This is important because it will help us understand the multitude of factors that affect livelihood decisions among the Luo people. In the study village, Kanyibana, patterns of livelihood choices are influenced by context-specific factors and complex human dynamics, mediated by availability of land, social networks, values and beliefs, gender relations and household structures.

One important framework that offers a holistic approach in assessing and understanding the elements reinforcing or competing against each other is the Sustainable Livelihood Framework (SLF). The Sustainable Livelihood Framework has emerged from decades of changing rural development themes and policies in developing countries. Using a temporal analysis, Ellis and Biggs (2001) presented the various rural development themes that have been in place since the 1950s. In the 1950s, the modernization, dual economy paradigm was emphasized in community development. This was followed by the transformational approach emphasizing community development and small-farm growth. In the mid-1970s to late 1980s, redistribution with growth, emphasizing integrated rural development, was the norm. This approach overlapped with the World Bank structural adjustment approach that manifested itself in the mid-1980s and lasted into the mid-1990s. Market liberalization and participatory processes emerged around the same time. Finally, the sustainable livelihood framework arose in the early 2000s and is being used extensively in developing countries. The appearance of different paradigms was a response to the way development agencies perceived the role of local people. The early 1960s development paradigms were top-down from government and researchers to local people. The paradigms gradually shifted to a more bottom-up approach in recognition of the significance of local people’s knowledge and involvement.
The recognition of the importance of local people has led to an increase in the use of participatory methodologies. Through the use of participatory research, Ellis (2000) showed that people diversify their portfolio of economic livelihood activities and income sources. A livelihood is defined in the following way:

*A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living* (Chambers and Conway, 1992:6)

Ellis (2000) argues that reliance on one subsistence activity or source of income is becoming increasingly impossible for many people in developing countries. Instead, when faced with varying natural and socio-economic conditions, people re-shuffle their capitals and alter their activities in such a way that their needs are met (Ellis, 2000; Francis, 2000). The people draw on the natural, social, human, physical and cultural capitals to produce food and generate income to meet household needs and to cope with shocks and stresses. The SLF approach consciously seeks to show that households and individuals are rational economic agents optimizing returns and minimizing risks through the use of social, human, financial, physical and natural capitals (Ellis, 2000; Francis, 2000). Therefore, SLF provides an excellent means of exploring the relationships among and between the different capitals. This reflects four critical features of SLF that distinguish it from other research and/or development approaches. First, it is people-centered (Carney 1998; Chambers and Conway, 1992), whereby local people identify, assess and analyze their capitals. Second, it provides a mechanism for examining relationships and linkages among the natural, social-cultural and economic systems within households, communities and landscapes. Lastly, it is flexible and provides a diverse platform for understanding the ways in which households derive their livelihoods from different capabilities and capitals and the risks and vulnerabilities that they face.

The Sustainable Livelihood Framework puts the principles of holism, dynamism and sustainability into practice (Scoones, 1998). It is a simple tool that can be easily understood and used by local people. In addition, local people can be encouraged to identify the different vulnerabilities and risks they face, and their associated trends and mitigating factors. To development agents, SLF acts as an analytical tool that, together with local people, can be used to understand the complexity of livelihoods, the impacts of poverty, and to identify appropriate interventions for a specific environment (Carswell and Jones, 2004).
In this way, SLF aids local people in understanding their positions—treating them not as helpless people with a desperate need for external assistance, but as dynamic actors who can adapt and cope with emerging internal and external changes.

The SLF developed by the Department for International Development (DFID) in 2001 seeks not only to show the relationships among people, their livelihoods, and their environments, policies and social institutions, but identifies the constraints and opportunities of local people’s actual productive environment as well. The DFID framework (Appendix 1) focuses on five capitals: natural, social, human, physical and financial (Scoones, 1998). Odero (2002) introduced another asset, informational capital, which gives attention to identifying different sources of information and their usefulness to rural people. One drawback of the framework is its positioning of culture as an agent for vulnerability. This does not seem to allow sufficient room for the observation of culture as one of the critical capitals that people are actively incorporating into their livelihood decisions.

This study will add cultural capital as an asset that interacts with other capitals, particularly natural capital (land), in defining livelihood activities practiced by local people in western Kenya (Figure 1). By placing cultural capital in a central position within the SLF, I will attempt to show its critical role in influencing livelihood choices among the Luo of western Kenya.

The term “culture” has been used extensively, particularly by anthropologists and sociologists, to mean different things at different times. For the purpose of this thesis, two definitions stood out. These are:

*Culture is a set of attitudes, practices and beliefs that are fundamental to the functioning of different societies* (Throsby, 1995:202)

*Culture itself is the manner in which human groups learn to organize their behavior and thought in relation to their environment* (Milton, 1996:14)

The above two definitions suggest that culture is a collection of knowledge, practices, meanings and perceptions through which people understand their environment, and which therefore guides their actions.
Situating cultural capital in the SLF offers a more holistic mechanism for understanding all components of an ecosystem that includes both human and physical components. Integrating the SLF within the ecosystem approach further offers researchers and development agents an opportunity to assess the various ways in which different environments and communities interact and influence each other. This is because ecosystems are open environments within which resources flow in and out. Through this movement, local people’s values, norms and practices, natural resources, social organization, production systems, energy, matter and information are interacting with other peoples’ institutions outside their localized environment (Figure 2).

Within any delineated ecosystem boundary, there are living and non-living elements interacting to produce a systematic and balanced exchange of materials (Rappaport 1968). These elements are in a state of flux and include fauna, flora, energy, people and their socio-cultural practices (Moran, 2000). An ecosystem is capable of supporting a limited amount of agricultural production. If one part of an element or capital is over-utilized, such as through excessive soil nutrient mining, an imbalance is created. If this imbalance is not corrected, it may lead to the collapse of part or the entire ecosystem (Moran, 1990; Netting, 1969; Force and Machlis, 1997). This may be happening among the Luo people living in the Awach catchment. In this community, cultural capital may not be keeping pace with
changes in the other six capitals, or with the external factors entering their local environment.

Figure 2: The dynamic relationship among capitals, livelihoods and vulnerability within an open ecosystem.
CHAPTER II
REVIEW OF LITERATURE

Introduction
For years, the traditional separation of socio-cultural and biophysical sciences has hindered effective communication between practitioners of these two disciplines (Chambers, 1994). The failure to communicate has slowed progress in addressing real problems facing rural people in their environments. Two perspectives can facilitate the relationship between the socio-cultural and biophysical studies. First is the cultural ecology framework initiated by Julian Steward in the mid-1950s, and second is the Sustainable Livelihoods Framework (SLF) instigated by rural development scholars, particularly Ian Scoones, Frank Ellis, Robert Chambers and Gordon Conway. The most important contribution of these two perspectives, particularly the sustainable livelihood approach, is recognition of the role of cultural practices, values and norms in influencing the direction of human and environment relationships. The cultural ecology framework stipulates that given an environment, a society's ways of life—that is, its social, political and religious patterns—are closely related to the prevailing environmental conditions. This concept implies that change in a society is driven by environmental factors.

Cultures do, of course, tend to perpetuate themselves…but over millenia cultures in different environments have changed tremendously, and these changes are basically traceable to new adaptations required by changing technology and productive arrangements (Steward, 1955:37)

On the other hand, the SLF views culture as a transforming process through which local people utilize their capitals to shape a livelihood. However, placing culture as a transforming process contributes to the separation of human-environment relationships. This thesis will consider cultural capital as an important asset that interacts with other capitals, particularly natural capital, in defining the livelihood activities practiced by local people.

The Luo people of Awach catchment in western Kenya depend on land and Lake Victoria for their livelihoods. For hundreds of years, these people have applied their traditional knowledge and cultural practices to land and resource use. However, in recent years there has been a rapid degradation of land and many people have altered, shifted
and/or totally abandoned their land-related activities. A number of factors are contributing to this degradation, including uncontrolled forest products harvesting, inappropriate farming practices and overgrazing of livestock (Odada et al., 2004). As in many other studies, Odada et al. (2004) fails to address the influence of local peoples' culture on land degradation. This study will rely heavily on the Sustainable Livelihoods Framework in understanding the relationship between land and culture and how this relationship is impacting the livelihoods of the Luo people.

**Land and Land Degradation in Rural Africa**

Land as a renewable capital is perceived as stock, which, when subjected to production, yields goods and services (Prugh et al., 1999). As a renewable capital, and within its carrying capacity, land is in a continuous flux of maintenance and regeneration (Prugh et al., 1999). When maintained within its carrying capacity, land performs four main functions: regulation, carrier, production and information services (Prugh et al., 1999). However, when land is pushed to support and supply more than its carrying capacity, destruction occurs. In extreme cases, permanent damage in the form of desertification may occur (Olderman, 1994). Land degradation not only causes decline in its functions at a particular locality, but triggers offsite impacts as well (Eswaran et al., 2001). This makes land degradation a global concern for humanity.

According to Warren (2002) and Lal (1997), land degradation is contextual and relative due to its dynamic nature and variability. It is also dependent on who is conducting the appraisal, i.e. scientists versus land users (Warren, 2002). In addition, the continual maintenance and regeneration of land indicates that land degradation is both a natural and social phenomenon. This dual nature of the land degradation process might be a contributing factor to our inability to detect degradation until it is too late to rehabilitate the land.

Land degradation has been defined by several authors as the decline in biological potential of land leading to reduction in crop yields, quality of water and loss of biodiversity (Eswaran et al., 2001; Van der Leeuw et al., 2000; Olderman, 1994; Johnson and Lewis, 1994; Lal and Stewart, 1994). There are three principal land degradation processes: physical, chemical and biological (Lal, 1997). For this study, I will focus on physical land degradation, which is a decline in soil structure, texture and fertility, increase in runoff, and exacerbation of erosion by water and wind (Olderman, 1994). Land degradation is affected
by climate, soil conditions, vegetation, physiochemical and biological processes, and human activities through land use practices. Existing estimates of land degradation by the Global Land Assessment of Degradation (GLASOD) indicate that since the 1950s, about 2 billion hectares of land worldwide have become degraded. Three and a half percent of these 2 billion hectares are irreversibly damaged. However, such statements and figures should be used with caution because of the limited scientific knowledge about geographical distribution and actual land area affected by degradation (Dregne, 1990).

Land degradation has been occurring over millennia and people have adapted to it (Van der Leeuw, 2001). For example, during unusually heavy rain, windstorms and wild fires, vegetative cover might be lost, thus exposing soil to agents of erosion. Some major deserts existed before human activities made much impact—e.g., the Atacama Desert in northern Chile which was once an abundant supply of nitrate and copper resources (Alpers and Brimhall, 1988; Hartley and Chong, 2002). Despite these natural disturbances, land had the ability to regenerate what it had lost, in what is termed as resilience. Resilience is defined as the capacity or ability of a system to absorb perturbations, or the magnitude of disturbances that can be absorbed before a system changes its structure (Holling et al. 1995).

The current acceleration of land degradation processes is attributed to human activity (social process) rather than natural process. Human beings as actors in the degradation processes are heavily documented in scientific literature (Eswaran et al., 2001). However, the extent and nature of the human impact are open to debate. It is not my aim to debate this subject, but illustrate probable causes and estimates of land degradation as a result of human activity (i.e., as actors in transforming land).

The most commonly cited cause of land degradation is increasing human population. According to Pimental et al. (1997), the need to provide an adequate supply of food for the increasing human population is exerting great pressure on arable land, water, energy and biological resources. Land provides 99 percent of the food supply while aquatic ecosystems give less than 1 percent (Pimental et al., 1994). Therefore, to meet the world’s demand for food, more land has been converted into farmland, of which 15, 19 and 14 percent have come from forests, grassland and woodlands, respectively (Table 2).
Table 2. Estimates of land conversion of major ecosystems (in millions of square kilometers) (adapted from Matthews, 1983).

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>Area covered pre-agricultural</th>
<th>Area covered in 1982</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>46.28</td>
<td>39.27</td>
<td>-15.1</td>
</tr>
<tr>
<td>Grassland</td>
<td>33.90</td>
<td>27.43</td>
<td>-19.1</td>
</tr>
<tr>
<td>Desert</td>
<td>15.82</td>
<td>15.57</td>
<td>-1.6</td>
</tr>
<tr>
<td>Woodland</td>
<td>15.23</td>
<td>13.10</td>
<td>-14.0</td>
</tr>
<tr>
<td>Shrubland</td>
<td>12.99</td>
<td>12.12</td>
<td>-6.7</td>
</tr>
<tr>
<td>Cultivation</td>
<td>0.93</td>
<td>17.56</td>
<td>+1788.2</td>
</tr>
</tbody>
</table>

* Pre-agricultural times correspond to the period approximately 10,000 BC. During this period, man subsisted on collecting, hunting and fishing (Hillman and Colledge, 1998).

Studies that have attempted to link human population and land use indicate that there is a positive correlation among increasing population, expansion of agricultural land and deforestation (Southgate, 1990; Browder, 1988; Mahar, 1989; Matthews, 1983). However, increasing human population is not the root cause of degradation, but rather the use of farming practices on lands with lower resilience (after being subjected to perturbations) that leads to land degradation. Such lands are associated with forests and grasslands, where inappropriate farming techniques and overgrazing have led to massive erosion of once fertile lands. Olderman (1994) estimates that about 1,965 million hectares of land have been degraded, 29.5 percent through deforestation, 6.8 percent through overexploitation (using resources beyond what is sustainable), 34.6 percent through overgrazing, 28.1 percent through agricultural activities and only 1.1 percent through bio-industrial activities (Table 3).

Table 3. Causative factors of human-induced degradation (adapted from Olderman, 1994).

<table>
<thead>
<tr>
<th>Region</th>
<th>Deforestation</th>
<th>Over-exploitation</th>
<th>Over-grazing</th>
<th>Agricultural activities</th>
<th>Bio-industrial activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>11.57</td>
<td>47.37</td>
<td>35.79</td>
<td>21.92</td>
<td>0</td>
</tr>
<tr>
<td>Asia</td>
<td>51.47</td>
<td>34.59</td>
<td>29.01</td>
<td>36.96</td>
<td>4.55</td>
</tr>
<tr>
<td>South America</td>
<td>17.27</td>
<td>9.02</td>
<td>10.01</td>
<td>11.59</td>
<td>0</td>
</tr>
<tr>
<td>Central America</td>
<td>2.42</td>
<td>8.27</td>
<td>1.33</td>
<td>5.07</td>
<td>0</td>
</tr>
<tr>
<td>North America</td>
<td>0.69</td>
<td>0</td>
<td>4.27</td>
<td>11.41</td>
<td>0</td>
</tr>
<tr>
<td>Europe</td>
<td>14.51</td>
<td>0.75</td>
<td>7.36</td>
<td>11.59</td>
<td>95.45</td>
</tr>
<tr>
<td>Oceania</td>
<td>2.07</td>
<td>0</td>
<td>12.22</td>
<td>1.45</td>
<td>0</td>
</tr>
</tbody>
</table>
More than 50 percent of degradation as a result of deforestation has occurred in Asia, followed by the continent of South America. In Africa, overexploitation, overgrazing and agricultural activities are the largest causes of land degradation. In Europe and Oceania, bio-industrial activities and overgrazing are the dominant human-induced causes of degradation (95.45% and 12.22%, respectively) (Olderman, 1994). The above statistics are only estimates and not true representations. Global estimates on the extent of land degradation remain ambiguous and uncertain. Despite development of sophisticated techniques, estimates of land degradation from developing countries, particularly in Africa, are usually scant, unreliable and open to question.

Stocking and Murnaghan (2001) clearly analyzed the problems associated with land degradation measurements. Stocking argues that the estimates done off-site, such as rates of soil erosion, suspended sediment yield, acreage deforested and nutrient loss, usually vary by a factor of 50. To avoid such variations, it is important to collect on-site data in conjunction with local land users, using both indigenous and local knowledge. Participatory methods offer an alternative and perhaps more comprehensive method for obtaining data. This is because local people have a wealth of knowledge of land and the various activities and processes that have occurred on it over time. A detailed discussion on the value of integrating indigenous and scientifically collected knowledge is presented later in the chapter.

**Physical Land Degradation and its Impact on Rural Livelihoods in Africa**

Why are livelihoods within the continent of Africa at stake? Why does every author and development agency predict doom for the people of Africa, particularly sub-Saharan Africa? This is because many studies suggest that the livelihoods of people of rural Africa are dependent on one major resource — land, which for the past thirty years has been undergoing tremendous degradation. However, the livelihoods of African people are tied to several factors. According to Ellis (2000), a livelihood encompasses income-generating activities, social institutions, relationships and access to resources. Therefore, in rural Africa, land degradation does not mean only a lack of food, but also means susceptibility to vulnerability factors such as an increase in human diseases, social exclusion and limited opportunities. Furthermore, degraded land has the potential to catalyze degradation of other capitals such as financial, social, physical or human.
As mentioned earlier, three land degradation processes exist: physical, chemical and biological. The rates of these three processes are governed by natural as well as socio-cultural factors (Lal, 1994). Studies of land degradation in Africa often have concentrated on erosion rates, loss of nutrients, decline in crop yields (Sanchez, 1985 and 2002; Smaling, 1993; UNEP, 1997; Crosson, 1997), and increasing human population, tenure systems and farming patterns (Wilson, 2001; Richards, 1991; Lal, 1994). For example, erosion, an important indicator of degradation, is caused by the disappearance of protective vegetation cover, cultivation on steep slopes, continuous cropping and over-grazing (Huxley, 1937; Landa et al., 1997; Olderman, 1994). Soil erosion can cause crop yield losses of between 2-40 percent, depending on extent and severity (Lal, 1994). Similar problems are being experienced in the Brazilian Amazon and Asia (Browder, 1988; Olderman, 1994). There are numerous studies on biophysical causes and impacts of land degradation. What is omitted is information on the contribution of socio-cultural practices to land degradation.

Land degradation in Africa is a serious problem threatening the economic, physical, social and cultural survival of its people. This is because 73 percent of the rural population consists mainly of smallholder farmers who are dependent on the land for subsistence (UNEP, 1992). Furthermore, subsistence small-holder agriculture contributes approximately 21 percent of Africa’s Gross Domestic Product (GDP) (World Bank, 2004). GDP is defined as the total value of final goods and services produced within a country’s borders in a year, regardless of ownership (World Bank, 2004). GDP is used as one of many indicators of the standard of living in a country. In recent years, the world has witnessed increases in food production due to increases in yields (especially in Asia, which benefited from the “green revolution”) and expansion of more crop land, particularly in Africa and South America (Prugh et al., 1999; Angelsen et al., 1999; Barbier and Burgess, 2001; Barbier, 1997; Laurance et al., 2001; Evenson and Gollin, 2003).

As we now know, the green revolution had its drawbacks, particularly the diminution of genetic crop diversity and increased soil erosion (Lappe et al., 1998; Shiva and Dun, 1989; Kang, 1991; Chambers, 1997). In Africa, the extra land converted into agriculture is usually forest land. In countries where government policies prohibit invasion of forest, it is the fragile lands such as steep hill slopes, and semi-arid and arid lands that are invaded by the expanding human population (Wilson, 2001; Mahar, 1989; Netting, 1968). However, these fragile lands have dual low negative characteristics—i.e., low resilience and high sensitivity (Sanchez, 2002). This implies that they have low resistance to shocks such as
severe rain and wind storms, and high sensitivity to decline in productivity per unit amount of degradation.

Studies have shown that increasing human population does not cause degradation in itself. The land use practices people employ can actually accentuate the risks and extent of degradation (Richards, 1991). In Africa, high population, coupled with unequal access to resources, pushes rural people to overexploit their natural resources (such as soil, water, forests, grasslands, wetlands, minerals and fish). This overexploitation of resources has led to physical land degradation, particularly for countries in the Sub-Saharan region.

Rural people have responded in various ways to land degradation. Four main strategies are identified and discussed below.

a. **Intensification of Agricultural Fields**

Intensive agriculture involves cultivating fields by intercropping annual and/or perennial crops every season without resting the fields (Netting, 1993). According to Netting (1993) intensive agriculture is possible and can be sustained with farming practices such as minimal tillage, crop diversification and rotation, irrigation, drainage, animal husbandry, fertilization and terracing. However in sub-Saharan Africa, intensification is not normally accompanied by these practices. This has led to a decline in nutrient capital because rural people are continually mining the soil through crop harvest removals (Sanchez et al., 1997). Continual mining without external addition of nutrients (inorganic fertilizer, manure, compost and/or biological fixation) leads to reduction in crop productivity and plant cover (Sanchez et al., 1997). This triggers a multitude of problems such as food and fodder shortages, and increased leaching and erosion (Smaling, 1993). Intensification thus leads to the lowering of land quality. Estimates by Olderman (1994) indicate that such degradation through erosion has amounted to the loss of about 494 million ha of land in Africa.

b. **Extensification into Forests, Shrub Lands, Semi-arid and Arid Lands**

As mentioned earlier, these are fragile ecosystems that require specific management practices. For instance, agricultural production in semi-arid and arid lands demands irrigation, water control, and nutrient conservation practices (Netting, 1993). However in many cases, people moving into these ecosystems have very limited knowledge of the local
environment, particularly specific requirements to sustain intensive production. Any production activity employed soon leads to degradation.

c. Livelihood Diversification

Livelihood diversification is defined as:

*The process by which rural homesteads construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standards of living* (Ellis, 2000:11).

For a livelihood strategy to be sustainable, diversification of livelihoods must be achieved in different geographical areas by different people within the household (Slater, 2002) so that risks and vulnerabilities are spread. The portfolio of activities includes those that are both agrarian and non-agrarian, further categorized into coping, adaptation and accumulating activities (Ellis, 1998 and 2000; Bryceson, 2000). Because the land can no longer sustain agricultural production, non-farming activities are on the rise. Throughout the late 1980's and into the 1990's, non-agrarian activities have provided rural farmers with an average of 40-60 percent of their household income (Ellis, 1998; Francis, 2000; Reardon, 1997; Reardon and Vosti, 1995; Turner et al., 1993). The process of “deagrarianization,” in which rural people are becoming less dependent on agricultural activities, is rapidly changing the landscape of rural Africa and Asia. This phenomenon has been noted in many developing countries such as Nigeria and Tanzania (Bryceson, 2000), Lesotho and Kenya (Reardon, 1997), Vietnam (Adger et al., 2002) and Benin (Mandel, 2004). The various non-agrarian activities in rural Africa include, among others, working for cash wages or salary, craft-making, tailoring, fishing and harvesting of trees and forest products.

Diversification of agrarian activities involves diversifying within (having many cultivars of one crop) and between crops (different crops such as cash and food crops, perennials and seasonal crops). Diversification has been accompanied by intensification of agrarian activities (Chambers and Conway, 1992; Ellis, 2000; Whitehead, 2002).

d. Migration

Since much of the land can no longer produce enough food, Africa has witnessed increased rural-urban migration, particularly among men. In recent years, women too have started migrating to urban centers (Slater, 2002; Francis, 2000; Breusers, 2001). While this
migration pattern might increase remittances back to the rural areas, it is leading to overpopulation in the cities so that the cities can no longer provide the jobs and social amenities that attracted the migrants in the first place, such housing, health care and transport.

Despite the aforementioned strategies for overcoming the land degradation problem, rural Africa is still mired in poverty and stagnant economic growth. Why? It is because degradation of land continues to threaten livelihoods. People lack support mechanisms to cushion the effects of degradation. Increasing pressures on land as a result of population growth, limited access to land or access to poor-quality or fragile lands, and limited resources for investment have thrown Africa's rural poor are into a "downward spiral" into poverty (Grepperud, 1996).

**Poverty and its Implications for Livelihoods**

Typical identification and measurements of poverty involves analyzing household economic data. However, many scholars agree that poverty is a multi-dimensional and dynamic phenomenon that encompasses low income or consumption, inaccessibility to livelihood resources, high vulnerability to shocks and risks, and lack of power, self-esteem and security. This wide range of poverty factors makes defining the meaning and extent of poverty somewhat arbitrary. In order to fully appreciate the meaning and levels of poverty, we have to treat poverty as a relative condition, suggesting that poverty is context and location specific. According to Mwabu (2004), poverty data collected at the household level are only useful in identifying and aggregating poverty and constructing poverty profiles. Poverty data collected this way is expensive and its analysis requires economic expertise. In this study, relative poverty and its associated meanings, causes and extent were assessed. The findings pertain only to the community of study.

Studies show that a vicious cycle exists between poverty and natural resources in Africa (World Bank, 2001; Perrings, 1989; Reardon and Vosti, 1995). This is because rural people rely on the natural resource base, depending heavily on its agricultural productivity. Furthermore, they appear trapped in a state of perpetual poverty and vulnerability due to poor assets endowment and accessibility (Neefjes, 2000). The lack of asset endowment such as social, physical, financial and informational, leads to further depletion of natural resources (Chambers, 1994 and 1997). Depletion of these natural resources aggravates existing poverty traps, deepening the incidence of poverty. Furthermore, people's primary
dependence on the natural resource base makes their escape from poverty almost impossible.

Sub-Saharan Africa is considered the poorest region of the world, with a negative economic growth (Sachs, 2005). In this region, poverty is experienced differently according to social, gender, age and occupational groups (Forsyth et al., 1998). In sub-Saharan Africa, the causes of poverty include ecological limitations that lead to low agricultural productivity; a lack of income and assets to attain basic necessities such as food, shelter, clothing and health care; a sense of voicelessness and powerlessness from the household level to the state level; and vulnerability to adverse shocks and inability to cope (World Bank, 2001; Perrings, 1989; Reardon and Vosti, 1995; Sachs, 2005). All of these compounding factors imply that many households in sub-Saharan Africa are caught in a poverty trap. This level of poverty makes sub-Saharan Africa too poor to grow economically or even get on the first rung of the ladder of development (Sachs, 2005).

Rural people in sub-Saharan Africa rely disproportionately on natural capital for their survival. Agriculture thus emerges as the primary livelihood choice for majority of people in sub-Saharan Africa who own or have access and user rights to land. Many parts of sub-Saharan Africa have favorable climate and fertile soils that can support agricultural activities (Sanchez et al. 1997). These areas include among others, the highlands of east and central Africa, the Congo and Lake Victoria basin, and the humid lowlands of West Africa. Other parts of sub-Saharan Africa include savannah grasslands that support pastoralism, while the remaining areas are arid and desert lands. The highlands and basins are under tremendous ecological pressure from intensification and diversification of agricultural activities and deforestation. This tremendous pressure continues to deteriorate the land, exposing it to agents of degradation. The continual use of degraded land stresses existing capitals and exacerbates pre-existing poverty traps such as lack of access to financial capital for investment in productive enterprises, poor market access, and risks and vulnerabilities that discourage long-term investment for capital accumulation (Carter and May, 1999). This dynamic aggravation of poverty, which impacts all types of capitals, eventually affects the livelihood strategies of rural people. Ellis (1998 and 2000) and Francis (2000) acknowledge that rural people faced with poverty diversify their land-dependent subsistence activities to include non-farming activities. Other studies acknowledge the growing role that non-farming activities play within the rural economies (Rigg, 2005).
Many development programs in poor countries have attempted to reduce poverty at individual, household and national levels. However, the nature and types of factors that might encourage poverty reduction are not well-defined or specified (Timmer, 1997). The key to eradicating poverty lies in understanding the dynamics involved in transitioning between poverty and wealth (Krishna, 2006). Specifically, what factors are involved as households transition between poverty and prosperity? What are the pathways through which individuals and households fall into or escape poverty? According to Krishna (2006), information on poverty is localized, and attempts to reduce it require participatory poverty assessment at individual or household levels. This is because local people within a specific locality have knowledge about each household, particularly households which have fallen into or escaped poverty. In addition, local people observe and know what factors made a household fall into or escape poverty (Krishna 2006).

Local Indigenous Knowledge

People living within a community/village/ethnic group develop and acquire indigenous knowledge to enable them interact with their environment and with each other. This knowledge is stored in people’s memories and passed on to the next generation through observations, teachings, songs, dances, rituals and other cultural practices (Granier, 1998; Netting, 1993). In particular, indigenous knowledge helps local people respond to the various seasonal and annual environmental fluctuations such as rainfall patterns, crop, animal and human diseases, floods and dry spells, and innovations.

There has been increasing fear of the disappearance of local indigenous knowledge because this knowledge, usually passed on orally, is not documented. As one African proverb states: “When a knowledgeable old person dies, a whole library disappears.”

Interest in preserving indigenous knowledge has arisen out of the fear of knowledge erosion and a shift in development paradigms that recognizes that local people are often ignored in the planning, implementation and evaluation of programs. For instance, the green revolution, believed to have led to a tremendous increase in food supply, failed because it made the local people poorer. This is because it required high investments in inorganic fertilizers and pesticides. It also led to soil erosion and loss of diversity and totally ignored the indigenous cropping patterns and local dietary preferences (Lappe et al., 1998; Shiva and Dun, 1989; Kang, 1991; Chambers, 1997).
A wide array of local indigenous knowledge exists. However, I focused on understanding local land degradation processes and knowledge of well-being (wealth and poverty). Both land degradation and well-being are referred to by Granier (1998) as local classification and quantification techniques whereby local people generate their own definitions, indicators, explanations and classifications.

Netting (1993), while studying the functioning of intensive agricultural smallholders, noted that households employ a set of local basic skills within their micro-environment to efficiently and effectively utilize their resources. The dominant subsistence activity of the study group, the Luo, is mixed farming, whereby they grow a mixture of different crops and rear livestock. The Luo manage their land using local knowledge as well as information delivered by several development agents and government institutions. Extensionists from the Kenya Ministry of Agriculture and development agencies operating in nearby villages use an integrated extension approach that is pluralistic, integrative and participatory. The approach gives local autonomy to plan, design and implement new agricultural practices. Through this process, farmers are able to utilize their local knowledge as well as “modern” techniques of farming. However, these practices do not seem to be effective as evidenced by the enormous soil erosion processes currently occurring in the study village.

To gather indigenous local knowledge through involvement of local people, I had to draw upon participatory research methods. Since the 1990s, participatory methods have enabled researchers to discover the fruitfulness of local knowledge and the creativity and analytical abilities of local people (Chambers, 1997). Participatory research leads to new insights and discoveries that might not be captured through conventional research methods such as surveys and questionnaires. Participatory research methods allow local people to share, learn and analyze their knowledge and understanding of their everyday lives and interacting environmental and social factors (Chambers, 1997). Using participatory methods, I was able to gather local meanings and knowledge on land degradation processes and livelihoods in Kanyibana village.
CHAPTER III
METHODODOLOGY

Background

In the summer of 2004, I traveled to the study area in western Kenya. I selected the region because of my prior experience working with, interacting with, and observing several area communities. Western Kenya region is a vast area hosting seven ethnic groups, namely the Luo, Luhyia, Kisii, Kipsigis, Nandi, Kuria and Teso. After several meetings and discussions with key informants, I selected Kanyibana village occupied by the Luo people as the study village. It was the month of May and the long rainy season had begun earlier in mid-March. May is usually the peak of the rainy season. I identified the village but did not start research work until mid-June because the target village was flooded.

Between mid-June and August 2004, I held over 15 focus group discussions selected through a rigorous sampling process in Kanyibana village. My intent was to enter the village and examine the world of the study village as the residents saw and experienced it everyday. I was interested in understanding the relationships that exist between people and their capitals, spatial distribution and temporal trends of subsistence activities and any other relevant phenomena. I also held interviews and discussions with key informants. My previous field experience enabled me to immerse myself with the focus group participants as well as other people in the village. Being able to speak the local language, Dholuo, impressed the people and I felt it broke some of the usual cultural barriers, for example, allowing old men to hold a discussion with a younger woman.

Qualitative Research

Selection of a research methodology is highly dependent on the study objective, research setting, anticipated process and expected outcome of the research. I was interested in seeing, experiencing and learning about the life of the people of Kanyibana village. Based on this, I used a qualitative research approach that applies inductive reasoning. Inductive reasoning enables a researcher to study the inner life of people, revealing their understanding of their environment, and their feelings and values in their own dynamic world. According to Esterberg (2002) and Yin (1984), inductive reasoning allows a researcher to examine the social world, and in the process, build theories consistent with what he/she is seeing or hearing.
Inductive reasoning allowed me to learn, examine, collect data, draw conclusions and generate theories based on the facts as I experienced them. This is referred to as grounded theory (Glaser, 1998). Grounded theory is a systematic generation of theory from qualitative data. Through use of grounded theory, researchers formulate new hypotheses to fit data. The goal of grounded theory is to discover the participants' knowledge, experiences and actions regardless of time and space. The result obtained from grounded theory is not a report of facts, but probability statements about the relationships between themes generated, or an integrated set of conceptual hypothesis developed from empirical data (Glaser, 1998 and 2001).

The main qualitative research methodologies used were focus groups, key informant interviews and participant observation. The focus groups and key informant interviews drew heavily upon participatory tools, because participation not only makes the research participants feel part of the research, but empowers them as well.

This chapter will provide a detailed description and rationale of the above mentioned methods in examining the relationship between culture, land and livelihoods among the Luo people in western Kenya.

**Study Site**

Kenya is divided into eight provinces, 55 districts, 128 division, 458 locations, 896 sub-locations and more than 3000 villages. These units facilitate political and social administration. The chart on page 26 shows administration channels and the personnel responsible for maintaining law and order. All the administrators, except the village headman, are civil servants and comprise both men and women, except for village headmen who are primarily men.

The study village is located in the Awach river catchment, a tributary of the Nyando River which eventually drains into Lake Victoria. The study site is located in Nyanza province (Map 1). The study was conducted in Kanyibana village, located within longitudes 33° 20' east and 33° 25' east and latitudes 0° 30' south and 0° 35' south (Figure 4). It lies on the flood plain of Lake Victoria, very close to the foot of the Nandi Hills escarpment. Kanyibana village is headed by Jaduong Gweng (village headman), who was nominated by village elders in 1998.
Identification of the study region was based upon my previous knowledge of the land degradation problems faced by local people. Kanyibana village was selected in consultation with Kenya’s Ministry of Agriculture and the World Agroforestry Centre (ICRAF) field personnel. ICRAF, in conjunction with extensionists from the Ministry of Agriculture, had done (and are continuing to do) extensive research focusing on land degradation, water resources and agroforestry. Because local people’s views might be influenced by the presence of ICRAF, I had to identify a village that has had minimal direct contact with ICRAF personnel. It was impossible to find a village that had had no contact with the agency, because many of the farmers have traveled to other villages where ICRAF had conducted its research. In addition, the village had to have evidence of physical land degradation such as gully and sheet erosion. Using the above criteria, together with the assistance of officers from the Ministry of Agriculture, chief and the assistant chief, I identified Kanyibana village as my study site.
Entering the Field

After selection of the village, initial contact was made at the chief’s Baraza, which is held every Monday at 11 am. A chief’s Baraza is a weekly meeting of the chief, assistant chiefs, village headmen and local people during which the chief passes on information to his people. During this meeting, new government policies and other issues are discussed. In addition, conflicts are discussed and resolved at this meeting. The chief and assistant chief are civil servants who retire from the service at the age of 55 years.

The agricultural field extensionist mentioned to me that chiefs and assistant chiefs are feared because they wield a lot of power. He said;

People fear the chief and his assistant. People do not want them to attend functions because they are always campaigning for their own politicians. The chief and his assistants do not allow people to drink Changaa (locally brewed alcoholic drink) during social functions. If the village headman invites the chief and his assistants to a social function, people will not attend because they will not have Changaa. The chief sometimes uses his assistant to force people to contribute money to Harambee. So, once you have identified your village [referring to me], use the village headman to organize a village meeting for you. People listen to the village headman because he is one of them. The village elders usually nominate the headman and they nominate someone who is respectful to them. Furthermore, the village headman is usually one of their own sons and he cannot force people to contribute to Harambee.

However, I was obligated to inform the chief and his assistants of my research. I attended the Lower Nyakach location meeting and was able to meet the village headman of Kanyibana village. The village headman was willing to arrange a meeting with his people. It was during this meeting that I made the first contact with the study participants.
Figure 4. Location of study village.
Involving the Local People

Use of a qualitative research approach permits a researcher to explore several methodologies for data collection. Even though my intent was to collect data for my masters degree, I wanted to empower the local people through their involvement in the discussions and the various activities that were part of this process. I knew I could achieve greater involvement of the local people if I let them actively lead the discussions. I drew upon some participatory methods that, according to Chambers (1997), reverse the way the outsider “scientific community” traditionally views local people. The traditional research process tends to be an extractive rather than an empowerment process.

Since I wanted to study a village that was undergoing a land degradation process, I wanted to link the village to development agencies that could assist them in dealing with the problems at the end of my study. I did not want to just extract data, get my masters degree and forget the study population. Furthermore, spending over two months in the field enabled me to observe and experience the problems that have emerged as the land became degraded. Indeed, in most cases, it was disheartening. In some instances, some of the participants expanded my research to other villages. According to the participants:

All the people on this plain are affected by the gully. Studying our village alone will not make you understand the extent of the problem. Our fathers and mothers extend beyond Kanyibana village. Therefore, we will keep sharing information about our neighboring villages.

The underlying principle of participatory research is capacity building by empowering local people to conduct their own problem analysis, design and implementation of appropriate initiatives and monitoring and evaluation (Narayan, 1996). It is a back and forth process of sharing and gathering data between the researcher and local people. Participatory research seeks to raise people’s awareness and capacity by equipping them with new skills to analyze and solve their own problems.

The lives of local people in their surroundings are usually complex, diverse and dynamic; the use of participatory research methods provides greater assurance that a holistic approach to the study question is used (Chambers, 1997; Cornwell and Jewkes, 1995). Participatory methods comprise a set of tools that a researcher can draw upon depending on the situation (Chambers, 1997). I employed a set of participatory methods to collect data. The methods were diagramming and mapping, sorting and ranking, timelines and trends, well-being grouping and Venn diagramming. Venn diagramming involves
identifying important social groups for the community and/or group and visually displaying the groups.

**a. Focus Groups Interviews**

Focus group interviews are used to collect information from a group of people (Butler et al., 1999; Bernard, 1995). According to Butler et al. (1999), focus groups, guided by a few open-ended questions, can be used to discuss specific topics such as water quality, food security and cropping patterns. The use of open-ended questions during a focus group interview provides participants with an opportunity to explore an issue in depth. In addition, during the interview the researcher or facilitator can involve everyone in the discussions.

I used focus group interviews and discussions to understand the land degradation process and the responses of farmers to the degradation in terms of their subsistence and economic activities. Participants in the focus groups were selected based on a participatory wealth stratification exercise. The participatory wealth stratification exercise was done by the village headman and his six elders, three women group leaders, an herbalist and a midwife. These people had extensive knowledge of each person in the village. As the group considered the village residents, they identified four wealth groups: wealthy, average wealthy, poor and very poor. I then used this classification to select my focus group participants. In addition, I also included gender (men and women), age (below and above 40 years) and educational level (no formal education versus at least eight years of formal education) as selection criteria.

According to Chambers (1997), one limitation of focus groups is the tendency of an individual/s to dominate the discussion. Because I had prior field experience conducting focus group interviews, I was thus able to manage the group and encourage everyone to participate. The only problem I encountered was inconsistent attendance when I held meetings that ran two or three consecutive days.

To get an understanding of poverty levels in the village, I explained the procedure of identifying wealth and poverty indicators that might be seen and/or observed in their village. After lengthy discussions, the focus group agreed to use three time periods starting from the year 1978. This is because most of the participants could clearly remember 1978 as the year that Kenya’s second president, President Moi, came into power. The participants selected two people, usually young men, to write on flipcharts the information that was generated. During the study period, the two people kept changing, as attendance was not
consistent. The participants were able to list the indicators of poverty and wealth for their respective villages.

After selection of the time periods of 25 years ago, 10 years ago and the present (the year 2004), and using the indicators of poverty and wealth, the participants were able to position each homestead along a poverty-prosperity line. A list of the village homesteads had been developed by the village headman. The exercise was conducted as follows: the name of each homestead was called and participants were asked where they would place that particular homestead 25 years ago. The participants jointly agreed where to place the homesteads, and then continued for 10 years and the present (the year 2004).

![Figure 5. Focus group participants in Kanyibana village.](image)

Using this process, I was able to place each homestead on a poverty-prosperity time line. For younger homesteads, e.g., one established in 2000, the homestead was considered under his father for the 25 and 10 time periods. This was important because I wanted to know whether new generations are escaping from, or falling into, poverty or remaining at the same level as their parents. Causes of changes in poverty and prosperity levels also were discussed.

After the poverty-prosperity assessment, the focus group participants were able to identify the land degradation factors, their causes, and to show trends of degradation using
timelines. In addition, the participants were able to identify the various livelihood activities in which farmers were involved over time.

b. Village Indicator Mapping

Chambers (1997) advocates use of visual tools to enable local people to understand and comprehend the discussions. In order to collect gender and age disaggregated information, I subdivided the focus groups into men and women, and those over or below 40 years. However, not enough women attended the focus group; hence only three subgroups were used (women, men above 40 years and men below 40 years). The three groups were physically separated. Each group was supplied with a large manila paper and marker pens of different colors and point nib sizes. Each group chose one person to draw the indicator map. Using the previously identified indicators of land degradation, each group located the indicators on the village map.

c. Key Informant Interviews

Unstructured interviews have been used to project “real” conversation because questions arise spontaneously and usually develop into a conversation (Esterberg, 2002). Unstructured interviews permit the researcher to conduct interviews at different locations and times. Initial key informants (extension personnel, chiefs, assistant chiefs, village headman) were purposively selected to provide background information on the study site, cropping patterns, property ownership, systems of governance, kinship patterns and general cultural practices. Because this group of interviewees did not provide personal or intimate answers, they gave me permission to use their names and titles in this study.

Later in the process, other key informants (political activists, women leaders, a school principal and a local philanthropist) who emerged after discussions with the study population were interviewed. I interviewed this group to understand their role within the village, and sometimes to fill in gaps of missing information. The interviews were conducted in English, Kiswahili and Dholuo languages.

d. Participant Observation

Participant observation enables a researcher to become totally immersed in the study group. According to Bernard (1995), participant observation should be conducted for a long period of time to allow the researcher and study participants to feel comfortable with
each other, while at the same time allowing the researcher to maintain objectivity. However, Knutsen (2003), while conducting a study in Senegal, noted that participant observation can be an uncomfortable experience and the researcher can be considered a freak (as a result of differences in physical appearance, e.g., Caucasian versus Negroid). However, I was welcomed into the homesteads of the study group and being of similar physical appearance and of a nearby local ethnic group, I was able to integrate into the lives of the study people comfortably. I also spoke their local Luo language, *Dholuo*. This was an added advantage. One drawback that might contribute to bias in data collection, was my previous knowledge of Luo cultural practices. I grew up among the Luo people and over time learned their cultural practices. However, most of what I learned was through oral transmission. Through this kind of learning, some of the information is lost or misrepresented. I understood this and throughout my study period, I understood and appreciated the explanations of Luo cultural practices.

Participant observation also allows a researcher to use multiple data collection tools such as structured interviews, participatory mapping and transects, questionnaires and checklists (Bernard, 1995). During the whole study period, I was able to use several data collection methods at group and individual levels. At the group level, during focus group discussions I was able to observe gender and age relations, and the various social-cultural practices used by the study group. At the individual level, I observed the daily lives of the participants, their interaction with other members of the village and with the administrative system.

**Maintaining Validity**

Research validity involves maintaining the accuracy and trustworthiness of collection tools and findings (Bernard, 1995). Triangulation of methodologies enhances confidence in the resulting data. Triangulation refers to use of more than one method or approach in research (Webb et al., 1966). Using multiple data collection tools enabled me to maintain validity.

*Once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes* (Webb et al., 1966:3)
Four forms of triangulation are identified by Denzin (1989): data, investigator, theoretical and methodological. I employed two forms, data and methodological. Data triangulation entails gathering data through several sampling strategies to ensure that data are collected from different people, at different settings and times. Methodological triangulation refers to use of more than one method to collect data. For this research I used key informants and focus groups of different gender, powers, ages and education levels. I also involved government officials including the chief, assistant chief, agricultural extension officers and field officers from non-governmental organizations.

In addition, I used three different languages (English, Kiswahili and Dholuo) to collect data; any errors that might arise out of translation were minimized as much as possible. Furthermore, I maintained the local words, meanings and concepts as used by the study group. Finally, using participatory methodology ensured that during discussions everyone was given an opportunity to speak, particularly the older women who normally might have sat at the back of the room and watched the discussions.

Data Analysis

The forms of data I collected were primarily words, texts and photographs. According to Miles and Huberman (1994), analysis and interpretation of such data requires creativity, discipline and a systematic approach. I had notes from key informants and focus groups, and descriptive narratives from observations. In addition, I had diagrams, charts and maps all depicting different information.

I entered all the text data into the computer software, Ethnograph V.5 (Seidel, 1998). To bring meaning to all the data, the software enabled me to identify emerging and to organize them into different categories. I organized all the text information contained in each category and then identified connections within and among the categories. Because my intent was to examine the world of Kanyibana people as they saw and experienced it everyday, I maintained most of the word-for-word transcripts in the write-up.
CHAPTER IV
FINDINGS

Overview
This chapter is divided into four main sections, each reflective of local people's knowledge and perspectives.
1. The study village of Kanyibana. This includes the physical and socio-cultural characteristics of the study village. Specifically, I will discuss the village's location, landscape, kinship system, decision-making process, homestead composition, land tenure system and poverty-prosperity pathways.
2. The Kanyibana land. This section includes the meaning of land, causes, indicators and trends of land degradation and distribution of degradation indicators within the study village.
3. Causes of land degradation. The discussion highlights the background and history of the problem of land degradation.
4. Livelihoods. The interactions and relationships associated with livelihood capitals and how these capitals are causing shifts in livelihood strategies.

Section 1: The Study Village - Kanyibana

Physical Description

Location
Kanyibana village is located on the northeast corner of Nyakach Location, Lower Nyakach Division, Nyando District, Nyanza Province in western Kenya. The village acquired its name from the first Luo man, known as Bana, who settled around the present day Kano plains. Kanyibana simply means “the home of the Nyibana.” It lies between two rivers, Awach and Sare. The village is situated on the edge of a dusty road that links Sigowet town, in Kericho District, Rift Valley province and Katito town lying along the Kisii-Kisumu highway. Sigowet town is inhabited by the Kipsigis ethnic group while Katito is inhabited by the Luo people. Kanyibana village is composed of 138 homesteads, each with an average of 15 members.
Hydrology

The Awach River marks the Kanyibana village’s eastern boundary, and flows from the northeast to the south, eventually emptying into the Nyando River. The Sare River flows from the northwest, marking the western boundary of the village. Sare is a smaller, intermittent and seasonal river that dries up during the dry season, specifically in the months of January and February. Sare drains into the Awach River at the southern tip of Kanyibana village. The Awach River is a much larger perennial river, and experiences tremendous seasonal fluctuation in volume. During the rainy season from May to June, the Awach usually bursts its banks and floods the surrounding land. The two rivers make up the only source of water for the people and livestock of Kanyibana village. According to the Village headman, the location of the two rivers is a curse and a blessing. He stated:

We are blessed to have two rivers in our village. We are cursed too. During Opon (long rainy season), the rivers become so fat with water that it overflows. The rivers overflow at the critical time for Opon crop planting and we end up missing a season. When we return after the floods, it is usually too late to sow any seeds. When other tribes are celebrating the coming of the rains, to us, it means another flood. More often, it rains up there in the hills. I hear thunderstorms and see lightning, and in my heart, I know we are not safe. The amount of rain that falls up there is so much that the rivers cannot swallow all of it. When this happens, our village and others are swept away by water flowing from up there and yet not a drop of rain falling from our own skies. During dry season, River Sare dries up and everyone collects their water from River Awach. There are fights as everyone wants to get water for their home as well as for their cattle. So, whether it is during rains or dry season, the rivers create problems for us. The only beneficiaries of this situation are rats and rodents that hide in the dry undergrowth.

The location of Kanyibana village makes it extremely vulnerable to flooding since it lies at the foot of two faults, the Kericho and Nandi ridges.

Weather

The village receives about 800 millimeters of rainfall annually, distributed bimodally (EAMD, 1970). However, due to high amounts of rainfall received in the highlands above it (approximately 1800mm) the area gets more water as a result of flooding. The study site falls under the dry tierra templada climatic type where rainfall is less than 20 percent of potential evapotranspiration (PET) and annual rainfall covers less than 88 percent of PET.
(East African Meteorological Department, 1970; Sombroek et al., 1982). This places the
study village in agro-climatic zone III or semi-humid climatic zone (East African
Meteorological Department, 1970)

The mean annual, mean annual minimum and mean annual maximum temperatures
are $32^\circ$C, $29^\circ$C and $35^\circ$C, respectively (EAMD, 1970). During extreme dry periods,
temperatures can rise to $37^\circ$C. One key informant said:

In January, the sun beats us down mercilessly from the cloudless blue sky. It is as if it is
angry with the people of Kanyibana village and the whole of Kano plains. During that time,
when I look into the horizon, the air seems to be shimmering. The air boils and it becomes so
hot. All the vegetation dries up, including crops, grasses and some trees. The only trees that
survive are Otho, Oriang and Chak. Sare River dries up. The level of Awach River drops
down so much that some of the rocks emerge. We have to walk uphill to the Kipsigis and
beg them to allow our cattle to graze in their forests. Sometimes we are forced to sell our
cattle, goats and sheep in Katito, Sondu and Ahero markets at very low prices. January is
the time when many children run away from home too. Maybe, they want to start afresh in
another land because they know that they cannot survive on this land.

Located at latitude $0^\circ$, $23'34.15''$ south of the equator and about 60 kilometers away
from the shores of Lake Victoria, the village receives bimodal convectional rain. The long
rains come in April and last through July. The short rainy season begins in mid-October to
late November. The rainfall pattern has changed in the past 20 years. According to the
village elder:

A lot of things have changed in the past 10 years. The rain seems to be against us. It no
longer rains regularly and when it does rain, we have to run away from our homes because
the rivers flood and burst their banks. When it is not raining, the sun shines for days and
months, drying the rivers and killing the grass for our livestock. At times, rains fall up there
on the hills on our neighbors and it angrily rushes down to us, carrying away our soil. The
remaining soil can no longer support us. This has resulted in breakage of cropping patterns.

Soils

The soils found on the flood plains of the Sare, Awach and Nyando Rivers are
attributed to topography, moisture and drainage patterns, depositional effects of
contemporary streams, accumulation effects of seepage deposits and colluviation, time, and
the influence of man (D’Costa and Ominde, 1973). The above factors lead to formation of
alluvium soils (Saggerson, 1952). Alluvium weathers down to clayey sediments and with poor drainage, seasonal water logging and the influence of alternative wet and dry climatic conditions, forms black cotton soils (D’Costa and Ominde, 1973). These black cotton soils crack when dry and expand when wet, churning the upper soil mass. Soils that churn are classified as vertisols. The vertisols have about 30 percent clay, high cation exchange capacity, and poor physical characteristics (Saggerson, 1952; D’Costa and Ominde, 1973).

Vegetation
The vast landscape is flat, predominantly supporting grasses and sparse acacia species. The common acacia species include *Acacia seyal*, (locally known as Oriang), *Balanites aegyptiaca* (locally known as Otho) and *Euphorbia tirucalli* (locally known as Chak). The acacia trees are used for goat grazing and, during drought periods, they are cut for cattle fodder. The major grasses include *Digitaria* spp., *Eragrostis* spp and *Setaria* spp. The vegetation in this village indicates an adaptation to soil and climatic conditions. This vegetation is adapted to black cotton soils that are susceptible to water-logging in wet season and cracking in dry season.

Figure 6. Kanyibana village landscape. The village is located on the Kano plains at the foot of Nandi Hills. The hills are clearly visible at the background of this photograph. The bare ground on the foreground is an indication of degradation. The landscape is dotted with acacia and eucalyptus trees.
Infrastructure

The road that passes through the village is classified as Class E. This is a dirt road that is expected to link and promote trade between the Kipsigis and Luo people. On the side of the Kipsigis, the road is well-maintained with pebbles and stones making it passable throughout the year.

On the plains, due to the soil type (black cotton), the murram road has been destroyed because of the extreme variation in weather conditions. A murram road in Kenya is another word for laterite. Laterite is a naturally occurring gravel material that is used in road construction as a road base or sub-base. However, because the road is not maintained, any weight placed on the road quickly breaks up the soil surface. This exposes the soil on the road to agents of erosion such as water and wind. In addition, black cotton soils are subject to cracking during the dry season. During the wet season, the road cannot be used for automobile transportation and people have to rely on bicycles and walking to carry their loads. In certain parts of the plains, the road has been undercut by gully and rill erosion.

![Figure 7. A murram road cut off by a gully. The gully at the point where it cuts the road is about 20 meters wide and 10 meters deep. To cross to any side of the gully, people walk about 50 meters around it and jump over it at the point where it is about 1 meter wide.](image-url)
There is no hospital or health center within the village. The closest health center is located four kilometers away in Katito town. It is a privately owned health center and only opens three days a week: Saturday, Sunday and Monday. The owner is a pharmacist employed in Nyanza Provincial Hospital in Kisumu town (30 kms). He is a fully employed civil servant who therefore opens his health clinic in Katito on his off-duty days. If someone in the village falls sick, a local herbalist is sought or the patient buys medicine from shops. A social hall built by The Aga Khan Foundation serves as a health clinic for pre- and post-natal care. A primary school located at the edge of Kanyibana village serves children from eight villages. A neglected cattle dip no longer operates. The cattle dip was built by funds from the Swedish International Development Agency in 1983.

The main means of communication is verbal. A few homesteads own battery-operated radios. Two people own cell phones that they allow fellow villagers to use at a cost. The cell phone owners charge 50 Kenya Shillings per minute to use the phone: 40 shillings for the call plus 10 shillings to charge the phone.

Farming System
This bimodal rainfall pattern allows the villagers two cropping seasons for growing sorghum, maize, beans, cassava, and assorted local vegetables. Cotton and sugarcane were the two main cash crops introduced by the British colonial government. Production of these two crops fell with the low prices that the Kenyan commodity boards were paying farmers (Kenya Sugar Authority and Cotton and Lint Marketing Board). As such, there are no cash crops grown currently. However, some of the farmers sell part of their sorghum and cassava harvests.

The major livestock reared are Zebu cattle and goats. A few homesteads have sheep and chickens. The livestock are grazed on privately owned pieces of land. In most cases, after crop harvest, the animals are grazed on the stover. The source of water for the animals is the Sare and Awach Rivers. There is considerable evidence of overgrazing and trampling of the soil by livestock, especially along the paths and banks of the Awach and Sare Rivers.
The Luo Kinship System

In most, if not all societies, social relations are recognized through the kinship systems (Mbithi, 1982). Kinship systems are the web of social relationships based on consanguinity (blood relationship) and affinity (marriage relationship) (Stone, 2002). The kinship system is thus a vast network of social relations that stretches horizontally to include age-mates, and vertically to include the older and younger, the living and the dead. Relationships among the different kin members are traced through patrilineal or matrilineal descent lines. Among the Luo people, descent is traced through patrilineal relationships. The kinship system serves as the strongest regulator of overall patterns of subsistence and behavior. This includes rights, duties, obligations, marital customs and regulations and status of individuals within the village. Like many African ethnic groups, the Luo kinship system is very complex. Inheritance and social identity pass only through the males on the father’s side.

Figure 8. Cattle grazing on maize and sorghum stover left in the field after crop harvest.
Figure 9. Tracing descent of a male ego among the Luo ethnic group.

The Luo people belong to clans: groups of people or homesteads that trace their descent to one ancestor. Clans are exogamous, meaning that members are not allowed to marry each other. Among the Luo, the prefix “ka” or “ko” means people of, or descendants of. In the study area, Kanyibana refers to people of Nyibana. The Nyibana clan members are found in three other nearby villages. Traditionally, clan membership was based on birth for men and for women. Upon marriage, the women belong to the husband’s clan. The clan is thus patriarchal. The various clans often fought over land and water, and any captured person would be wholly absorbed into the clan. After several years they would eventually inherit the clan lineage. The village headman stated that:

*Wuon dala* owns all the land inherited from his father. He owns all the livestock including the ones brought by his wife/wives, sons and those paid as daughters’ bridewealth. All trees planted around the homestead and on the farm are owned by the *Wuon dala*. Women are not allowed to plant trees. This is because trees are used to establish boundary and hence a woman can claim ownership of a piece of Loo (soil) if she plants a tree. Sons own property after establishing their own homesteads. If *Wuon dala* dies, ownership of land, trees and livestock is passed to *Jatero*, the inheritor.
Among the Luo the clan has a lot of influence—not just to a particular homestead as an entity, but to particular individuals. Among the Luo, decisions on major issues such as land allocation, as well as minor ones, such as those regarding the burial of an adult Luo man, rest entirely with the clan. In this respect, clans constitute the strongest linkages between villagers residing in town and those staying in the village. The linkage is especially expressed during funerals and food shortages when people come together to offer emotional and financial support. The lineage among the Luo is quite extensive. A lineage refers to a group of people who regard one another as kinsmen, and their lineage line can be traced with certainty to a common ancestor (Stone, 2002). A number of lineages constitute a clan. Among the Luo, lineages can extend up to five to seven generations deep, encompassing great grandparents, grandparents, parents, children and grandchildren.

Homestead Composition and Decision-Making Process

Establishment of a homestead is an important rite of passage in the socialization process of a Luo man. A man cannot make homestead and clan decisions, or be enlisted for clan leadership, unless he has his own homestead, known as *dala*. The process of establishing a new homestead, and subsequent construction of other structures within the homestead, are bound by well-knit cultural practices. When a man is ready to establish his homestead, his father accompanies him to the spot where he is to establish the home. They carry an axe, jembe (hoe), panga (machete), a rooster and a three-legged traditional stool known as *Kom nyaluo*. These tools signify the beginning of a new homestead. The first house constructed on the new land is completed on the first day with help from relatives.

The *Wuon dala*, head of the homestead, blesses his land by having sex that first night with his wife, or first wife in cases where he is polygamous. The first wife’s house is erected directly facing the main entrance gate. All visitors are first welcomed into this house before meeting whomever they have come to see. If a man is polygamous, the second wife’s house is constructed to the right of the first wife’s. The third wife’s house is constructed to the left of first wife’s house. All the land and livestock belongs to the *Wuon dala*. The positioning of each structure constructed within the homestead is governed by cultural practices that are highly controlled by taboos.
Every season, *Wuon dala* allocates each wife a piece of land to cultivate. This piece of land is not permanently allocated and may change as often as each rainy season. One of the oldest female participants stated that:

*We (women) are enclosed and confined within the homestead. We only own the small garden behind our houses. Actually we do not own it. It is the piece of property that we maintain throughout our life. We are fenced in within the cultural practices. We wait for our men to give us Loo (soil) every season. We cannot do anything unless our men perform their...*
duty first. It is very disheartening because many women are really industrious. Some women start trading in crafts and selling *Omena* (fish) when they see that the critical time for planting crops is disappearing and the man has not performed his duty. Other women borrow cow dung from their birth village and fertilize the fields. Unfortunately we have to seek for permission from our husbands to do anything.

Sons born into the home usually build houses, referred to as *Simbaa*, when they reach puberty. Traditionally, at puberty the lower six front teeth were removed to symbolize adulthood. However, this practice has since stopped among the Luo. It is only practiced by a traditional Luo religious group called *Legio Maria*. The first, third, fifth and seventh sons build their *Simbaa* to the right of the first wife’s house. The second, fourth, sixth and eighth sons build on the left side. In many cases, sons marry and have children while living within their father’s homestead. If a son gets married, he and his wife are considered members of his mother’s house. They produce and consume within their mother’s house. Only when the son’s second child attains one year does the father allocate his son a piece of land to cultivate and grow crops. This land allocation is not permanent.

During a conversation with a key male informant, he agreed that the *Wuon dala* has a lot of power in decision-making. He said:

I am 46 years old. I still live on my father’s homestead. I have two wives and eight children. I do not own any piece of *Loo*, cattle, goat or tree. My father gives me a piece of *Loo* to cultivate every season. It is a shame that I do not own anything. I cannot establish a permanent house for my family because I do not own any *Loo*. Two years ago I bought two bull cattle from Sondu market. I wanted to rear the cattle and sell next year in order to pay for my sons’ college fees. This January, my father took one bull and sold it without asking me. I was quite angry and informed the *Jaduong Gweng* (village headman). *Jaduong Gweng* cannot do anything because I am dependent on my father.

Sons get a permanent piece of land from their father once they establish their own homesteads. Moving out of their father’s homestead is usually done in the order of birth: the first son has to move out first, followed by the second son and so forth. This order cannot be broken. If the first-born son dies before establishing his own homestead, the person who inherits the widow takes the responsibility of establishing the homestead. Therefore, if the first-born son does not move out of his father’s homestead, the rest are condemned to living in their father’s homestead. They cannot make their own decisions on land or get elected as leaders within their village. In such a case, the homestead is
composed of different generations of people who depend on the Wuon dala to make decisions for them.

The HIV/AIDs pandemic has led to a lot of changes in homestead composition among the Luo people. The impacts of HIV/AIDs on families, particularly in Africa, are heavily documented. Some of the impacts include death of parents and income earners, loss of assets, decline in agricultural productivity as labor is reallocated to taking care of the sick, loss of indigenous knowledge, and an increase in orphans. The HIV/AIDs pandemic in Kanyibana village has also led to changes in homestead composition. According to the focus group participants, HIV/AIDs has killed middle-aged people and only left the old and the young. Unfortunately, the young do not escape the disease. The rapid spread of HIV/AIDs has been, and still is, fueled by wife inheritance and other cultural practices. When the head of the homestead dies, his wife/wives are inherited by his brother. This brother takes the role of homestead head.

The preceding complex homestead composition led me to use the homestead as the study unit. Different generations are considered to be part of a homestead, living and sharing production and consumption of goods. Luo homestead establishment thus gives rise to variations in homestead composition depending on the life-cycle stages of the homestead. These include:

- A monogamous or polygamous grandfather, wife/wives, sons and their wife/wives and their children – generations A, B, and C.
- A monogamous or polygamous grandfather, wife/wives, sons and their wife/wives, grandchildren and great-grandchildren – generations A, B, C and D.
- A monogamous or polygamous family consisting of a husband, wife/wives and their children - generations B and C.
- A monogamous or polygamous family consisting of a husband, wife/wives and their children and great-grandchildren - generations B, C and D.
- A grandfather, his wife and grandchildren - generations A and C.
- A grandfather, his wife, grandchildren and great-grandchildren - generations A, C and D.

The last two homestead compositions are due to HIV/AIDs killing the parents. One male participant was eager to share with the rest of the focus group participants concerning the number of people residing in his grandfather’s homestead. The participant said that:
Our homestead has many people living in it. In the morning when we are all getting ready to start the day, one might assume that we are gathering for a ceremony. My grandfather had three wives. Unfortunately the first wife died in 1998. The other two wives are alive. My first grandmother had two sons and three daughters. My second grandmother had four sons and two daughters. My third grandmother had five sons and three daughters. All the daughters are married. The first son of my first grandmother died before moving out of the homestead. The person who inherited his wife died before he could establish a homestead for her. The next Jatero also never established a homestead for her. We are all now living in my grandfather’s homestead. Look at the many houses constructed in this homestead. The arrangement of the houses will clearly tell you what generation lives there. In our homestead we have four generations now. This includes my grandfather, father, myself and my children.

Under certain circumstances, a widow can be inherited by someone outside the homestead. This Jatero is usually a cousin or any relative living nearby. If the Jatero is from outside the homestead, he becomes the head of two homesteads—his own and the inherited homestead. I was quite puzzled by the strongly held practice of wife inheritance and this prompted me to have lengthy discussions with the male participants on the issue. The oldest male participant strongly stated that a Luo woman must have a Wuon dala to stand up for her and her children. He stated emphatically that:

A Luo woman once married can never be without a husband.

I saw several male participants nodding their heads in agreement to his statement. Because the women did not offer any comment, I understood that the above statement is a fact of life in the village, something that everyone understands and practices.

Who Inherits Property?

Because the Luo people are patriarchal and patrilocal, property is inherited through the male descent lines. Married women do not own land or property. They have user rights. Unmarried women, with or without children living in their father’s house, do not own property or have user rights. All women, after attaining marriage age, which is usually about 15 years, are expected to be married. If an unmarried woman dies before marriage, she is buried outside the homestead. This is done to ensure that her spirit does not haunt the living. In the Luo tradition, the life journey of a woman is to leave her father’s homestead through marriage. A woman’s spirit cannot rest within her father’s homestead. A female
participant clarified the practice of burying unmarried women outside the homestead as follows:

It is very important for a mature woman to get married. A woman does not have the right to use property unless she is married. If she dies before marriage, she must be buried outside the homestead. If she is buried within the homestead compound, she will appear to us, begging us to rest her spirit outside the compound. If a woman was married and she later returned to her father’s homestead and then dies there, the husband is informed. The husband is obligated to come and collect his dead wife and bury her in his homestead. If the husband refuses, the clan leaders then consults the husband’s clan leaders. If no agreement is reached, the woman is buried outside her father’s compound as if she was never married.

The right to own, use, and manage land is determined by the Wuon dala. Depending on the composition of the homestead, the head of the homestead may either be a grandfather, father or male inheritor. If the head of homestead is a grandfather, he gives a piece of land every season to his wife/wives and married sons. Married sons living within their father’s compound do not have the right to own land. They only have the right to use land. If the Wuon dala dies, then the wife/wives are inherited and the inheritor becomes the Wuon dala. This new Wuon dala becomes responsible for two homesteads.

When a son wants to move out of his father’s compound and establish his own homestead, he seeks permission from his father, or Jatero if his father is dead. As mentioned earlier, the first house constructed in this new homestead location is completed on the first day. Accompanying the house construction is the establishment of the fence. The fence is a significant part of the homestead that not only marks its boundary, but also symbolizes authority and ownership of property confined within the homestead. The fence is usually made of Ojuok (Euphobia tirucalli) which literally means “of witches”. There are two gates (Figure 10) that break the fence. The first is the main gate called Rangach that directly faces the door of the first wife’s house. This gate is used by visitors, in-laws and strangers, who first must make a stop at the first wife’s house. The second gate is used by members of the homestead and is located northwest of the first wife’s house. The Ojuok is a tree that is managed as a shrub through trimming and pruning by young men. Ojuok also serves as protection from witches.
Village Poverty Dynamics

Different definitions of poverty and methods of identification of the poor have been proposed by several authors (Chambers, 1993 and 1992; Sen, 1983). This is as a result of differences in ethnicity, environmental, social, economic and cultural conditions and other diverse factors that might lead to differences in meanings of poverty and factors associated with it. In the livelihood framework, poverty is characterized not only by a lack of assets and inability to accumulate assets, but also by the lack of choice with respect to alternative coping strategies (Chambers and Conway, 1992; DFID, 1999; Ellis, 2000). The framework further suggests that poverty is not only a product of material deprivation but a set of interlocking factors, including physical weakness, social isolation, vulnerability and powerlessness.

To gain an understanding of the level of poverty and prosperity within the study village, I conducted a participatory poverty assessment with the focus group participants. The composition of participants varied by age, gender, educational level and sources of income. After I explained the steps involved in the poverty exercise, one participant said:

This is very good because I can see we are all different people here. I see Jaduong X who is the wealthy man of the village and everyone goes to his homestead to seek help. I see the young men and women who have finished high school. They can help translate what we do not understand from English into Dholuo. I see grandmother Y who has lived in this village for so long. She is also a midwife who knows everyone born in this village. She visits many homesteads and interacts with them. It is a good selection for this activity because we are different.

Gathering information about homestead status proved to be quite easy because these are close-knit families and knowledge about changes in homestead situations is quite widely shared among members of the village. This is because people who have lived together for long periods have common shared experiences. I inquired from the village headman whether everyone knows each other in the village. He stated:

We have lived in this village for a long time. We have seen children born, grow and establish their own Dala. We attend weddings, funerals and other ceremonies together. We know who borrows food from whom. We know what activities each person is doing. We know whose children are living in the cities. For me, I interact with everyone because I am their leader. I am called when there is a dispute within and between homesteads. We all meet during chiefs’ Baraza, which is held once a week.
The participants acknowledge that they know what resources each homestead has accumulated or lost through the years. The participants also agreed that they know what events and/or situations are associated with what homestead during what period—e.g., death of a hardworking homestead member.

**The Many Ugly Faces of Poverty**

To start, I asked the participants how they would rate their village in comparison with a village that they know. The participants’ selected Chebitet village located on the hills and inhabited by the Kipsigis. All the participants, except the midwife, have been to Chebitet village. The participants agreed that their village is extremely poor in comparison to Chebitet.

We then discussed the meaning of poverty, known as *Mayaa* in *Dholuo* language. Several participants gave the following meaning of *Mayaa*.

- *Mayaa* is a lack of friends.
- *Mayaa* is a lack of food. It is eating in the evening only because there is no food for morning and lunch.
- *Mayaa* is empty homesteads. When a visitor comes at 10 in the morning, you will not find anyone. If you are lucky you might find someone who is sick, young children of 10 years and below or very old grandparents.
- *Mayaa* is a lack of children in the homestead. It is children running away to towns and cities.
- *Mayaa* is wives returning back to their parents because we cannot feed them.
- *Mayaa* is people locking their doors when they eat.
- *Mayaa* is our land, our soil. Our soil is sick. It cannot produce any food. It is producing *Mayaa* now.
- *Mayaa* is the gully that is eating our land.

To get a consolidated meaning of *Mayaa* was very difficult based on all the suggestions given above. However, the participants selected a young man to put all the above meanings into a sentence and he came up with several sentences. The participants modified it and finally agreed on the following meaning of *Mayaa*.

When you walk into a homestead, there is no one to welcome you. It is eating at least one meal a day, lacking money, friends, wives and relatives. When you see people shutting their doors when they eat and eight-year-olds leaving home for jobs far away from home, you
know it is Mayaa. It is the daily increase of man and animal sickness. It is land producing no food and rapidly disappearing under the Ongoro [gully].

The above definition of poverty implies that the existing measures of poverty cannot be used to define and/or explain the extent and duration of poverty. The participants described poverty according to the status of their land and food availability, migration patterns, health of people within a homestead and village social relations. To them, poverty encompasses the natural, social and cultural dimensions of their lives and livelihoods. The poor within the study group not only lack money, but also friends, relatives and social networks to act as safety nets. One woman who shared her life and her feelings about poverty said:

In this village people have become mean and angry at the same time. There are increased fights among people. People just quarrel for no particular reason. I cannot walk to my neighbor's house without prior notice. And most of the time, people do not want you to visit them during meal times. I do not have friends that I can visit as often as when I was a young girl. The other day, I walked over to Akinyi's house (Akinyi's house is about 70 meters away) and the door was locked. But I could hear people inside and when I called her name she said that she was sleeping. It was at noon and people do not sleep at that time. The children were giggling. I just wanted to ask her about the immunization date. Anyway, she told me that it is on Saturday. I walked back to my house and stood outside. After about 10 minutes, the door was opened and the children came out. I could tell that they had been eating. That is how bad our lives have become. And I do not blame them. I could do the same. The only people I rely upon are two women who call me when they hear that work is available up there in the Kipsigis and Kisii people. With these two women, I am sure of getting at least a job every two weeks. I work for three days in a week, and sometimes, I do not work at all. We walk all the way to the tea estates to ask for work, where I am paid tea leaves, sugar and detergent instead of money.

The disappearance of young children from homes further highlights their inability to escape from poverty. A 55-year-old key informant said:

When I was growing up, it was the married men leaving home and going into the city to look for work. He could return at the end of each month with cash and food for his family. Late 1980s into early 1990s, young unmarried men started leaving for the cities. And since these young men were not married, they never felt the need to return home. They only sent money
to their parents. Since the beginning of 1998, girls as young as 12 years are leaving for the city. And I know they will never return or if they do, they usually return to die from AIDS.

Unfortunately, parents do not know where their children are. In most cases, children contact their parents through relatives who visit once in awhile. One woman informed me: I do not know where my older two children are. I know they are somewhere in Kisumu but I do not know specifically where. Maybe they are dead now. Sometimes, I do receive money through the son of Oliech who comes home every weekend because his wife is here at home. And he informs me that my son or daughter gave him the money to bring to me. My daughter left home when she was only 12 years old. One day she said that she was going to look for a job and she has never come home. I just know that she is alive through the son of Oliech. What she is doing, I do not know. I heard from Oliech that my son is a fisherman at Winam Bay. Before it was only our husbands who used to go to the city and look for work. About 10 years ago, our sons started leaving for the city. And two years ago, our daughters left. They are leaving as young as 12 years. I can count for you the number of daughters who have left home. Unfortunately many are returning home dead or about to die. The daughter of my husband’s brother _ died last year and she was only 19 years old. She was working in Homa Bay town and she was not married. She started getting sick and after awhile, she was brought home by her friends. Two months later, she died. She never gave birth and her seed is lost forever. The son of Oliech – Peter – who was working in Mombasa also died together with his wife. They had one child who died at just one year old. Peter was working at the Port as a driver. He left home when he was only 14 years and got married at 16. He married a Taita woman and they only got one child. The child was the first to die, then the wife and Peter was the last one. You know in 20 years from now, there will be no one in this village. The young sons and daughters are leaving and not returning, or die before coming back. There will be no one to continue our clan. It is going to be wiped from this land.

Poverty Trends

After defining poverty, the participants listed the stages and resources that a homestead goes through in order to gain wealth. These were numbered 1 through 19. Figure 11 below shows the stages in terms of resources and activities that a homestead acquires as it transitions from being poor to becoming wealthy. Two resources were mentioned – having a car and a permanent house – but the participants rejected them. One participant said:
We have four *Wuon data* that are way beyond what we have. They are different from us. They have acquired so much wealth. If we include the resources that they have such as cars and stone houses, then all of us will be poor. We will eliminate those extreme resources and deal with what an average wealthy man has in our village.

After the group listed all the resources, I inquired at what stage they considered a homestead to be less wealthy, and at what stage does a homestead start to become wealthy. The participants held lengthy discussion and agreed that, starting from number 1 up to number 6, a homestead is considered poor. In addition, the participants agreed that a homestead starts getting wealthy after they reach number 13. Using these two levels of distinctions, the participants agreed that the poverty line falls between number 6 and 7 and the prosperity line falls between number 12 and 13. Thus, these two lines marked the poverty and prosperity lines of Kanyibana village.

In addition, the list on the next page shows the various resources and assets that a homestead needs in order to transition from poor to wealthy. The list includes the various livelihood strategies in which a homestead can be engaged, various sources of cash income, the social support system that has to be in place, assets and resources, and cultural practices. The most important natural resource mentioned is soil, which should be able to produce enough food to last six months.
1. Wuon dala must be present in the homestead
2. Having two meals for the family (morning and evening)
3. Ability to keep children from running away
4. Adequate clothing and dresses for the family
5. Able to get work and find jobs in other villages
6. Small business such as crafts, sand harvesting, selling vegetables
7. Fertile soils that can produce food enough for six months
8. Able to educate children up to secondary school
9. Purchase chicken and at least one cow
10. Purchase goats
11. Have two or more wives and be able to maintain them and children
12. Have friends who are dependable
13. Purchase more cattle — especially for milk
14. Trees for sale in the market
15. Business such as shop and a posho mill (maize mill)
16. Receive money from children in towns and cities
17. Have relatives who help with food, fees or take care of children
18. Ability to help others especially with cash or food
19. Have a steady source of income such as salary

Figure 11. Poverty and prosperity indicators. The first chart shows the hand-written data and the second chart is a typed version of the data.
I spent considerable time with a key woman informant discussing poverty and its implications in her life. She told me:

I use a 30 Kg bag of maize for three weeks. That is if I make a meal every other day in the evening. My sister, who is married in Muhoroni (50 Km away), sent me some sorghum and I will be making porridge with it in the morning and evening. My sister sent four gorogoros of sorghum and four sugarcane sticks. The children ate the sugarcane for supper last night and slept. When I am really down with nothing to eat, I send one of my children to my sister and my parent’s home to ask for food. I am so embarrassed because I should be the one taking food to my parents. It is the children who are supposed to feed our parents and in my situation they are still feeding me and my family. I know my husband cannot visit my parents because he is embarrassed about it. Sometimes when he asks where I got the food from and I say my mother sent it, I see his face fall down. At the same time, many of the women who get married into this village run away after a year because of lack of food or a job. Like me, I came from a fairly rich family and I know there is plenty of food in my father’s house. If I wanted I can go back home, my father cannot return the cow that was paid for me. Eventually he will ask me to leave his home and return to my husband. Many young women are running away because of hunger. Nothing else. The husbands beat them everyday because she is always complaining and asking for money to buy food. I decided to send my daughter to be brought up by my sister. Where my sister is married, the land is still fertile and she has plenty of food. My daughter will grow there and go to school. I know that she will develop behaviors of my sister’s children but I trust that my sister will take care of her well. Some of the people here have given their children to the Kipsigis up there in the hills. The Kipsigis want sons so that they can herd their cattle. I know one young man who has even married up there and has sworn never to return down here. This practice was done a long time ago. I remember my grandmother telling me about daughters who used to be given away when there was drought to the Kisii people. The daughters could return when the drought was over. Now the practice is back and people want a son who can work on the farm. In homes where there are no daughters, then they ask for a girl. Some people prefer girls because they can get cows when the girl gets married.

I was interested in understanding the poverty trends over time. The participants agreed to a three-period time frame: 25 years ago, 10 years ago, and the present (the year 2004). The three periods of time agreed upon proved to be effective because the focus group members agreed they could clearly remember the status of the homesteads 25 years ago. With the help of rigorous comparative inquiries with the participant group, we were able to ascertain the specific homestead poverty-prosperity status and factors that helped homesteads escape out of or fall into poverty or remain stationary. Remaining stationary, in this case, meant either having been wealthy or less wealthy for the past 25 years.

Based on the stages and resources listed above, participants were able to identify the stages of each homestead according to the three time periods: 25 years ago, 10 years ago and present day. The participants identified two people to facilitate this process. One
person was to write the information generated and the other was to read aloud names of homestead heads. The process was carried out as follows: the writer drew a four-column table. The first column was headed “names,” the second column was headed “25 years ago,” the third was “10 years ago” and the last was headed “2004.” In the first row, the writer wrote the name of Wuon dala. The second person had a list of names of all Wuon dala in the village. This person was to read aloud each name and participants gave a number to the homestead based on the list of resources previously generated. Below is an example of the process.

Reader: What number would you give the homestead of X 25 years ago?
Participants: Number 4.
Reader: What about 10 years ago?
Participants: Number 7.
Reader: And now, where could you place the homestead of X.
Participants: Number 3.

For this homestead X, the participants were able to observe that the homestead was poor 25 years ago, moved to average bracket (number 7) and currently has fallen back into poverty. The same procedure was followed for all the homesteads and a chart as shown on Figure 12 was developed.

<table>
<thead>
<tr>
<th>Name of homestead</th>
<th>Stage 25 years ago</th>
<th>Stage at 10 years ago</th>
<th>Stage in 2004</th>
<th>Poverty level</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>Always poor</td>
</tr>
<tr>
<td>Y</td>
<td>16</td>
<td>9</td>
<td>5</td>
<td>Fallen into poverty</td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>15</td>
<td>19</td>
<td>Always rich</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>8</td>
<td>17</td>
<td>Escaped poverty</td>
</tr>
</tbody>
</table>

Figure 12. Mapping of poverty trends for each homestead.

If a homestead was called and it did not exist 25 or 10 years ago, it was given the number assigned to the father. This happened in situations where a son had established his
home within the last 19-11 years or 9-1 years ago. This information became very valuable to compare poverty status between fathers and sons. The information also proved important to assess whether children escaped or fell into poverty or maintained their father's status once they had established their own homesteads.

Based on the information gathered above, I was able to track changes in homesteads status using four groups; P-P - homesteads that were poor 25 years ago and poor now; P-NP, homesteads that were poor 25 years ago, but not poor now; NP-P, homesteads that were not poor 25 years ago, but poor now and; NP-NP, homesteads that were not poor 25 years ago and not poor now. Category P-NP and NP-P indicate transitioning trends, P-NP depicts homesteads that have escaped poverty, and NP-P depicts homesteads that have fallen into poverty.

In Kanyibana village, 19.0 and 21.0 percent of homesteads were considered always poor and never poor, respectively, within the 25-year time frame. However, 58.6 percent of the homesteads fell into poverty and only 1.4 percent managed to escape it. Consolidating the four groups into two shows that 77.6 percent of the homesteads are currently considered poor and only 22.4 percent are considered not poor. The 58.6 percent of the homesteads that fell into poverty were considered not poor 25 years ago.

Table 4. Distribution of homesteads in Kanyibana village based poverty-prosperity classification (n=138 homesteads).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Percentage of homesteads</th>
<th>Number of homesteads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always Poor</td>
<td>19.0</td>
<td>26</td>
</tr>
<tr>
<td>Not Poor → Poor</td>
<td>58.6</td>
<td>81</td>
</tr>
<tr>
<td>Poor → Not Poor</td>
<td>1.4</td>
<td>2</td>
</tr>
<tr>
<td>Never Poor</td>
<td>21.0</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>138</strong></td>
</tr>
</tbody>
</table>

I shared the above figures with the participants and one participant agreed that she has witnessed changes within the village ever since she had married. She said:

When I first arrived in this village in 1974, I was attracted by the amount of food that the village was producing. In fact what attracted me to my husband was the way he was dressed and the reception I received from his relatives. Everyone welcomed me into the homestead. Women my age wanted me as a friend. Older women gave me a lot of advice. My husband
bought me five dresses as a gift. My own mother was very happy because I used to send food and clothes to her. In mid 1980s, everything seemed to change so suddenly. Everyone in the village started being mean and angry. My husband could not afford to buy me new clothes. My co-wife ran away to Nairobi and left her children behind. When I first arrived here, there were ceremonies such as marriage and social gatherings, almost every month. People were happy. Now all I see are sullen faces. Many people do not have enough food. Many people do not have friends at all. Everyone is hiding from each other because they are embarrassed.

Prime Victim

The term “widow” does not exist among the Luo people. Every mature woman is linked to a man, be it her husband or inheritor. However, there are women whose husbands have died and they have refused to be inherited. Apparently, the women refused to be inherited after many of them learned how the HIV/AIDs disease was transmitted. These women have become the prime victims of poverty. They do not own any property and any activity that they undertake must occur outside their village. They cannot farm on their dead husbands’ land because no rituals are performed.

It was extremely difficult to make an appointment to talk with one of the widows, because these women who work outside the village leave very early in the morning and return late in the evening. Furthermore, they cannot spare time to talk, so I had to accompany one woman to her workplace. She was working as a farm worker in the home of a Kisii man about four kilometers away. She shared her plight as follows:

My husband died in 1994 and I refused to be inherited. I have four children and life has been very difficult. Before he died we had a lot of money. My husband worked in Kisumu town and he came home at the end of every month. He was able to support me and his relatives as well. When he died his brother was told to inherit me. I refused and since then I am considered an outcast. I do not own anything. I cannot farm because I refuse to practice sex with any man. My neighbors, brother-in-law and their wives do not want to associate with me. I cannot get help from anyone. My brothers-in-law recently started farming on my late husband's land. I talked with the clan elders and chief. But they are not willing to help me because it is a family matter. The only way I get food and money is working away from my own people (the Luo people). Here no one knows my situation. I am not paid much, but at least I buy food and a few clothes for my children. When my husband was alive, we used to eat three meals a day. During the flood season, we moved to Kisumu town and lived with him. There were periods when we ate a meal a day knowing tomorrow we could eat three to
compensate for the previous day. I grew sweet potatoes to fill in the gap when maize was in short supply. However all this has changed. I now space out my food supply so that it lasts for a while. Not a whole year. We eat one meal usually in the evening. What can I do? I save the little food and money that I have to last for a longer time. My children have adjusted to living on little food and dressing in tatters. They know their father is dead.

**We are Worse off than our Fathers**

Together with the headman and two young men who had completed secondary school, we analyzed the poverty-prosperity trends of homesteads that were previously considered under different homesteads. These homesteads were those that did not exist 25 years ago and the sons were still under their father's homesteads. I will refer to these homesteads as sons' homesteads. Within the 25 years limits, a total of 44 sons' homesteads were established. Of the 44 sons' homesteads, 35 of them are considered poor. These 35 homesteads emerged from homesteads that were considered never poor 25 or 10 years ago. Of the 26 homesteads that were classified as always poor, only three are of sons' homesteads. Of the 29 homesteads considered never poor, only 6 sons' homesteads emerged as never poor (Table 5).

Table 5. Distribution of sons' homesteads relative to total homesteads based on the poverty-prosperity classification.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Total number of homesteads</th>
<th>Number of sons' homesteads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always Poor</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Not Poor → Poor</td>
<td>81</td>
<td>35</td>
</tr>
<tr>
<td>Poor → Not Poor</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Never Poor</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>138</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>

After analyzing the distribution of sons' homesteads, I shared the results with the focus group participants. The results did not surprise the participants. In fact, one female participant said:

*The wealth of our village has been dropping over the years. In 1970s we had a lot of cattle and goats grazing all over the plains. There were shops built and operating in our shopping center. Now all the shops are closed. I am not surprised that many sons are poorer than their fathers. Where would they get the wealth? Many sons were educated in 1970s and 1980s and were employed by the government. However, the money they made was*
converted into food very fast instead of investing in cattle and purchase of property. If Loo (soil) was giving us enough food, then the salary that they made could be saved. Furthermore, the sons were living in cities and towns, where they paid rent, bought food and clothes. The salary earned is spilt into two or more if the man is polygamous. The man used some money in town and sent a little home. It is still not enough.

A young man added:
I grew up when my father was wealthy. My father was married to three women. We had enough land to farm and have livestock. My mothers gave birth to a total of 23 children, who all demanded school fees. It became a burden to my father and the land that we had was not enough. My dala (homestead) is listed as “never poor” (while under my father) and now, I am listed as “poor.” That is true. I cannot compare myself to what my father had. I do not think I will ever accumulate the livestock he had. The six sons who are considered as “never poor” and having come from fathers that are considered “never poor” are very lucky. Their fathers were smart and invested in shops and posho mills. The sons inherited the property and are now making money. I can see that the sons have not accumulated their own wealth, but are maintaining their fathers’ wealth.

Causes of Poverty
It seemed from the various discussions with participants and key informants that the village was prosperous at one time. According to one old man, Jaduong Onyango:
It was not like this when I was growing up. Life has changed so much. I envy my father and grandfather because they died before witnessing what is happening to us today. Look around the village. What do you see? I see hunger, despair and a lack of hope. I see no tomorrow. I encourage our sons and daughters to go elsewhere and start a new life. This village cannot give them a tomorrow. Even our neighboring villages are experiencing our despair.

The participants agreed that a number of factors have contributed to the poverty in their village. The most important driver of poverty is Loo, the soil. According to the participants, if the soil is not producing enough food for each homestead, that homestead is doomed. Jaduong Onyango further added:
When I was growing up, the soil was rich. It was fat and very black. When I held a lump of soil in my hand, it was heavy and I could see many worms and ants running around. The smell was rich and deep. The smell went right into your head. I knew that the soil could produce a healthy sorghum. I remember planting maize, beans, sorghum and sugarcane. My mother grew beautiful vegetables at the back of her house. We could harvest over 15 bags
of maize and beans from just a hectare of land. Everyone in the village had plenty to eat and sell to pay for school fees and buy clothes. We had enough grass for our cattle and goats. My father had 35 head of cattle and many goats. Food was shared very easily because there was plenty. Now the soil is dead. The soil has been dying slowly and we never noticed until it was too late. I started noticing that the soil was not producing enough when my wife starting giving me food twice a day instead of four times. And ever since, the soil has refused to give us any food. And we have become poor, sad people.

The status of the land is not the only cause of poverty. Land-related factors include the tenure system and land management rituals. These are discussed in depth in the preceding section on land degradation. Other causes of poverty include floods, death of a wage earner and an increase in human and livestock diseases.

One participant noted that an increase in human diseases is causing more grief than the state of the land. According to the participant, a sick person reduces the number of people who can bring food and money into the home. It also increases expenditures because of purchasing medicines. He said:

My brother's house has been seriously weakened by his diseases and it has increased hunger and poverty in the house. When I visit him in his homestead, I can feel the hunger, sickness and sadness. My brother worked as a watchman in Kisumu until he was pushed out because he was sick all the time. He returned home to an empty granary. His family has had continuous crop failure. Last season, they harvested three gorogoro (6 Kg) of sorghum which they exhausted within two weeks. His family was better off when my brother was employed. Whatever little money he earned, he sent to his family and a little to me too. This kept us going in the home. Now he is down and his wife has to struggle alone. I help them sometimes, but I do not have a salary. My brother has TB [tuberculosis] which is untreatable. We are waiting for him to die.

Factors that cause a homestead to fall into or escape poverty are listed in Table 6. The factors are listed in order of importance as defined by participants. According to the participants, for a homestead to fall into poverty, it must experience at least three of the factors listed. For instance, involvement in multiple activities to generate food and income was cited as the most important factor that causes a homestead to fall into poverty. However, the participants noted that participation in multiple activities is usually an indication
of underlying factors such as widow refusal to be inherited, poor land, death of an off-farm income earner and funeral expenses. One female participant emphasized that:

> It is very hard to fall into poverty because of one reason only. If it is one reason, homesteads can take time to rebuild and easily recover from the problem. But in our case, one factor builds onto another, and then another, and then another. This can occur within one year and a homestead that we once considered wealthy becomes poor. So, if anyone is to help such a homestead, they should not tackle only one problem, but try to tackle all the problems at once. And every homestead experiences different problems.

Table 6. Factors influencing poverty-prosperity dynamics.

<table>
<thead>
<tr>
<th>Falling into poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Multiple activities to generate food and income. There is lack of concentration to build upon one strategy.</td>
</tr>
<tr>
<td>2. Widow refusing to be inherited.</td>
</tr>
<tr>
<td>3. Cultural practices that hinder people to invest and accumulate assets.</td>
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<tr>
<td>4. Floods that kill livestock and people. This makes the homesteads unable to recover after a flood.</td>
</tr>
<tr>
<td>5. Human diseases such as malaria, HIV/AIDS, tuberculosis and typhoid. Family members have to spend a lot of money to purchase medicine.</td>
</tr>
<tr>
<td>6. Declining land productivity due to multiple floods, drought and fertility.</td>
</tr>
<tr>
<td>7. Death of an off-farm income earner.</td>
</tr>
<tr>
<td>8. Funeral expenses. When the Wuon dala dies, one or two cattle are slaughtered. Total number of cattle slaughtered is also dependent on status of Wuon dala. For instance for a chief, eight cattle are slaughtered.</td>
</tr>
<tr>
<td>10. Livestock diseases that kill cattle and goats.</td>
</tr>
<tr>
<td>11. Paying school fees and expecting children to get jobs after graduation. In most cases, the children do not get jobs and become dependent on their parents.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Escaping poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remittances from people working in cities.</td>
</tr>
<tr>
<td>2. Investing in and concentrating on one non-farming activity.</td>
</tr>
<tr>
<td>3. Educating children who get employed in the city and send money back home.</td>
</tr>
<tr>
<td>4. Assistance from relatives especially from wife’s family. Some women are given cattle, goats and cash to invest in small business by their sisters or brothers.</td>
</tr>
</tbody>
</table>
Section II: The Kanyibana Land

Meaning of Land

Land occupies an important place in the political history and cultural organization of the Luo people. Historical studies indicate that the Luo people fought to obtain the land they presently occupy from the neighboring Kisii and Kipsigis people. The Luo fought with the Kisii and Kipsigis people who initially occupied the Kano flood plains. The Kisii and Kipsigis migrated into the present day highlands to escape war with the advancing Luo.

To the Luo people, land has two meanings. First is *Piny*, which includes the earth, water, air and sun. *Piny* is a capital that they fought for and own. *Piny* comprises the territory that provides an environment for animals, plants, birds, living people and dead ancestors to exist. According to the key informant:

*Piny* is all the space that we own, from the sky to this solid surface. It is a place where we perform our rituals, bring forth new children, and roam when we are dead. *Piny* belongs to us, and the animals and birds that fly across the sky. It is a place where we are all in harmony.

The second meaning is *Loo*, which directly means soil from which they get food, water and fodder. It is through usage of *Loo* that their generations are sustained and culture continued. According to the study group, *Loo* is their patriarchal heritage through which families are created and continued. The Luo consider land an environment in which different elements coexist. It is a spatial location wherein all the elements are interconnected, including the living and the dead.

Kanyibana people have occupied their present land for years. In the early 18th century they shifted from primarily being fishermen and herdsmen to cultivators. With time, they have developed their own indicators of the state of the land. The participants agreed that their land has become barren and poor. One woman volunteered to explain the status of their land. She said that:

Our land has become poor. The soils cannot produce any food. The land cannot keep our children at home. Our ancestors are not happy either. The waters of River Sare and Awach are brown, dirty and have a lot of diseases. I hear that the waters of Nam (Lake Victoria) have become green and are suffocating fish close to the shoreline. Maybe our land is telling us that it is time we migrated to another land. Look at the soil. Our soil is dead. It does not have life in it. Feel and smell it [I am handed a sample of soil to feel with my fingers]. It is dead. The animals that live in the soils migrated to the Kipsigis and the Kisii lands. It is very
sad that even the animals living in the soil do not want to live in this village. I think the ants and worms that have migrated are telling us that we should migrate too [she shakes her head sadly].

The participants got quite excited by the woman’s description of the land. Another participant added:

I agree with Mama Atieno. The land is angry with us now. I have seen the land regurgitate the bones of our ancestor who were buried a long time ago. This happened in the home of our village headman. One day he woke up and found human bones in his homestead. The soil has been swept away into Nam (Lake Victoria) and our dead are coming back to the surface. We do not have Loo (soil) anymore. All that is left are pebbles, stones and smooth surfaces that glitter like a silver shilling coin in the blazing January sun.

Indicators of Status of the Land

The focus group participants agreed that their land has become poor and can no longer support them. The participants identified several signs that they have observed and experienced as the land became poor. Together, we grouped all the signs into four main categories: soil, water, plant and social signs.

a. Soil indicators

The participants listed all soil indicators. A total of 12 indicators associated with the soil were identified. Something very important occurred at the beginning of this exercise. After I requested that the participants give me the indicators of their poor land, everyone chorused, Ongoro. I was quite startled because it is a Luo word that I did not know. The village headman informed me that it means “gully”. I realized that it was going to be very easy getting the indicators because the participants had local names of indicators. At this point, the village headman stood up and said:

We can list all these indicators, but the worst of them is Ongoro – gully. Ongoro was the first important indicator that we noticed. Ongoro has become our enemy and competitor for land. Unfortunately it is winning the battle. Ongoro sweeps away the animals, the soil, and the food contained within it. It is consuming not only the land, but our life as well.

However, I encouraged the participants to list all the soil indicators. After listing the indicators, the participants were able to rank them. Ranking was based on the contribution of each indicator to the poor status of land. The indicators, in order of importance, included
gullies, flooding, running away of soil from the surface, rocky surfaces, barren soil, water running across the surface (*Ohula*), stony surfaces, hot soil, hungry soil, cracked soil, no soil animals, standing pillars of soil, ponding on some land, pebbles from other places being carried and deposited by water on the land, hanging rocks, light soil, dust storms, deposited stones and soil on fences, and eating of river banks.

Figure 13. Gullies formed on western part of the village. Gullies like the one above run across the village. Together with participants, we attempted to calculate the area covered by the gullies, but it proved impossible because the village was covered with gullies and rills. However, the participants were able to locate the gullies in their village on maps that they drew.
Figure 14. Standing pillar of soil. Participants stated that about 20 years ago, the village ground level was where the man is pointing. Over time, this has been eroded. The man in the foreground is 6.2 ft tall.

Figure 15. Cracked soil. The soils used to crack during dry season that starts in November and lasts till mid-March. According to the participants, soils are cracking now during the rainy season as well.
Figure 16. Eating of river banks. Participants stated that the river is eating into their land. One male participant stated that in 1975, he could jump from one bank of the river to the other easily. Now the river is too wide to jump.

**Gully – the roaring monster**

Gully is an extreme form of erosion that destroys the topsoil and subsoil. The participants agreed that gully formation started in the early 1970s. Gullies started forming about 10 kilometers away from their villages near Lake Victoria. A male participant said:

We first noticed a lot of water running through our village around 1975. This coincided with the time when people started cutting trees for charcoal in our village. Trees were cut in our plains until 1982 when there was an attempt to overthrow the former President Moi. We had many trees growing in our village. All were cut down for charcoal. Unfortunately we still had many cattle per homestead, about 30 each. These cattle grazed all over the land and with no
trees to shade the grass from the intense sun, all the grasses died leaving the land bare. Around 1985, the Kipsigis up there started cutting their trees and this worsened the problem of flooding and made the gully grow faster. Actually we contributed to the cutting of trees on Kipsigis land. The Kipsigis do not know how to make charcoal. And we have perfected the art. We buy the trees from them and make our charcoal.

The cutting of trees and lack of tree cover on the landscape exacerbated the erosion and therefore accelerated gully formation. The many livestock herds that the people owned also contributed to gully formation. This occurred particularly along the tracks that the livestock walked to watering points. With time, and with more trampling, the soil is loosened and it is easily swept away by wind and water. The participants agreed that they first noticed gullies forming along the cattle tracks. One man told us:

I had 45 cattle and many goats when I was working with the Ministry of Lands in Kitale Town. I bought the cattle to keep and sell when I needed money. My neighbors envied me. I was a wealthy man. My sons were taking care of the cattle and they always grazed them along the river bank. My land touches River Awach and I used to own about 60 meters of the river on my side of the land. The cows could graze along the river and drop down to drink water. With time, the land along the river crumbled and fell into the river. Also channels started forming into the land starting from the river. These channels ran deeper and deeper and further and further into my land. Eventually, they reached my son’s Simbaa and it collapsed. Furthermore, after every flooding season, I have noticed that the channels are deeper and deeper.

I inquired why the village has not tried to control the gully. One middle-aged participant quickly answered:

When I was growing up, we used to run about five kilometers away to play in the gully. My friends and I could laugh at collapsed houses. I never thought that the gully could one day reach us. I used to ask my friend why some of the homes did not stop the gully from reaching them. As I grew up I realized the reason why. Some people cannot protect the land because they do not own it. If our father gave us the land early in life, we can feel responsible and protect it. Somehow along the years, the gully has reached us and it has destroyed homes, our cattle and our lives. Can we control the gully? Unfortunately, no. To control the gully, we need power and freedom from some of our cultural rituals. We do not have power. Some of these participants here today do not own land. They have what their father gives them every season. The gully has power right now because it decides what to do. For us we have to wait for decisions from our fathers. The gully with its strength is
constantly changing, slowly creeping into our land. It challenges us each day. It has controlled our lives. It has made us fearful people. When my wife leaves each morning to search for work, she wonders whether she will find her house in the evening. I too wonder. The gully is a silent killer of land, eating the land slowly by slowly just like AIDS. We call it the roaring monster because when there is a rainstorm you hear the water rushing through it. The only advantage the gully has over AIDS is that we see the gully coming.

**Hot, hungry and cracked soil**

I was fascinated by the term “hungry soil”. How does a soil get hungry? According to one woman:

A soil can get very hungry. When the soil is in this condition, even if you poured tons and tons of manure, the soil will not hear the manure and respond. It will not bear any fruit. The soil will consume the manure and still demand some more. I wonder what happens to the manure. Maybe the depth of the hunger is as deep as the gully. The soil stays hungry all the time.

The participants noticed these conditions around the late 1980s. Cracking of the soil is a characteristic of poorly drained black cotton soils. The participants believe that the condition became worse as the land became bare of vegetation. The soils also became hot after vegetation was cleared.

Our soils have always cracked. But they used to crack during the dry season. Now the soils crack all the time. When we put a crop seed into the soil, a few days later you will find it on the surface. We have to keep checking the seed all the time, till it germinates. Even after germination, sometimes the roots are exposed and the crop dies. The soil has become hot too. In July when we are expecting the best weather, the soils become so hot that we cannot walk on bare foot. No crop can withstand that amount of heat. It dies within a few days. Sorghum can withstand the heat, but we prefer maize and it dies very fast.

**b. Plant indicators**

A total of seven indicators were listed under plant indicators. The most important indicator was decrease in crop yields, particularly maize. One participant noted that the decline in yield of maize and beans started around the mid-1980s. He said:

I remember the Opon (long rainy season) harvest of 1985 was very poor. I used to get about 25 bags of maize from my one hectare of land and during that year, I only harvested 9 bags of maize (a bag of maize weighs about 90 kilograms dry weight when shelled). Since that time, the amount of maize and beans I could get started declining. Now I only get two bags. If I am very lucky and there is no flooding, I can get six bags. The amount of beans I get is
also very little. We sow local bean seed which is already infected with disease. I am also lucky if I get 10 gorogoros of beans (a gorogoro is a 2-kg tin).

Other plant indicators, in order of importance, include stunted crop growth, stunted tree and shrub growth, yellowing of maize and bean leaves, presence of *striga* and other “bad” weeds, disappearance of some tree and shrub species and crops, and plants not flowering. By “bad,” the participants said that the weeds eat all the crop food in the soil. Furthermore, once the weeds have established themselves, it is very hard to get rid of them.

Figure 17. *Striga hermonthica* weed (local name: *Kayongo*), shown with purple flowers, is commonly referred to as witch weed, because once it infects the land, it bewitches the soil. The participants stated that striga weed destroys so much of their maize and sorghum crops that they do not harvest anything. *Kayongo* is a parasitic weed that infects cereal crops and can lead to 40-100% crop loss (Khan et al., 2001).
Figure 18. *Acacia drepanolobium* (local name: *Adugo*) is a dry land species that grows well in areas of low soil fertility and less moisture. Goats browse on this shrub during the dry season.

Figure 19. *Ipomea kituiensis* (local name: *Obinju*).
Figure 20. *Aloe ukambensis*. This plant is used by the herbalist as medicine to treat cuts, burns and ulcer. *A. ukambensis* grows well in dry lands. Kanyibana residents started noticing this plant in mid-1990s. Notice the bare ground and scattered *Ipomea kituiensis*, *Acacia drepanolobium* and pillars of standing soil in the background of the photo.
c. Water indicators

The participants identified five water indicators. In order of importance, these include vanished springs, brown muddy water, dead insects floating on water surface, increased number of diarrhea cases, and sediments at the bottom of stored water.

Figure 21. Muddy drinking water. A young girl drawing water from the ditches along the roadside after a rainstorm. Most families collect such rainwater for drinking, cooking and washing utensils because the Sare and Awach Rivers become too muddy after a storm.

The participants noted that during certain months of the year, water from the Sare and Awach Rivers could be very muddy, especially following a rainstorm. When that happens, the women and young girls are forced to collect water from ditches and along the roadside as shown above. The water is cleaner because the sediment has settled. The participants said that they face a lot of challenges with the water that they collect for domestic use. The water is usually muddy and they do not know techniques of filtering it, and it has disease causing organisms, specifically cholera disease.
Figure 22. Muddy waters of the Nyando River. The waters of the Nyando River hold a lot of dissolved and suspended sediments. During the rainy season, the waters turn a dark chocolate color, unsuitable for human consumption.

Water quality and availability have declined over the past decade. Seasonal variability is seen in the Sare River which dries up six months of the year. Only one borehole is constructed and it is enclosed within the compound of a wealthy man. Nobody else has access to the borehole. When the Sare River dries up, everyone has to draw water from the Awach River for domestic use and livestock. The livestock drink directly from the river. A young woman said:

It is common to see cattle drinking water from the river at noon. A few meters away a woman is washing utensils. Another woman is washing clothes. Further down the river, women are collecting water for cooking and drinking. On another spot you see a person taking a bath. All the above activities are happening within a distance of 20 meters or less. I do not know how we survive. We have probably developed body defense against all the diseases that live in the water. Some people do get stomach upsets, but they drink herbs and the diarrhea goes away.
d. Social indicators

Most of the social indicators were given by women participants. I investigated the reasons why and one woman said:

It is because we run [manage] the home. We notice when food is little and when it is plenty. We know when our children are hungry and sick. So, we know these signs.

The social indicators, in order of importance are: increased cases of hungry people, empty homesteads, increased migration into towns and cities, homesteads separated, reduced social time, increased human and livestock injury, children quitting school at age 12 years to go working, people closing doors when eating a meal, people having no clothes or tattered clothes, people being accused of trespassing, children rushing at visitors and strangers, increased quarrels in homestead and with neighbors, increased sickness at home especially among children, and giving of children to be reared by other people.

**Homesteads and friends separated**

This indicator has not yet been experienced in their village. However, the participants have seen it happening in other villages, and soon, they agree, it will be in their village if the gully is not stopped. According to one participant who used to visit his friend living in Katuk village located to the northwest of Kanyibana, he has not seen his friend for two years. The murram road connecting the two villages was about three kilometers long. However, due to gully formation, the walking distance between the villages now is about eight km because the participant has to walk around the gully to reach his friend’s home.

In Katuk village where my friend lives, houses and people within a homestead have been split into two by the gully. In Katuk, three massive gullies have cut the village into four parts. People who could easily walk to their neighbors’ homestead can now only shout greetings and messages across the gully. If someone wants to make a personal visit, they detour around the gully, sometimes as long as three kilometers. Yet the homesteads are about 75 meters apart. The gully has created a valley between the two homesteads. The gullies have isolated homesteads and thrown into disarray lifestyles that have existed for generations. I cannot visit my friend as I often used to. He does not come to my village either.
Figure 23. A hut about to be consumed by the gully. The distance from the gully to the hut is 3 meters. This gully at this point is 35 meters deep and 22 meters wide. I did not measure the length of the gully because according to the participants, it stretched for about 5 kilometers running north towards Lake Victoria. According to the participants, the gully has many hands (tentacles) and the major hands touch at least 9 villages.

**Increased human and livestock injury**

There are many incidences of injured people and livestock when they twist a leg and sometimes fall as a result of the gully. The participants reported that the injuries are worse when herding cattle, or when walking at night. One woman said:

I was lucky to escape with my life when I fell in the gully channel near Awach River. I had taken my cattle to drink water and the cattle started rushing towards the river. The first one tripped on the gully and fell. Two cows immediately following the first one also fell. As I was attempting to re-direct the other cows, I fell and twisted my leg. My three cows died on that day and they were slaughtered by the men in the village. Everyone had a feast on that day, because they got free food. I initially thought the injuries I got were minor, but I ended up spending so much money getting treatment.

Many people in Kanyibana village have lost their relatives to the gully in the neighboring Katuk village. Incidents of people and livestock falling into the gully in Katuk
village are common, especially in the early evenings as they walk home. The falls often have tragic consequences. According to one participant:

Last year, a primary school teacher who lives in Katuk village fell down into the gully on his way home from school. The fall left him with serious injuries which led to his death a week later. The agony that the teacher went through is still fresh in my mind. I helped pull him up from the gully that is 30 meters deep. It was very difficult to get the teacher out because the edge of the gully is so unstable and the ground crumbles very easily. Even after we got him out of the gully, there was no vehicle to rush him to the hospital. We used a makeshift bed to carry him to the hospital. It was disheartening listening to his eulogy because he was supporting many people in his village.

Figure 24. Gully cutting across a road. A young man sits and dangles his leg on the edge of a 35 meters deep gully, unaware of the danger he is in. The edge of the gully is very fragile and unstable and can collapse at any time. According to the participants, after a rainstorm, chunks of land drop into the gully and are swept away. In the background is a raised murrram road that has been cut off by the gully.
Mapping of Land Degradation Indicators

After listing all the indicators and holding the discussions, I wanted the participants to draw the indicators (at least the soil and plant indicators) on a village map. I split the focus group participants into three groups: men 40 years and above, men below 40 years, and women. I wanted to investigate whether there was a difference in indicator identification between men and women, and between two different age groups. I could not split the women into two groups because during this exercise there were only seven women available. Of these, only three were above 40 years and they refused to draw the indicator maps as a group.

Each group selected one person to be the writer and drawer. Because there were many indicators and mapping all of them on an A4 plain paper could make the map crowded, I made several copies of the village map that I distributed to each group. For each map, the group members could show where the indicator was located in their village. The indicator mapping took about four hours to complete. Each member in the group at least knew where some of the indicators were located.

Figure 25. Drawing of land degradation indicators by men aged 40 years and above. The middle man on the left side of the photo was selected to draw the map. The exercise was done under a tree away from the other two groups (women and men under 40 years).
A variegated soil

Two weeks after the indicator mapping activity, I held a meeting and shared the indicator maps with participants. I had drawn one big map and merged all the indicators onto one map. This was to allow the focus group participants to see the extent of soil and plant degradation and the location of each indicator in the village (Figures 26, 27 and 28).

The participants found the exercise very useful because they were able to see the location of each indicator. A woman participant said:

Our soil is like flower patches on a beautiful sweater. There is no space on the soil where there is no indicator. Everywhere is covered. I am surprised that we are even able to get some maize and beans from the soil.

The maps on pages 81, 82 and 83 show the extent of the knowledge and understanding of the land degradation problem in Kanyibana village. The maps drawn by women and men above 40 years were rather similar. The two groups placed 11 previously discussed indicators at the same spatial locations. However, men under 40 were able to locate only six indicators. One male participant aged 36 years stated:

I got married at age 25 and the piece of land that my father gave me and my wife to cultivate had lines of small ongoro (gully) running through it. I tried adding manure to improve the land, but it was too hungry. By the time I established my own homestead at age 32, I had stopped growing crops. The piece of land that I inherited from my father had a deeper ongoro (gully) with a smooth shiny surface. Nothing could grow on it. The only option left was work away from the home. My wife and I leave very early in the morning and return late. We never have time to visit our neighbors. We do not know what they grow. We do not know how their land looks. And this is happening to most young men in this village. We cannot locate where each gully is found in the village because we do not know.

A male participant above 40 added:

What the young man said is true. I do not blame them because there is nothing they can get from the land. Land has lost its value and young men understand that. For them to feed their families they must get out of this village. This worries me so much because if all young people run away, what will happen to our clan? It will disappear in the next 30 or so years. No girl wants to get married to our sons and those girls who get married and come and visit the village stay for two or three years and they eventually run away. Our sons are forced to marry another girl and the process repeats itself. Our own girls want to be married away from
these plains. They prefer getting married in the hills where they will have food and send some back to us. It is really shameful for our daughters and sons-in-law to feed us.

The map drawn by women showed more distribution of indicators across the village. The women’s map was extremely detailed and showed two or three indicators on the same area of land (Figure 27). One woman stated that:

We observe small details better than men. We also work on the land more often than men. Men in this focus group usually search for work in Katito and Sondu markets and hardly have enough time to work the land. For us women, even if we work outside the village, we also have to create time to work on the land.

**Section III: Causes of Land Degradation**

**The Beginning of the Problem**

Reflecting back on the definition of land, the participants realized that for them to clearly understand the cause of their land degradation, they had to draw a diagram linking each factor. Two young men were selected to do the chart. I led the discussion, because I had previously conducted such a participatory exercise and it had been dominated by men. I also wanted to ensure that participants identified linkages within and among the different factors. This is because as they keep adding more factors and linkages, the diagram gets bigger and bigger and it becomes rather confusing to the participants (Appendix B). I started by reminding the participants of the meaning of land that they had given me.

When you define land, it represents the environment around you. It is the soil, animals, plants, birds, ancestors and all of you. Land is a place where all these things interact. As such, if one is affected, then the rest are affected too. We have discussed in detail the status of your land, which you said is degraded. And you listed the indicators that you see representing poor land. The indicators are visible, such as gullies and empty homesteads. Now, we are going to discuss what made the land become poor. We will start by putting a box around the words “poor land” the young man writes and puts a box around the word. We will build from that box until all the factors that have caused your land to be poor are listed.
Figure 26. Land degradation indicator map by men 40 years and over (not drawn to scale).
Figure 28. Land degradation indicator map by men below 40 years (not drawn to scale).
We started the exercise beginning with one elderly woman telling her story about what had caused the land to be degraded. She said:

Our *dala* [homestead] has totally disintegrated. The reason is *ongoro* [gully]. *Ongoro* has and is still eating our land. We watch *ongoro* eat into our soil and there is nothing we can do. *Ongoro* is brought by too much water running down from the hills. This water does not find any barrier when it reaches our village and sweeps the soil away. After a rainstorm, you think someone was sweeping the soil to make it shine. We never had a problem with water running across our soil. In the 1960’s and 1970’s, Awach and Sare Rivers would fill with water during the rainy season and spill onto the swamps that ran along the rivers. If the swamps could not take more water, then some of it could come into our homes. The swamps stored the excess water. Now the swamps are gone and people started farming very close to the river. There is nothing to hold the excess water. In addition, we discovered, and by we, I mean the Luo living here on the Kano plains, we discovered that there are trees up there owned by the Kipsigis and we could buy, make charcoal and sell in Ahero and Sondu market, sometimes, as far as Kisumu town. We cut the trees on Kipsigis land and there was nothing to hold the rain. So when it rains up there, we know our village is going to be flooded.

Another participant continued:

We should not blame the Kipsigis for cutting the trees. We have cut most of the trees up there. We are greedy people. Our eyes saw the trees and saw that we would make money from selling charcoal. Look at the soil on our land. It does not have something to shield it from the water and the heat of the sun. Our cattle and goats eat everything they find, particularly along the rivers where the grasses are green and juicy. You should see the soil after cattle have walked on it. It is loose and if the wind blows, it carries it away. About 15 years ago, every home had about 20 cattle and many, many goats. All these ate up the grasses and the shrubs and left nothing. With the trees felled down on the Kipsigis land, and lack of grass on our soil, our soil is headed to *Nam Kavirondo* [the name of the bay where Nyando River enters Lake Victoria].

The British, the Kipsigis and We are to Blame

Kenya attained independence from British colonial rule in 1963. During the period of the British rule, a variety of crops and trees were introduced over all Kenya. On the Kano plains where the study village is located, crops that can grow well on black cotton soils were introduced. These were rice, cotton and sugarcane. To drain swamps and wetlands, the British administration introduced eucalyptus from Australia. A male participant stated that:
I remember my father telling us to plant trees on the swamp near River Awach. There was a swamp running along River Awach that had reeds, Osao (*Sesbania sesban*) trees, frogs, crickets, helicopters [dragonflies], and other animals. We planted so many trees and the chief came and inspected. The swamp was very difficult to work on because of the trees and the water. If one eucalyptus tree died, we replaced it. Over time I realized that the water was finished on the swamp. We were not permitted to cut the trees and only started cutting after we achieved independence in 1963.

During the colonial period, compulsory soil conservation measures were instituted. This was reinforced by the local chiefs who imprisoned able-bodied male members of a homestead if no structure was established. A male participant said:

\textit{We were forced to build fanya chini} [down-slope piling of soil dug from the trenches] terraces across the landscape. The British wanted to stop the increasing floods that were killing people and the cotton and sugarcane plantations that they owned. The first terraces in our village were constructed in 1948. They forced everyone, including the Kipsigis on the hills, to dig the terraces. We reinforced the terraces with stones and boulders and planted napier grass. Before the beginning of each rainy season, the chiefs inspected the terraces to ensure that they were stable. After the British left, some of the families destroyed the terraces. My father refused to manage the terrace and it collapsed. We started cutting down the eucalyptus trees and planted maize and sorghum instead. Unfortunately, Awach and Sare Rivers got angry and started pouring their water on our soil.

\textbf{Rivers Constantly Changing their Face}

The levels of water in the Sare and Awach Rivers are constantly changing. In addition, their course has been changing, though not as frequently and seasonally as the water level. One key informant said:

The rivers are constantly changing their face like a woman. One minute she is happy and the next she is angry and lashing out at people. In the rainy season, the waters fill the rivers and overflows onto the soil. This destroys all the crops that we have planted. In the dry season, the levels drop so much that cattle sometimes break their legs as they attempt to walk down to the bottom of the river to drink. Sare River dries up during dry season. Periods in between the extreme dry and wet season are the best time.

Since the 1940's, the Sare and Awach Rivers have been “eating” the edges of the village and their bottom as well. “Eating” the edges and bottom implies eroding the river banks and river bed, respectively. During the last El Niño rains, both rivers eroded their
banks and beds, and according to the participants, widened by one meter (half a meter on each bank). The rivers form the boundaries between Kanyibana and other villages, suggesting that the other villages are experiencing similar problems. The rivers cut large chunks of land which were swept into Lake Victoria. This caused damage to the nearby farmland because the farmers lost their soil. The depth of the rivers dropped by about one meter and, during the dry season, livestock and people have to descend steep slopes to get water.

The participants blame the constant change in water levels, width and the course of the rivers on the following factors:

- Increasing floods as a result of tremendous amounts of water flowing down onto their plains from the hills.
- Conversion of wetlands and swamps into rice, sugarcane, cotton and eucalyptus tree plantations.
- Harvesting of trees and shrubs on the hill slopes.
- Collapse of *fanya chini* terraces that were built during the colonial period to curtail water movement.
- Conversion of canals into cropland. These canals were built by the colonial administration to drain water from the swamps.

When the village floods, everyone migrates to nearby towns located on higher ground. Others go as far as Kisumu (30 km) or Kericho (55 km) towns. This destabilizes the local people’s livelihoods in many ways. First, as they cannot move with their livestock, the local people are forced to sell the animals at very cheap prices to butcheries or to other ethnic groups. Some of the cattle, goats and chickens drown as they attempt to cross the swollen rivers. Second, human diseases such as cholera, typhoid and dysentery break out that lead to death if medical care is not given. All the homesteads have pit latrines that fill up during flooding. These propagate water-borne diseases. In addition, flooding of the land provides a habitat for mosquitoes that transmit malaria. Finally, the homes are destroyed. Most of the houses are constructed of mud that crumbles easily during floods. Many families have to rebuild and/or refurbish their homes after the floods. Thus, they incur the extra costs of rebuilding and buying livestock. A male participant stated:

> When it floods we lose everything. We lose our homes, livestock, children, old people and our dignity. This happens almost every year. We are ashamed because we cannot protect our
wives and children. We can no longer guarantee them that they will be alive next season or next year. If the floods do not get us, then the diseases that come afterwards will kill us. If we escape the disease, then the hunger finds us. It is a continuous process of fear and uncertainty. Each day we wake up, we thank our ancestors. In many cases, when the families migrate to cities during floods, the children do not return home. They disappear in the cities and some go as far away as Mombasa town [this is a sea coast city located approximately 1150 kilometers away along the shores of the Indian Ocean].

The disappearance of children into the cities poses other problems for the village. A female participant whose three boys refused to return said;

Our clan is going to die. Death is standing at Rangach [main gate to the homestead], taunting and mocking us because it knows we have to open the gate for it to come in. When our sons disappear into the cities, they never return home. If they do, they come back in coffins. I do not blame them. There is nothing here for them. I only wish that they could come and visit us once in a while, build their little Simbaa. We miss them so much. The girls too leave when they get married. Eventually all that will be left are old people who will die in a few years. There will be no one in this village. Eventually the Kipsigis will conquer us and take all the land.

**Power of Wuon dala**

Wuon dala is the most powerful person in the homestead. The age of Wuon dala varies from the young aged 25 to over 80 years. He holds power to allocate land and livestock to his wives and sons, to make decisions, to become an elder, and to perform cultural rituals. The members of a homestead without a Wuon dala may scatter to faraway places. To the participants, the power held by Wuon dala is causing land degradation. One young male participant said:

I cannot do anything on my farm without asking my Wuon dala [in this case, Wuon dala is the man who inherited his mother] what to do. You can see he is old and worn out. I am stuck here in the home because my brother died before he moved. So my father cannot even subdivide the land amongst the sons. Every season, we all dig on the farm but no one feels responsible to take care of the land. The gully is steadily coming. I told my other three brothers that we should collect stones and fill the gully before it reached us, but they said that when our father will subdivide the land, whoever will get the gully land will then work on it. But my father is constrained by our traditions. We are condemned now and so are our sons.
According to the above participant, to control the gully and improve his land, he needs to break away from the cultural traditions. The cultural traditions that his forefathers put in place and practiced are costing him his valuable land. He said:

To control the gully, we need power and freedom from our culture. We do not have it. The gully has power right now. It is changing, creeping slowly on us, and challenging us each day. It has controlled our lives. When my wife leaves each day to search for work up there [referring to the Kipsigis living upstream], she wonders whether she will find the house intact.

As mentioned previously, if a Wuon Bala has more than one wife, he allocates each wife a piece of land to cultivate that season. If there are married sons living within his homestead, they too get a piece of land. Wuon Bala has power to take the land away whenever he wants. He has the right to demand the crop harvest. The sons and their wives feel discouraged because they usually invest a lot of labor and seed into production of the crop, only for the Wuon Bala to demand his share. One female participant stated:

It is particularly hard for women like me whose husbands are living in the city. My husband comes home when he is needed and leaves immediately. I till the land, weed and harvest the crop. My father-in-law demands that I give him some produce. What I get from the land is not enough for my children. He sells my produce to buy changaa [local alcoholic drink]. He does not give his wife the produce or the money. It is annoying. I have complained to my husband and all he says is that "it is my father's land and you live under his homestead." This is confusing to me because I am a Luhyia [another ethnic group] and I should be living and farming on my husband's land and not his father's.

For the married men still living in their father's compound, the power of Wuon Bala extends beyond sons to include his grandchildren. For instance, when a daughter gets married, the bridewealth brought into the homestead belongs to her grandfather.

Wuon Bala owns all the livestock that is in the home. This includes the cattle paid as bridewealth for his daughters and granddaughters. He decides on what to do with the cattle. When a son wants to get married, he has to request cattle from his father. When I was young, I harvested a lot of sand which I sold to trucks that came by our village. I made about 10,000 Kenya shillings (USD 150). I bought two cows and I took care of them. These cows sired more cows and bulls. When I was ready to get married, I knew I had nine cattle, of which I could give five to my prospective wife's father. As I made these plans, my father informed me that the cows are his and if I want to use the cows as bridewealth, I should ask
him. He was ready to give me two cows and said that I should work more to get other cows. I tried talking to him but he was adamant. I ended up paying only two cows, and over the years, I have continued to take cows to my wife’s home.

We are Fishermen

Linguistically, Luo people are classified as River-Lake Nilotes. Their traditional activity was fishing. The Luo migration patterns suggest that they migrated along the Nile River, eventually settling on the shores of Lake Victoria. Presently, the Luo people occupy the plains on the shoreline of Lake Victoria in all three countries: Kenya, Uganda and Tanzania. Fishing has been an art passed through generations. According to Ogot (1956), fishing as an art and occupation was highly developed with a specialization in river fishing, mud or wetland fishing, lakeshore fishing and fishing in the high waters of Lake Victoria.

The Luo people took up cultivation as they interacted with the Bantus, particularly the Kisii and Luhyia ethnic groups. The soils in the plains were fertile as a result of occasional floods. By the time the British colonists came, the Luo people were already cultivators, growing sorghum, cassava and millet. However, strategies for cultivation were not as highly developed as those for fishing. According to one participant:

We are not cultivators. We are fishermen and cattle herders. We do not have knowledge about farming like the Kisii people. We always cultivate facing the hills and this makes the soil easily swept away by water. We do not plant varieties of crops in one field. On a Kisii farm, you will find maize, beans, bananas, finger millet, tomatoes, onions, cow pea, ground nuts, and many other crops. They apply dung from cattle. We never used to apply dung till the government started telling us to. We do not have cultivation knowledge to share with our children.

The participants agreed that any new knowledge that they practice is usually from the Kisii and Kipsigis, among whom they go to work. One participant said:

I am a fisherman. My family is more secure than those that depend on crop farming because fishing is not seasonal. There are always fish in the river and lake. Everyday when I go to fish in River Nyando and sometimes Lake Victoria, I return home with a bountiful catch. My wife sells the fish and we get a lot of money. She also makes mats and ropes which she sells. We are not dependent on the land that my father gave me because there is no soil. All the soil is in Nam Kavirondo.
It was very interesting to hear that the Luo people do not consider themselves to be cultivators. I then inquired why they have established cultural laws that govern cultivation. The participant requested the oldest member to answer the question:

We have always had laws that governed our behavior. My grandfather told me that I must sleep with wives before performing any major activity in my homestead. He informed me that, a Luo man had many wives and usually the more wives he got, the more he ignored the first wife. The elders sat down and said that to ensure that the first wife was taken care of, Wuon dala must first sleep with his first wife. The next night he slept with the second wife and continued till the last wife. If married sons still lived in his homestead, they waited till their father slept with the last wife and then the first son slept with his wife. The son followed the same procedure if he had many wives and then the second son followed. This sexual ritual is performed during funerals, weddings, fishing, land preparation, sowing, weeding, harvesting and many other ceremonies. The sexual activity served its purpose and it still does because the first wife is not neglected.

**Sexual Rituals**

One of the cultural rituals that the Luo people perform in their every day life is sexual ritual. All land use and management-related practices are bound to sexual rituals. One male participant said that sexual rituals are also a way of blessing the land before planting. He said:

All Luo ceremonies involve sexual cleansing and blessing. We have sex before land preparation, sowing seed, weeding and harvesting of crops. We have sex when someone dies. We have sex the day before burial and the day after. We have sex when we establish a homestead. We have sex when bridewealth is brought and during a marriage ceremony. We have sex before we go fishing. Everything is tied to sex. And there is order on who performs the act before the other. A father living with his married sons in the same homestead has sex first, then first son and so on till the last son. And this is repeated during each activity or ceremony.

The sexual acts related to land are performed as way of blessing the soil and the crops. A woman may not till the land or perform any farming activity unless the husband has sex with her the previous night. As mentioned before, if the husband is dead, she is automatically inherited. The inheritor called Jatero is expected to perform the duties of her late husband. However, the high incidence of HIV/AIDS cases in the village is causing fear
among widows. Widows do not want to be inherited in case they get infected or transmit 
HIV/AIDS. A 36-year-old woman informed me:

My husband is sick. I know he has HIV/AIDS. He was sacked from the job he had in 
Kisumu city. I have heard my brothers-in-law talking amongst themselves on who will inherit 
me. It is a shame that the brothers are already talking about inheritance even before their 
brother has died. I do not want to get inherited because I will pass the disease to my Jatero, 
who will pass it on to his wife. I know there is AIDS and it is killing people. I have seen 
families die one by one. My husband is the first one in my home, but our neighboring 
homestead has lost two sons and their wives and there is a child of two years who is almost 
dying. On the other hand, if I am not inherited I cannot plant any crops. The other women 
will keep away from me because I will have broken the tradition. After I am dead, my 
daughters and sons cannot get married because there will be no man to negotiate their 
marriage. I am caught between two worlds.

Failure to be inherited by their brother-in-law implies that they cannot cultivate their 
fields nor perform any other duties within the village. Even though the widows do not get 
chased away from their houses, they become outcasts and nobody wants to associate with 
them. Most of the widows have become permanent features along the roads leading to the 
markets, nearby towns and/or the villages in the highlands. They trek to these places in 
search of jobs. The land left behind is not managed and is soon lost to agents of 
degradation.

Section IV: Livelihoods

Constructing Livelihood Strategies

The “livelihood strategies” concept denotes the various activities undertaken by 
people within a homestead in order to secure its economic and socio-cultural well-being. A 
livelihood strategy is undertaken to secure long-term survival of a homestead and society at 
large. In rural Africa, where small-scale peasant economies thrive, people draw upon a set 
of capitals as they pursue a livelihood strategy. The words capital and resources will be 
used to mean the same thing. Capitals include:

- Social - social organizations and networks, friends and family
- Natural – land, water, flora and fauna
- Financial - savings, credit, investments and employment
• Human - skills and knowledge, labor, health and nutrition
• Physical - roads, bridges, markets, clinics, schools, and social centers
• Cultural - values, norms, beliefs and rituals

A homestead constructs its livelihood strategies from the bundle of capitals available. However, ownership, access to and rights to the capitals serve as the basis for a livelihood choice. The people of Kanyibana village have a range of capitals, mentioned above, upon which they draw as they pursue a livelihood. The livelihood choices made by various Kanyibana people are governed by the status and importance of a given capital, and the associated risks factors that must be considered in management of resources. Status, a word accorded to a capital by the people of Kanyibana, implies the condition of the capital in relation to its potentiality. For instance, the land (soil) of the Kanyibana people has become degraded, and available options to utilize the land are becoming limited. Even though land is an important capital, its importance in relation to cultural capital is low. Sections III and IV suggest that the Kanyibana people strongly value their cultural practices and rituals. However, these practices and rituals seem to be hindering management and/or contributing to the loss of other resources.

Snowballing of Capital Erosion and Loss

Land as a natural resource capital is eroded in Kanyibana village. As previously mentioned, land comprises the space for animals, plants, and people – the living and the dead. The participants stated that land is a territory wherein the living and dead interact in harmony. According to the participants, if land has failed to maintain the harmony, people live in fear; uncertainty and chaos emerge. One male participated suggested:

We all have witnessed the magnitude of the impact that our land has and will continue to have on our people. Our soil cannot produce any food. The water is so brown-colored, dirty and contains diseases. The fish that used to live in River Awach have all died, or probably swam to other rivers where the water is clean. Our ancestors are being brought to the surface by the Ongoro [gully]. The animals living on top of and in the Loo [soil] are migrating to live with the Kipsigis and Kisii. Many trees that grew on these plains have all disappeared. New trees that have sharp thorns that pierce through a cow’s hide are now dominating the Loo. We do not have land and soil any more. It is gone. There is nothing left for our children unless a giant miracle occurs. And miracles ended a long time ago. Even though we are seated here talking about it, everyone in this meeting is wondering where the next meal is
coming from, whether their children are safe wherever they are, and whether their friend has heard about work.

Erosion of the land resource is triggering loss of other resources as well. One important resource that has been lost as a result of land erosion is financial. According to the participants, a loss of financial resources makes them lose power. The close proximity of Kanyibana village to the Kipsigis and Kisii ethnic groups offered them an opportunity to trade with these two groups. Ogot (1956) reports that the Luo people traded cattle, salt, fish, sorghum and millet with Kipsigis and Kisii in exchange for vegetables, bananas, fruits, maize and livestock fodder. Before the land was degraded, the Kanyibana people shared equal footing with other villages and ethnic groups. According to an old male participant:

When I was growing up, my mother and I used to carry sorghum and millet to Sondu market. At Sondu market, we met the Kipsigis and Kisii people who also had come to trade and buy our products. My mother always got a good price for the sorghum and millet because we produced the healthiest, fattest grain of sorghum. After I got married and established my homestead, the sorghum grain started becoming smaller and smaller. The Kipsigis and Kisii realized that our produce was not so good and started taking advantage of us. My wife could not get a good price in the market and eventually we stopped selling. We had to look for money elsewhere and not from the soil anymore.

The loss of ability to trade and get some cash affected the number of children attending school in Kanyibana village. In mid-1970s, the government of Kenya, through its Ministry of Education, set a policy that parents should contribute to school-building, both in primary and secondary schools. This school-building involved building classrooms and buying textbooks and writing books for their children. At the beginning of each school term – there are three school terms in a year – parents were mandated to pay some money to the school and buy books as well. The loss of cash from trading in Kanyibana village meant that many of the children could not attend school even at the primary level. A female participant stated:

My father educated me up to secondary school. I can speak English but my children cannot utter a greeting in English. A simple “how are you” is a strange word. I had six children, two died and none attended school. I could not afford to pay the school-building fund. The school required 90 Kenya shillings (about USD 1.20) per child per term. That is a total of 1080 Kenya shillings (about USD 15.43) per year. The harvest I was getting from the soil
was very little and I could not sell. My two nyikas (co-wives) could not afford to send their children to school either. My husband went to work in the tea plantation in Kericho and the money he got was not enough. We have children who cannot get a good job in cities. It is not their fault. It is us the parents who have failed them.

The above statement emphasizes the importance of building human capital, particularly by providing formal education for the children so that they must not rely only on the land. A person who receives adequate formal training in Kenya has the capability to move away from an agrarian-dependent subsistence. Another woman strengthened the above statement by saying:

Look at you Nyakisii [referring to me], I can see that your world is so different from mine. You come from a community that is barely 30 kilometers away from our village and yet our lives are miles apart. I am sure your father took you to school and ensured that you finished form four [high school] and went on to fly to America. When you finish your studies and return home, you will not depend on land. Instead you will hold a pen, sit in an office and get your food each month. Your food will be guaranteed, unlike us who rely on land. My father was rich but he married four wives and the resources that were available were split between the families. You know I have 35 brothers and sisters and only one brother is a lawyer in Nairobi. My sisters are all married and are living the same life that I am in right now. My husband finished his form four and managed to get employed as a security guard. But now he is sick and bed-ridden in the house. Of course he was fired from his work and now is depending on me to provide for him and the children. My children stopped attending school. One son is collecting sand on Awach River, the other bought a bicycle and he carries people between here and the main Kisumu-Kisii tarmac road. My two daughters tag along with me when I go to the Kipsigis to look for work.

It seemed that many of Kanyibana people trek each day to work for Kipsigis people and some go as far as the Kisii. The work is never guaranteed. Sometimes people can walk the whole day without finding any work. The daily trekking also happens between the village and Katito, Sondu and Ahero towns located 4, 10 and 12 kilometers away, respectively. However, this trekking is dominated by men, particularly those aged 20 to 45 years. In these towns, they help transport heavy loads onto vehicles, or ferry the loads between two shops. Usually these men are referred to as Manambas (tout boys). Because the wage labor is not consistent, especially jobs that involve working on Kipsigis and Kisii farms, Kanyibana people have to depend upon a close-knit group of friends. These friends
are not necessarily close homestead relatives, but individuals whom they depend on. A young female participant stated that:

I have two friends, Atieno and Akinyi. We became friends so that we help each other find work. If you are alone, you will not hear where there is work. Atieno and Akinyi also help me when I am sick. Sometimes, they take care of my children when I am away from home. I rely on them for information. No one is willing to share information these days and without friends, you are lost. People have become selfish and mean. I do not blame them because we are struggling to survive. The only time I see people helping each other is during funerals, because every homestead must have a funeral in a year. Some homesteads have two or three funerals. So if you do not help, you will end up burying your dead alone. That will be a curse, because our tradition does not allow the bereaved homestead members to bury the dead. It is usually done by other clan members within or from another village.

The statement about someone dying in each homestead every year caught my attention. A number of studies conducted in western Kenya indicate that the percentage of adult people dying from HIV/AIDS is increasing. The statistics usually cited include those people who have been tested. Many rural people do not go to hospitals and health centers for tests because of lack of cash to pay the bills and a shortage of hospitals. On the edge of Kanyibana village boundary is a social hall constructed through funds provided by the His Highness Aga Khan Foundation. The social hall was built to provide a place for people to hold meetings and also as a health clinic for pre- and post-natal care. The Ministry of Health used to hold weekly clinics for pre- and post-natal mothers and children under the age of five. Currently, clinics are held once a month. The social hall is now used for chief’s baraza and other meetings such as my focus group discussions.

Like many other Kenyan rural communities, the people of Kanyibana village do not have hospitals where people can seek medical attention. The closest hospitals where an HIV/AIDS test can be done are in Ahero and Kisumu towns, located 12 and 30 kilometers away, respectively. At Ahero, the government division hospital does not have adequate equipment, drugs or medical personnel. Kisumu has one of the largest government hospitals. It is well-equipped and has drugs and medical personnel. However, it is very expensive for Kanyibana people to travel to Kisumu to seek medical care. For every hospital visit, a patient pays 20 Kenya shillings (USD 0.30). This covers the doctor’s consultation as well as drugs. Coupled with transport costs, a patient and the person accompanying the patient will pay about 400 Kenya shillings (USD 6) for a return trip. Not
many homesteads can afford to pay this amount, because the average income earned per family in Kenya is estimated at Kenya Shillings 4500 per month (about USD 60) (Daniels and Mead, 1998).

To return to my interest in death cases, I asked the participants about what was causing this high number of deaths within a homestead. The village headman responded:

Dying is a natural process. But the rate at which people have and are continuing to die in this village is alarming. Before mid 1980s, people who usually died in this village were the elderly and young children below two years. These children were not strong enough to fight malaria. After 1985, the middle-aged people started dying. At first we thought they were cursed because they grew thinner and thinner each day. In fact we referred to the disease as Chira – the draining disease brought by ancestors who are not pleased. As more people continued to die, we realized there is something wrong. That is when the government told us that AIDS is killing us. Many of our sons and daughters working in cities died in large masses. The disease started in cities and eventually spread to us in the village. We inherit our women, even those who are infected. A man can inherit a woman whose husband died and he spreads it to his wives. When he dies, all his wives are infected and when they get inherited, it spreads further and deeper. It is very sad.

A woman participant continued:

The worst hit places are the beaches and bays on Lake Victoria. Many of our sons go to the lake to fish. For us, fishing is our way of life and as such it is also tied up with norms and beliefs just like soil use. For example, a man must sleep with his wife to inaugurate a new boat. Also at the beginning of fishing season, the man sleeps with his wife too. In most cases, the man comes back to the village, performs his duties and returns to the lake without his wife. While at the lake, he sleeps with many other women and in the process catches the disease.

HIV/AIDS affects all the homesteads directly or indirectly. Families spend a lot of money on drugs. The drugs include both traditional herbals and modern medicine. One thriving livelihood strategy in the village is specializing in herbal medicine. Previously, one person would be left at home to take care of the sick. However, this has changed because there are too many people sick, and a healthy person who misses a day’s work usually means less food in the home. There has been a widespread campaign by international and national women’s organizations discouraging Luo women from being inherited. The participant informed me that some women have visited their village three times in the past
two years. These women encourage them to refuse widow inheritance. However, one female participant lamented:

We Luo women are caught between two worlds: our world and the world we see among other women who are not inherited. Women from this other world came to talk to us, dressed in fancy clothes that I used to see in shops costing 3000 Kenya shillings (USD 42). They came to our village and held a meeting for women in this Aga Khan hall. They told us that we should refuse to be inherited. They said that AIDS is killing people and it is spreading through wife inheritance. But what they failed to tell us is how we will support our families once our husbands are dead. You see, when my husband dies, his brother will inherit me and he will provide me with support. He will be a father to my children. If I refuse to be inherited, I cannot dig the soil because I will not be blessed. I cannot plant any crop. If I refuse to be inherited, then I will suffer. I will be forced to move away or work in other people's homes. The other women will be told to stay away from me because I might influence them. I will be alone. Even my daughters and sons cannot get married because there is no man to negotiate the marriage. I know there is AIDS and it is killing people. I have seen families die one by one and women are inherited. They too die within two years. What do we do? We have to be inherited.

Friends and Survival

Friends play a critical role in livelihood strategies for the people of Kanyibana village. Because many homestead members leave very early in the morning and return late in the evening, people do not have time to be involved in groups. They rely on friends for information, particularly on availability of work. Using a Venn diagram, the participants listed four social groups that have been created in the village. These are Cherwa youth group, Orweda women's group, Agumo women's group and ACK church group. The Cherwa youth group has eight members who operate the boda boda business. Boda boda is a bicycle transportation system. It is an exclusive member group and attempts by other young men to join have failed. A boda boda operative said:

We do not want our group to have many members. If we accept everyone to join, it will lose its meaning and the benefits will not be so big. We are a small group of young men who want to accumulate money and buy a maize milling machine. We are committed to helping each other during sickness and death. If we include other young men, someone will steal our savings.
Membership in the other three groups is not exclusive. However, membership dues hinder other women from joining. The monthly membership dues are 25, 30 and 50 Kenya shillings for the Orweda, Agumo and ACK church group, respectively. Orweda group is exclusively for women involved in pot, basket and rope-making. Each member has to make five ropes every two weeks and weave two baskets or fire three pots. All the crafts are marketed in Sondu and Ahero markets. The money collected is given to members on a rotational basis. The Agumo group is involved in firewood collection from the Kipsigis farms. All the members trek each day and collect firewood to sell. Money is shared the same way as in the Orweda group.

To visually show group memberships, I used Venn diagramming with the participants as shown below.

![Venn Diagram](image)

Figure 29. Social groups and their linkages in Kanyibana village (number of members in parenthesis).

Three members belong to the Orweda and Agumo women’s group and four members belong to both the Agumo and ACK church group. Out of a total of 138 homesteads, members from 27 homesteads are involved in groups. No person from Kanyibana is involved in a group from the neighboring village. According to the participants, they rely on friends for work. Relatives only come to help when there is a funeral. The village headman said:

We do not have time to be involved in groups. We do not have money to share with other people. There is no way groups can be formed here. The existing groups involve very few people who share the same interests.
Kanyibana Village Subsistence Economy

A range of livelihood activities are undertaken by the people of Kanyibana village. The participants agreed with the village headman who said:

We cannot survive on our soils alone. We have to move beyond the village to get food. In fact, we have to go far away to get food. Each member of the homestead must contribute to the food basket. It is now expected that children as young as 10 years must join in producing food. Everyone must wake up and go to different places to get some food and cash. Our village looks like Kibera slums in Nairobi where you see people trekking as early as 5 am in search of work. The only people left are the sick and the very young. We all search for any activity that can help us.

The participants listed all the activities that people of Kanyibana are pursuing. Together with the participants, we amalgamated the activities into nine major strategies. They are shown in order of importance, starting with number one as the most important on Table 7.

Homestead Livelihood Differentiation

After all the livelihood activities had been listed and classified as shown on Table 7, a young male participant said:

We should divide the activities based on the four groups of homesteads we had listed two weeks ago. We had the always poor, the rich, the rich who became poor and the poor who became rich. This way, we can show her [referring to me] what each group of homesteads is involved in. This is because there is a difference in what activities a rich and poor homestead are doing. Also there is a difference in the number of activities that we all do and I know that people like me who are poor are doing so many activities to get food and make some little money. If everyone agrees, we can draw it for her [all the participants agreed].

The young man drew four boxes and on top of each box wrote the four groups of homesteads that the focus groups had identified during the poverty-prosperity assessment. As the participants shouted the names of activities of each box, the young man wrote everything down. The chart below shows the boxes and corresponding homestead types and the various activities they undertake.
Table 7. Diverse livelihood strategies.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Strategy</th>
<th>Description and range of activities</th>
<th>Percentage of homesteads</th>
<th>Number of homesteads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rural unskilled wage labor</td>
<td>This involves daily trekking/mobility from the homestead in search of work among Kipsigis and Kisiit farmlands and nearby towns. The activities include working on the farm, cattle herding, house maid, <em>touts</em>, transporters and tea-picking.</td>
<td>84</td>
<td>116</td>
</tr>
<tr>
<td>2</td>
<td>Artisanship</td>
<td>Pottery, basket and mat-weaving, rope-making, furniture-making.</td>
<td>77</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Livestock herding</td>
<td>Zebu cattle, goats and chickens.</td>
<td>75</td>
<td>104</td>
</tr>
<tr>
<td>4</td>
<td>Small business</td>
<td>Carpentry, bicycle transportation, fish net repairs, traditional herbalist, grain-milling, tailoring, money-lending, sand-harvesting, charcoal-making, professional funeral-singing, local alcohol-brewing and ox plowing.</td>
<td>68</td>
<td>94</td>
</tr>
<tr>
<td>5</td>
<td>Crop farming</td>
<td>Maize, millet, sorghum, cassava, beans, sweet potato, indigenous vegetables.</td>
<td>62</td>
<td>86</td>
</tr>
<tr>
<td>6</td>
<td>Vendor trading</td>
<td>This encompasses buying and selling of goods such as livestock, charcoal, maize, beans, fish and other domestic things such as kerosene, soap, sugar and salt. The people involved in this kind of activity are referred to as Jopesa (money people).</td>
<td>48</td>
<td>66</td>
</tr>
<tr>
<td>7</td>
<td>Urban employment</td>
<td>Salary pension jobs such as teachers and nurses, and casual jobs such as security guards, house maids, drivers and factory employment.</td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>8</td>
<td>Fishing</td>
<td>Fishing is done on the Awach River and on Lake Victoria exclusively by men.</td>
<td>28</td>
<td>39</td>
</tr>
<tr>
<td>9</td>
<td>Remittances and donations</td>
<td>Homestead members working in cities send home cash or food. Relatives send food as donations. Women particularly get donations from their parents, sisters and brothers.</td>
<td>25</td>
<td>35</td>
</tr>
</tbody>
</table>

Ranking of the strategies was based on the number of homesteads that pursue the strategy as well as its contribution to the homestead's food basket.
Always Poor (26)
Daily trekking/mobility, pottery-making, basket and mat-weaving, rope-making, furniture-making, bicycle transportation, fish-net repairs, sand-harvesting, charcoal-making, local alcohol-brewing, fishing, crops, professional funeral-singing, security-guarding, house maids, drivers and factory workers, selling vegetables, maize, beans, sorghum and fish, gifts and remittances.

Poor to Not Poor (2)
Pottery-making, basket and mat-weaving, rope-making, remittance and gifts, furniture-making, traditional herbalist, tailoring, carpentry.

Not Poor to Poor (81)
Daily trekking/mobility, pottery-making, basket and mat-weaving, rope-making, furniture-making, bicycle transportation, fish-net repairs, sand-harvesting, charcoal-making, local alcohol-brewing, fishing, crops, professional funeral-singing, security guarding, house maids, drivers and factory workers, selling vegetables, maize, beans, sorghum and fish, gifts and remittance.

Never Poor (29)
Grain-milling, money-lending, teaching, ox plowing, shop-keeping, crops, nurses, lawyers, remittances, insurance brokers and owning houses for rent in town.

Figure 30. Distribution of livelihood activities (number of homesteads in parenthesis).

The number of livelihood activities that different homesteads pursued varied across the village. The number of livelihood activities also varied depending on the wealth status of the homestead. The chart above shows the various activities in which homesteads at four different wealth statuses are engaged. The homesteads that have “always been poor” and those that have “fallen into poverty” are engaged in more activities than the other two groups.

On average, the focus group participants were able to identify six different activities that a homestead considered “always poor” or “fallen into poverty” pursues. This suggests that every member of the homestead is involved in an activity to generate food or income. One female participant stated:

Everyone in my homestead is involved in an activity at any time. My youngest son is 10 years old and he harvests sand from River Awach. My husband sells charcoal, which he burns after buying trees from the Kipsigis. My two daughters make pots and baskets that they sell at Sondu and Ahero markets. Myself, I work as a house maid in Mzee Onyangos’s
home. I work in his home every day except Sundays. When I have done the day’s work on Mzee Onyango’s home, I usually make mats that my daughters sell at the market. The only time we talk together as a family is in the evening when we are eating. My son and daughter hand me the money they have made for the day and I pass it to my husband. He gives me money for food and the rest he keeps for emergency.

Homesteads that have “escaped poverty” or have “never been poor” are involved in fewer activities. On average, these homesteads are involved in three activities. According to the participants, this is because the homesteads are able to generate enough money from one major activity. They require an extra activity as a safety net. Usually the person performing the main activity is the Wuon dala (head of homestead). The wife and children do the extra activity to generate money for their personal use. A female participant told the group that she was a wife of such a Wuon dala. She said:

I do not want to boast about my homestead. But what the participants have said is true. My husband is a lawyer in Kisumu town. He makes enough money to buy us food, cattle, clothes and pay fees for the children. All my children are living in Kisumu town. I usually come home to plant a few vegetables like kale and tomatoes. The vegetables I sell to anyone who comes to buy. My husband does not care about the money from the vegetables because he thinks it is very little. After selling the vegetables, I usually send the money to my mother and sister. They do not have enough money and so, the little that I send them, they appreciate. I also help some women with money, especially when their children are sick. I pay the boda boda operator to transport them to a clinic and also give the mother some money to buy medicine.

Everyone Must Scatter to Survive
Growing bodies of academic literature have documented the African livelihood diversification process (Ellis, 2000; Francis, 2000). Within this diversification process, household income is derived from a variety of agrarian and non-agrarian activities. In Kanyibana village, the diversification process is occurring and expanding as more and more local people shift from dependency on agrarian activities. In this village, a homestead is usually involved in a range of activities. In addition, diversification is occurring not only with livelihood activities, but the person within the homestead who is involved. Traditionally, the adult Luo were engaged in obtaining food for the family. A person was considered an adult after they reach puberty (Ogot, 1974). As late as the 1970s, young children were expected to attend school and assist with activities around the homestead. This was usually during
weekends or school holidays. Currently, children as young as 12 years are expected to search for work, or any activity that generates food and/or cash. One participant said:

My wife and 15-year-old daughter wake up very early in the morning and trek upstream to look for work. My son aged 18 owns a bicycle which he uses for Boda boda business transporting people and goods on the bicycle from the village to the main tarmac road which is about 4 kms away. He wakes up very early to carry people going to work at Katito, Sondu and Ahero markets. He also carries teachers to the nearby primary school. My other younger son aged 12 joins other young men to harvest sand each day. I do my work at night because I am a fisherman. I fish at night on River Awach because fish comes out to eat at night. Sometimes I go to Lake Victoria when the fish population drops on River Awach. My eldest son aged 20 lives in Kisumu town working as a Manamba [tout]. He comes home every month because his wife is here. His wife makes ropes, mats and baskets, which she sells at Katito and Sondu markets.

The strength of a livelihood activity rests largely on its ability to provide food and cash. Crop farming, according to the participants, has failed to provide for the homestead members. The above statement suggests that this particular homestead does not consider crop farming as a strategy even though they have land. Unfortunately, erosion rills and gullies dissect the land. Of the 138 homesteads, only 62 percent consider crop-farming a livelihood strategy. A woman participant stated:

I stopped considering land as wealth property a long time ago. My husband owns about five acres of land, which is a lot considering what other people own. These five acres cannot produce enough food for my family and some for sale. I am only able to get three bags (each weighing 90 kg) of shelled maize. If I work on Kipsigis land, I make close to 15 kg a week. When my husband and children accompany me, we make about 50 kg of maize a week. We are making more maize from the Kipsigis land than our own land.

The participant drew a timeline showing the importance of farming in relation to other activities. They used a scale of 10 and 1 for strategies most frequently and least frequently pursued, respectively. Starting in 1960 and continuing in five-year intervals, the participants outlined the intervals during which each livelihood strategy emerged. The participants also projected the future trends of each strategy to the year 2010 (Figure 31).
The graph above suggests that the frequency of crop-farming and livestock-keeping as livelihood strategies has been declining since 1980. Sale of crop and livestock from homesteads was pursued from 1960 till 1995. Since then, sale of crop and livestock is no longer pursued. Unskilled rural wage labor that includes activities such as daily trekking to the Kipsigis and Kisii farms began in 1985 and has been increasing in frequency. The participants projected that unskilled rural wage labor will be the dominant livelihood strategy by the year 2010. Accompanying these trends are artisanship and vendor trading.

The effect of erosion on land and subsequent social impacts are further pushing Kanyibana people to shift from agrarian to non-agrarian activities. A young woman said:

When you have food, you have friends. When there is no food, even rats run away from the house.

The most important non-agrarian livelihood strategy is rural unskilled wage labor. On Table 7 rural unskilled wage labor is shown to encompass all the activities that Kanyibana people are pursuing away from their homesteads and village. These activities involve daily trekking of people either upstream to Kipsigis and Kisii land, or to nearby market centers.
and towns. The daily trekking is a form of short-distance migration even though homestead members still live in their homes. People leave each morning and return late in the evening. On Kipsigis and Kisii land, the major activity is land cultivation, weeding and harvesting, tea, coffee and pineapple picking, cattle herding and housework. Some of the men are involved in house-building or repairs, road maintenance, borehole construction or furniture repairs.

The other important strategy in which many homesteads are engaged is artisanship. About 106 homesteads (77%) include artisans. Artisanship involves pottery, basket and mat-weaving, rope-making and furniture-making. Among the women, basket, mat and rope-making provide enough money to buy food. The women make the crafts from sisal plants that grow naturally all over the landscape. Sisal plants were introduced by the British administration to strengthen the soil conservation structures. The plants now thrive everywhere on the landscape. One female key informant said:

I collect the sisal leaves from any farm and squeeze the water out of them. I dry the fibers for two days and they become very strong. I make baskets and ropes that I sell at Sondu market every Friday. I sell the baskets and ropes for 200 shillings (about USD 3). This is enough to buy 10 gorgoros [20 kg] of maize, soap, sugar, cooking oil and some vegetables. This will be enough for a week. I also grow some vegetables that I sell. However, I sell the vegetables to my neighbors only.

Over the years, different types of small business have mushroomed in Kanyibana village. Ninety-four percent of the homesteads are involved in a variety of businesses ranging from carpentry, bicycle transportation, fish-net repairs, traditional herbalist, grain-milling, tailoring, money-lending, sand-harvesting, charcoal-making and professional funeral singing to ox plowing. Bicycle transportation and sand-harvesting are the most important strategies within this category. Sand is harvested for construction of houses. Mostly, young men between 12 and 36 years pursue these two strategies. Some women harvest sand, but it is not common.
Figure 32. Rope-making is a livelihood strategy for women. The left photo shows the fiber extraction process. The woman's son constructed the platform that is composed of a wooden log placed across two standing trees. A sharp blade is nailed onto the log to squeeze water out of the fiber. The photo on the right shows finished ropes that she will sell at the market.

Bicycle transportation, known as boda boda, is a lucrative business for men. Boda boda, a Kiswahili word meaning "from border to border," was invented in Busia town, located about 140 kilometers away on the Kenya-Uganda border. Young men use bicycles to transport passengers and their luggage from the Kenya border to the Uganda border and vice versa. Boda boda business started in Kanyibana village in 2001. Since then, 10 young men have become involved in this business. The young men said that the boda boda business is extremely hard because the road is in poor condition. A boda boda operator said:

I wake up very early in the morning to ride Mr. Onyango to Ober Primary School. In the evening, I also go to pick him up. I have a contract with him and he pays me at the end of the month. I am assured of getting 400 shillings [about USD 6] at the end of the month. After dropping the teacher at school, I ride back home and carry people who are going to the market to sell baskets, ropes and mats. I also carry the sand harvesters and fishermen to
River Nyando. The cost of each ride depends on the distance. From our village to the Kisumu-Kisii road, I charge 10 shillings. Sometimes when the road is muddy and impassable except on foot, I only carry luggage. I work everyday except Sunday when I rest at home. On average, I am able to make about 100 shillings a day. This is separate from what I get from the teacher. However, this business is tough. Sometimes after a rainstorm, some parts of the road are very sticky. A passenger refuses to get off the bicycle and I have to push. When I insist, they get off the bicycle and walk away without paying for the distance I carried them. I avoid working after it has rained. At times when we work late, thieves wait for us and knock us off the bicycle. They take our day’s earning. We have reported to the assistant chief, but he is not arresting the thieves.

Sand-harvesting has emerged as another lucrative strategy among young men of Kanyibana. Sand-harvesting is done on the Awach and Nyando Rivers, the major rivers draining into Lake Victoria. Sand-harvesting is pursued throughout the year except during flooding and in the dry season. The best time to collect sand is after a rainstorm or floods. Many young men are happy with the erosion because they can harvest sand. The sand harvested is sold to merchants from various towns and cities. A key informant told me that he harvests sand with his two young sons. A section of the Awach River touches his land and he dug a hole on the banks to slow down water movement. He said:
I dug a channel from the river into my land. On the land, I dug a big hole so that sand being transported settles in the hole. This way, it is easier for me and my children to collect sand. I cannot allow my sons to step into River Awach because the water currents might be too strong for them. They are young [he refused to tell me their ages because he thought I might report him to the Chief]. I once saw a young boy swept away by water when he was harvesting. With my sons, we harvest about six wheelbarrows of sand everyday. We rest on Sundays only. As they get older, I will dig another hole and divert water from the river.

![Figure 34. Training young men to harvest sand. The above harvested heap of sand is ready for transportation to urban centers. Boys as young as 12 years are pursuing this livelihood strategy. The young men are trained by older men who have been harvesting sand for the last five years.](image)

**Cattle Create a Sense of False Security**

Cattle-keeping among the Luo is an age-old occupation (Ogot, 1974). The Luo people rear herds of cattle and goats for several functions including food, marriages and funerals. On average, each homestead has about five cattle. Goats are also reared but they are not held in such high esteem as cattle. According to the participants, a stranger might be fooled into thinking that the people are wealthy because of the number of livestock they hold. The *Wuon dala* has control over the cattle and goats. Cattle and goats are sold
when there is desperate need to purchase maize and vegetables. During floods, the cattle are sold cheaply at markets because the people do not have sheds to house the animals. Women in particular feel that the presence of cattle in the homestead should not be considered as wealth. This is because the *Wuon dala* decides what to do with the cattle. He sometimes sells the cattle when they do not need the money. Other times, when there is need for money, he refuses to sell. One female participant said:

The cattle that you see grazing around here belong to *Wuon dala*. Cattle should act as a bank, in which all members of the homesteads should invest. But we cannot do that. My sister gave me a goat to keep and sell when an emergency arises. She is married to a Kipsigis man. The goat bred three kids and when I wanted to sell one kid to pay for my daughters' school fee, my husband said no. When he was away I drove the goats back to my sister who sold them for me.

**Crop Farming**

The major crops are maize and common beans, sorghum, cassava and three indigenous vegetables: *Crotalaria ochroleuca* (locally known as *mitoo*), *Corchorus olitorius* (locally known as *apoth*) and cowpea — *Vigna unguicalata* (locally known as *dek*). The participants noted that interest in crop production has been declining over the years. Crop farming is a subsistence occupation in which farmers use their own labor to produce food. Seeds for planting are saved from previous crops. Immediately after harvesting, the women keep some seed to plant during the next rainy season. This seed is not carefully selected nor preserved. The traditional system for seed selection used to involve selecting the healthiest-looking grain (if it is maize, millet or sorghum) and mixing it with seed from one's neighbor. Preservation methods included mixing the selected seed with ash. However, these practices are no longer in use. A woman participant said:

How do you expect us to select seed from our harvest when the grain looks so poor and diseased? When I harvest my sorghum, I eat everything. I do not keep some for the next rains. I usually buy the seed from the market at planting time. The seed I buy is what is sold for food. I have noticed that every year my sorghum is producing less and less grains. Partly, it is because of the quality of seed that I pay for and partly is because the soil lacks food.
Many young men do not consider crop-farming as a livelihood strategy. A young male key informant stated:

We young men do not care about the land. We have all run away to cities. The piece of land I was given by my father was so poor that grass could not grow. I only built my homestead, planted a few trees around the home and left for the city. My wife does not grow any crops because I am not at home to perform our rituals. I provide enough for her and the children from my salary. I bought a cousin a bicycle for boda boda business and we share the money that he makes. My five cousins do not farm at all. They are all involved in sand harvesting, boda boda transportation, fishing, working for Kipsigis or rope-making.

For the farmers who still grow crops, labor is provided by the women. The women participants were quick to remind me that cultural rituals performed before any crop is planted, weeded and harvested interfere with timeliness of planting crops. A female participant said:

If there are many married sons still living in their father’s homestead, performing all the rituals interferes with rainfall timing. Usually the Wuon dala sleeps with his wife, and then the first son, second, third and so forth. This is done in sequence and the chain cannot be broken. If the second son is away and his wife is at home, the third son cannot plant any crop seed until the second son returns. Sometimes, brothers can have an agreement to perform the rituals for each other. For example, if the eldest son is away and it is time for harvesting, his younger brother can sleep with his wife. This was okay in older days before AIDS came. Now it is very dangerous to sleep even with your brother-in-law.
CHAPTER V
DISCUSSION

Introduction

In this chapter, I will show the relationship that exists between natural capital and cultural capital and explain how this relationship is affecting the choice of livelihoods in Kanyibana village. The findings from the focus group participants and key informants suggest that the livelihood strategies of the people of Kanyibana are multiple and increasingly non-agrarian based. In fact, some of the homesteads have totally abandoned farming, and instead, are pursuing multiple non-agrarian activities that range from extraction of natural resources such as sand-harvesting and fishing, to seeking employment on neighboring farms. Through an analysis of the findings, common themes emerge. These themes, noted primarily at the homestead level, appear to revolve around the tension that exists between capitals, especially the natural and cultural capitals. These themes are:

1. The relationship between land and cultural rituals and customs is limiting access to and use of capitals as well as individual capabilities for pursuing livelihood strategies.
2. The cultural restrictions are pressuring individuals to sacrifice land in order to pursue non-farming livelihood strategies.
3. The involvement in multiple non-farming activities is making homesteads more vulnerable to both internal and external shocks and stresses.
4. Poor homesteads, in particular, are characterized by engagement in multiple non-farming activities and vulnerability to both natural shocks and the restrictions of cultural customs.
5. The tension between natural and cultural capitals is negatively influencing social, informational, financial and human capitals.
6. Failure to counter the tension between land and cultural customs may be leading to increased poverty, thus limiting the abilities of Kanyibana people to build up and draw upon their social, physical, informational, financial and human capitals.

Capital, Livelihood Strategies, Vulnerability and Poverty Linkages

Throughout my study period, I was humbled by the stories that the focus group participants and key informants shared with me. Indeed, I felt more humbled when I sat down every evening or at the end of the week and typed all the stories and downloaded the
digital photographs. As I untangled the web of information, I was reminded of an old Chinese curse that says, “May you live through interesting times.” To me, the most important word in this curse is live. The people of Kanyibana village – Nyibana – are living in challenging times. The older generation is learning to live in a landscape that is hostile, totally different from the one they grew up in as children. The younger generation is struggling, in the midst of floods, diseases and hostile land, to keep their clan alive. The demographics are rapidly changing, as younger generations disappear into cities or die from diseases. No outsider can live in the environment in which the Kanyibana people are currently living. This is because the people of Kanyibana are living in interesting times, if interesting times are meant to be a curse.

The relationship between natural and cultural capitals affects the choice of a livelihood strategy in very different ways for different individuals in Kanyibana village. The type of relationship varies depending on the homestead’s demographic composition and the circumstances such as the presence or absence of Wuon dala and/or married sons and widows. Homesteads, which are affected by the natural and cultural capital relationship, are best understood using a framework derived from the findings (Figure 35).

Central to the framework is the tension that exists between natural and cultural capital. The tension is highly influenced by the quality and accessibility of natural capital, and the persistence of customs and individual capabilities. More often than not, the quality of land influences the kind of farming activity that a homestead can pursue. In Kanyibana, the quality of land continues to decline. Due to the degraded land, the people of Kanyibana cultivate fast-growing crops as such maize, sorghum, common beans and local vegetables, all of which can withstand high temperatures. Farming as a livelihood strategy is practiced within homesteads where cultural rituals and customs are followed. In situations where cultural rituals cannot be practiced, as during the absence of men, or women refusing to be inherited, livelihood strategies have been adapted primarily to non-farming activities.

Kanyibana village has experienced an increase in participation in non-farming activities. Involvement in multiple non-farming activities is creating environments in which homesteads are more vulnerable to both old and new internal and external shocks. Unfortunately, such homesteads lack ability to recover from the shocks, thus plunging them into deeper pockets of poverty. There is a lack of cultural buffering and the village is disintegrating with each additional perturbation.
Influencing factors
- Land quality
- Land accessibility
- Homestead power
- Persistence of customs
- Individual capabilities

Diversification into non-farming activities and migration

Vulnerability
- Out-migration
- Floods
- Disease outbreaks
- Wage labor
- Uncertainty of child safety
- Restricting rituals and customs
- Infrastructure limitations
- Health facilities limitations

Figure 35. Relationship among capitals, livelihoods, vulnerability and poverty in Kanyibana village.
Cultural – Natural Capital Tensions

This study focused on understanding the relationship that exists between natural and cultural capital, and how this relationship is affecting the choice of livelihood strategies in Kanyibana village. Cultural capital is described as a set of attitudes, practices and beliefs that humans use to organize their behavior to enable them to function effectively within their environment (Throsby, 1995; Milton, 1996). These are learned qualities that are passed down from generation to generation. However, these qualities adapt over time depending on the prevailing environmental and social circumstances.

The findings lead to the conclusion that at present, interactions between cultural and natural capitals are destructive. This is seen particularly in seasonal land allocation by the head of homestead and rituals that must be performed before any activity can be carried out. Seasonal land allocation to each homestead member discourages investment in land management. In particular, it reduces people’s abilities to gain access to and control of land, thus greatly affecting their entitlements and capabilities to manage land. The power held by the head of the homestead is limiting homestead members abilities to press their land claims.

The requirement that sexual rituals be performed before any farming activities may be undertaken also leads to destruction of the land. The increased male migration to urban and other rural areas means that the men are never at home, or they return when the critical time for a farming activity, such as sowing, has elapsed. The women left at home cannot engage in farming activities, and because they lack rights to land, they are also unable to manage land. This leaves land subject to the destructive forces of degradation. In addition, hierarchical sexual activities translate into increased vulnerability while men are away pursuing non-farming activities. Insights from key informants illustrated the hierarchy that exists in one’s involvement in farming activities. The father’s wife/wives have to cultivate, sow, weed and harvest crops before the sons and their families can do so. After the wife/wives, it falls to the first born son, then the second born, and so forth. In situations where a son’s wife is lazy, then she holds up the rest of the family in preparing land, sowing, weeding and harvesting. Therefore, cultural rituals and practices accentuate a homestead’s vulnerability. A key informant said:

The sequencing of father and sons in farming activities really makes us susceptible to low crop yields or no crops at all. If my older brother and his wife are lazy, they will always be late in planting their crops. Therefore, to support my family, I cannot rely on farming.
The culturally defined sexual rituals and hierarchical nature of land allocation and use influence a homestead’s choice of a livelihood strategy. Widows who refuse to be inherited have to look toward non-farming livelihood strategies to support their families. Women left in the village when their husbands migrate must rely on remittances. In most instances, the remittances are inadequate to support the families, and women are forced to diversify into non-farming activities.

**Centrality of Wuon dala and its Effect on Livelihood Strategy**

Among the Luo people, the traditional subsistence activities are intimately linked to cultural rituals and customs. Being a strongly patriarchal and patrilocal society, homestead is governed by one central male adult who ensures that there is adherence to cultural rituals and customs. This dominance is rarely challenged from within the homestead. Wuon dala represents the homesteads within and outside the homestead. He is also responsible for resource use and allocation. Relationships within the homestead do not depart from norms. In these kinds of relationships and dominance, both women and men are entirely without power. They are both confined within the dominance of Wuon dala.

Despite the power held by Wuon dala, women and men living within the confines of Wuon dala are devising ways of escaping the cultural limits. Women, particularly widows, are committing their labor in other areas outside the village to generate food and income. They actually prefer working for other ethnic groups where their cultural practices are not known. A widow who has refused to be inherited said:

I work only for Kipsigis and Kisii people. Every Luo home within 10 kilometers range knows that my husband died and I have refused to be inherited. No Luo homestead can give me work. In fact, some men instruct their women to keep away from me. Unfortunately what these men do not know is that some of these women are my friends. We meet up there among the Kipsigis, where we are not bound by any traditions. As a woman without a husband, I decide what to do and where to go. No one tells me how to feed my family. The only drawback is that I cannot farm nor attend any social function. I meet my friends outside the village. I will encourage my daughter to marry a non-Luo man so that she does not go through what I am experiencing right now.

In this sense, do women who have refused to be inherited have more personal power? Indeed, it could be a great mistake to generalize that women are powerless in
Kanyibana village. By refusing to be inherited, widows are left alone to fend for themselves. Even though their productive contribution does not translate into positive status and recognition, they nevertheless gain personal power through their cultural isolation.

On the other hand, sons still living within their father’s homestead do not wield personal power in the same way as widows. A widow who refuses to be inherited is left to do whatever she wants. The only drawback a widow faces is that she cannot engage in activities where cultural rituals must be performed. Sons have not been able to escape the cultural rituals. Any resource, such as livestock, that a married or unmarried son acquires belongs to the *Wuon dala*. This discourages many sons from accumulating resources until they establish their own homesteads. Therefore, while cultural capital impacts the type of livelihood activities that women and married sons living in their fathers’ homesteads can perform; mobility may enable them to overcome it.

**Shifting Livelihoods Strategies**

Before 1979, the quality of land to a large extent defined the livelihood strategies that the people of Kanyibana would pursue. Land in this context refers to soil, water and plants as defined by the focus group participants. Ogot (1974) reminds us that the Luo people were, first and foremost, fishing people and they began engaging in cultivation after contacts with the Bantu people. The Bantu people are composed of ethnic groups that are primarily cultivators. Through interactions with the Bantu, the Luo people incorporated crop production into their subsistence economy. Alongside crop production, they continued fishing and herding cattle. Therefore, it would seem appropriate to suggest that the livelihood strategies for most homesteads were heavily reliant upon natural resources, specifically soil, water and plants. The Luo of Kanyibana village practiced similar livelihood strategies – namely, farming and fishing. Unfortunately, the physical environment is extremely fragile and being located in the plains makes the village susceptible to flooding as well. The combined factors of the village’s location at the bottom of a steep escarpment and its black cotton soils create water-logging during the wet season and severe cracking during the dry season. As the Kanyibana people pursued their livelihood strategies and practice various cultural rituals, they failed to take into account the fragility of their land.

Studies show that many rural families are land dependent, utilizing the land for a variety of activities. The most common activity is agriculture. When this land is exposed to agents of degradation, rural families have to diversify into non-farming activities to support
themselves. Furthermore, degraded land is incapable of meeting immediate food needs, but offering future food security.

According to Ellis (1998), when people diversify their livelihood strategies, they are attempting to spread their risks. This statement is partly true for the people of Kanyibana. In addition to spreading risks, the people of Kanyibana are diversifying their livelihoods to escape the restrictions of cultural practices. The factor most powerful in creating the diversification synergy is the stagnation of cultural capital. According to Steward (1955), environment is an important factor underlying culture change. Steward argues that cultural practices closely related to subsistence activities and economic arrangements are subject to change depending on the prevailing environmental conditions. However, this study suggests that cultural practices related to livelihood activities are not changing as rapidly as the environment is changing. I am tempted to suggest that culture has stagnated and HIV/AIDS has caused it to go into a death spiral. However, culture is dynamic, constantly changing. It is the speed at which the changes occur that differs from one society to another. In this instance, the cultural practices of the Kanyibana people are not keeping pace with changes in their environment. This is forcing them to diversify into non-environmentally dependent activities, such as migration to urban and other rural areas.

Studies of livelihood strategies highlight the contribution of diversification to reducing vulnerability. Indeed, Scoones and Thompson (1994) refer to livelihood diversification as the “third agriculture” that is currently estimated to be supporting approximately two million people worldwide. Diversification is seen as an adaptive strategy, which involves long-term change and a shift in livelihood patterns. Livelihood diversification is defined as:

*The process by which rural families construct a diverse portfolio of activities and social support system capabilities in their struggles for survival and in order to improve their standard of living* (Ellis, 2000:11)

Migration is one of the key livelihood diversification strategies. Studies have shown that there are increased cases of male migration in Africa (Slater, 2002; Francis, 2000; Breusers, 2001). This migration pattern is usually in the rural to urban direction. As farming continues to provide less food and income, migrating to urban centers offers an opportunity to diversify into non-farming activities (Reardon, 1997; Ellis, 1998). The contribution of non-farming activities, of which migration is one, ranges between 60 and 80 percent (Bryceson, 2000). In Kanyibana village, two types of migration patterns are emerging. The first is the
common rural to urban and the second is the rural to rural migration pattern. Within the rural to rural migration, two types of migration exist: permanent and daily trekking. Both rural-urban and rural-rural migration patterns face similar opportunities and challenges. On one hand, migration enhances access to permanent jobs and manual work, formation of new friends, and other social networks. On the other hand, migration increases the vulnerability of those left behind as well as those who have migrated.

The common migration pattern, rural to urban migration, is heavily documented in Africa where farming activities can no longer support families. Studies suggest that as a livelihood strategy, rural to urban migration is pursued mainly by men (Ellis, 2000; Francis, 2000; David, 1995). According to Ellis (2000) and David (1995), male migration to urban centers has no effect on patriarchal decision-making and does not lead to creation of female-headed households because men still maintain autonomy. The authors suggest that rural to urban migration contributes to viability and sustainability of rural livelihoods. The authors argue that sustainability of rural livelihoods is achieved through cash remittances from the urban centers.

In Kanyibana village, the pattern of rural-urban migration is rapidly changing. The village has witnessed demographic and gender changes in those involved in rural to urban migration. Before the 1990s, men, especially married men, were the predominant group migrating into urban centers. Early in the 1990s, unmarried men aged 18 to 25 years started migrating. Toward the late 1990s, boys as young as 11 years started migrating. At the beginning of the 21st century, women and young girls have started migrating to urban centers. Migration into urban areas, particularly for younger people, can result in precarious and unskilled employment. A key informant said:

A child as young as 12 years running to a town is very dangerous. Children, especially, do not know how to protect themselves. They go to towns and become house maids with very small pay. They can get pregnant and bring the child home to their parents. With AIDS spreading so fast in towns, these children are getting infected. And some do not know what is killing them. They return home when they can hardly walk.

The above statement reflects the dilemma young people or even old people face when they migrate into urban centers. Many scholars have documented the impact of migration to include: loss of human capital, disruption of the family and the social setting, increase in sexually transmitted diseases such as HIV/AIDS, uncertainty of employment,
and slum housing development. Kanyibana village has witnessed increased human deaths, particularly among urban migrants.

A different type of migration is occurring alongside the rural-urban migration. This is the rural to rural migration. According to focus group participants, rural to urban migration does not guarantee remittances. In the years before 1990, men who migrated to urban centers were assured of getting a job or manual work. The living expenses in the urban centers were not so high, so the men could afford to send some money home. By the early 1990s, remittances from urban centers dwindled. This discouraged some of the Kanyibana people from migrating to towns. Instead, people looked toward rural areas where they could perform farm work. A number of Kanyibana people, both men and women, are employed permanently on nearby Kipsigis and Kisii farms. The men work in planting, weeding and harvesting. Men also take care of the cattle that are tethered around the compound. They cut and carry fodder and water for the cattle. The women work on the farms performing homestead chores such as cooking, washing clothes, and taking care of young children. Houses are constructed for the Kanyibana men to live in, while the women live with the employer. They eat the same meals as the employer. They do not incur any expenses, and the money earned is sent to Kanyibana relatives.

The second type of rural-rural migration is the daily trekking of people who search for seasonal work. This involves both men and women who do not want to live among the Kipsigis or Kisii people. The daily trekking does not guarantee work. They rely heavily on friends to provide them with information about potential work. They also rely on good employee-employer relationships to guarantee them continuous work.

The expansion of migration into two forms -- rural to urban and rural to rural -- has become the main livelihood strategy for the people of Kanyibana. The people of Kanyibana have built particular connections upstream with the Kipsigis and Kisii ethnic groups. The involvement of different genders and ages in migration highlights the critical situation in which the people find themselves. Even though migration as a livelihood strategy is considered to be a way to improve wealth status of households, this is not the case in Kanyibana village. In addition, migration is changing the village demography. During the day, the only people around the homesteads are the elderly, the sick and the very young, usually under 10 years. Alongside migration, other non-farming livelihood strategies such as artisanship, trading, fishing, remittances and donations are being pursued. Donations are from relatives living far away from the village. Even though I could not put a monetary
value on these strategies, their contributions to the survival of homesteads are immense. A female focus group participant said:

Without pottery, basket and mat-weaving, and rope-making, women, particularly those who have refused to be inherited in this village, cannot survive. These women buy the raw materials, make the crafts and sell in Sondu and Ahero markets. No man is going to interfere with their activities because they have control. Many of these women are able to buy food for their families. The women also receive support from their parents who send food and money to them.

Reflecting back on Ellis' (1998) definition of livelihood diversification, it is an adaptive way of improving the living standards of rural people. However, in Kanyibana village diversification into non-farming activities is not contributing to improvements in the living standards. People of Kanyibana village diversify as a way to escape cultural restriction. With that, I am tempted to redefine livelihood diversification to reflect the context within the study village as:

In order to survive, livelihood diversification is the process by which rural homesteads construct a diverse portfolio of non-farming activities in an attempt to escape their cultural restrictions.

The above definition does not reflect their attempts to improve their standards of living. This is because engagement in diverse non-farming activities translates into increased vulnerability and poverty. The definition by Ellis (1998) indicates that rural people diversify their livelihood portfolio to include both farming and non-farming activities. Through this diversification process, rural people are able to increase their household income. This additional income is invested into other activities to ensure that the impacts of shocks and stresses are minimized. In addition, households are better able to bounce back after such disturbances. In Kanyibana village, the rural people are diversifying and the diversification process is not enabling them to increase their homestead income. This is probably due to the nature of non-farming activities in which they are involved. They do not generate a lot of cash income. For instance, a basket at a local market sells for Kenya shillings 20 (about USD 0.26). Women are only able to weave two baskets a week. Two kilograms of maize cost 15 Kenya shillings (about USD 0.20) and this feeds a family of six for two suppers only. In short, the amount of income generated from non-farming activities is directly used to compensate what might have been harvested from the fields. Local people faced with this
kind of hand-to-mouth situation do not have opportunities to improve their standards of living.

**Vulnerability and Deepening Poverty Trends**

The field of poverty studies incorporates both qualitative and quantitative methods (Adato and Meinzen-Dick, 2003; Carvalho and White, 1996; Kanbur, 2003). According to Kanbur (2003), the use of combined methods improves our understanding of how to identify the poor, the nature of poverty, and its causes and consequences. For this study, I used qualitative methods to measure and understand what poverty means, why it arises, and the trends over time. The composition of the focus group—that is, gender, age and leadership status—implied that the information I gathered on poverty represented different categories of people in the village. Indeed, poverty is perceived and experienced differently by different individuals living in close spatial proximity to each other.

The focus group participants defined and identified the primary drivers of poverty. The meaning of poverty among the study population suggests that poverty has become embedded in their natural, social and cultural environment. Poverty is reflected in the physical appearance and quality of the land, inability to make friends, difficulty in keeping children at home, and levels of food consumption. The primary drivers of poverty include engagement in multiple livelihood activities, widowhood, floods, human and livestock diseases, declining land productivity, funeral expenses and child migration (see Table 6). The most shocking driver of poverty was engagement in multiple livelihood activities. Studies of livelihood strategies suggest that households engage in multiple activities as a way to increase food and income, and hence reduce poverty, risks and vulnerabilities (Francis, 2000; Ellis, 1998, 2000; Netting, 1993). However, this study suggests that engagement in multiple livelihood activities breaks up a homestead. As every member of the homestead disperses in different directions, social order deteriorates within the homestead. Homestead members do not have time to sit and talk. In many cases, they do not have time to eat together. There are indications of homestead disintegration. The sense of social and cultural inclusiveness that existed 25 years ago within and between homesteads has been lost. A man aged 46 years said:

I leave very early in the morning for Katitto town. I do not know what my children are doing. I don't think that they are attending school. I get home at about 9:30 pm and only my wife gets up to serve me food. My wife sometimes tells me what the children have been doing. I hear
from people that my son is a thief, stealing cattle from the Kipsigis and selling them in Sondum Market. It is very sad that I do not know my own children and yet we sleep under one roof.

The poverty-prosperity pathways findings also suggest that poverty trends have not been static in the last 25 years. A large number of homesteads exist below the poverty line. Simply put, many homesteads within Kanyibana village have fallen into poverty. Sons who have established their homesteads within the last 25 years are classified as poor. However, the focus group could not ascertain the magnitude of poverty for each homestead. Kanbur (2003) and Carvalho and White (1996) suggest that quantitative methods can be used to ascertain the magnitude of poverty. However, many of the factors of poverty that the focus group participants listed cannot be measured through quantitative analyses. Testing some of the factors would require use of complex variables and statistical packages. For instance, how would we put a value on a factor such as widows refusing to be inherited? Thus, the qualitative methods I used were reasonably effective in understanding the complex poverty relationships and interactions.

One critical insight I gathered during the poverty analysis exercise was that causes and effects of poverty were often identified with the same indicators. This suggests that there is not a linear relationship between poverty cause and effect. A poverty causal factor leads to an effect, or sometimes several. Each effect becomes a causal factor for another effect. This lack of linear relationship made it extremely hard to attribute poverty to one particular cause or effect (Figure 36).

The findings suggest that the relationship between natural and cultural capitals is leading to changes in other capitals which eventually lead to increased poverty levels. In Kanyibana, poverty is largely due to deterioration of the assets upon which the people depend. This includes natural, social, informational and financial capitals. In Kanyibana, cultural capital appears to be persistent and highly influential in effecting the outcomes of livelihood strategies.

Using a 25-year period to analyze poverty trends offered me an opportunity to test the dynamic relationships. Unfortunately, I was not able to ascertain through focus groups the speed with which homesteads can fall into poverty and the length of period required for recovery. However, more factors were identified that make a homesteads fall into poverty than escape from it—that is, eleven indicators compared to four. Furthermore, most of the factors leading into poverty are internally driven within a homestead rather than external. It
is thus expected that, to escape poverty, a homestead must look within itself for ways to overcome poverty. Unfortunately, that is not the case. According to the participants, to escape poverty, homesteads must seek external assistance such as remittances from relatives and assistance from wives’ relatives.

![Complex poverty relationships showing influencing factors.](image)

The only internal poverty escape factor in Kanyibana village is educating children who are expected to help the parents. This is a long-term investment with no future guarantee. Studies conducted in Kenya suggest that employment rates in the formal sector have been steadily declining since the 1990s (Mwabu et al., 2003; Manda et al., 2000). These authors attribute the reduction in employment rates to the poor performance of the Kenyan economy as a result of poor governance and mismanagement of public funds. An 18-year-old boy reinforced the above fact by stating that:
Why should I attend school? Our neighbor at home educated his son to polytechnic college. The son holds a diploma and he is harvesting sand with me. After graduation the son went to Kisumu town, later I heard he was in Nairobi, Eldoret and Mombasa. Eventually he returned home because he was suffering. He could not get a job. Or the job he got paid so little that he could not afford to pay rent. He came home and he is harvesting sand with me. Even though I see he is unhappy, he is making money.

The highly diverse livelihood strategies pursued by the Kanyibana people, particularly among the group of homesteads considered poor, raises critical questions about the homesteads' capacity to withstand risks and vulnerabilities. The findings further suggest that shifting to non-farming activities exposes homestead members to new risks and vulnerabilities. For instance, children running away from home to become involved in manual jobs expose themselves to such risks as rape, child molestation and contraction of diseases. Other children drown as they harvest sand from the rivers. Despite the risks involved in some of the activities, the people of Kanyibana do not eschew them. This type of behavior encapsulates the people of Kanyibana in poverty traps. Poverty traps are defined as situations in which dynamic multiple factors co-exist and persist for a long time (Barrett and Swallow, 2003 and 2006). People caught in poverty traps find it extremely difficult to escape them because they do not have the capital base to invest in changing their situations. According to Perrings (1989), people caught in poverty traps have strong incentives to deplete their capitals in order to survive. In the study village, there are indications of low social, financial and human capital. Even though poor homesteads take advantage of the circle of friends, sharing information on availability of wage labor, these relationships are not strongly held. People do not have time to invest in social groups or networks. In addition, the social system capabilities have collapsed as widows are ostracized. Studies show that availability of social networks is an important avenue for poor people to gain empowerment and take responsibility for building their capitals (Williams, 1999; Chambers, 1983).

The struggle for survival ensures that Kanyibana people are unable to form and participate in social networks, making it impossible to build physical capital such as roads or schools. The money earned from wage labor is immediately used to purchase food and none is left for savings and future investment. Indeed, the tension that exists between natural and cultural capital strongly suggests that other capitals are being negatively affected.
CHAPTER VI
CONCLUSION

Putting the Pieces Together

The research questions that this study sets out to answer suggest that the livelihoods of Kanyibana people are undergoing a transformation – from agrarian based to non-agrarian strategies. The research questions were:

1. What is the impact of cultural practices on natural resource management?
2. What livelihood strategies are people pursuing as they deal with natural resource degradation?
3. Is the Sustainable Livelihood Framework useful for examining the tension between natural and cultural capital?

As evidence from this study suggests, the quality of land of the Kanyibana people is steadily declining. This decline appears to be highly influenced by enduring cultural rituals and customs that are not keeping pace with the changing environment. Steward (1955) argued that over time, people’s cultures adapt to changing environments. However, Steward did not specify the time required for cultures to change. Indeed, in Kanyibana village, the environment is rapidly changing and it will continue to change unless environmental measures are put in place to improve the situation, or the people are inspired to change their cultural practices.

The degraded land is destroying the productive farming base on which the Kanyibana people rely. The response to degradation has been involvement in multiple non-farming activities within and outside the village. Some of the non-farming activities include sand-harvesting, vendor-trading and bicycle transportation. At the same time, there is increased daily and seasonal migration to nearby rural areas for work in low-skilled manual farming activities such as harvesting tea, weeding, livestock herding and housekeeping. Every adult, including children as young as 12 years old, is involved in one or more activities to generate income.

The effects of the tension between natural and cultural capitals are far-reaching, leading to the disintegration and deterioration of other capitals -- social, physical, financial and human. For instance, the gullies have destroyed the road network and cut off homesteads, forcing people to walk longer distances either to the markets or to neighbors'
homesteads. Human and livestock injuries and loss of life from falling into the gullies, are immense. Involvement in multiple livelihood activities is causing a breakdown in social networks. This leaves the people of Kanyibana village less resilient and more vulnerable to existing and new emerging shocks and risks. A less resilient and more vulnerable people are not able to absorb shocks because they lack safety nets and social support. This makes their livelihood strategies insecure and unreliable for supporting and sustaining a society.

Using the Sustainable Livelihood Framework, I was able to examine the livelihoods of Kanyibana village. In particular, the framework was useful in providing guidance on what to pursue, that is, focusing on the assets and resources that local people have, and how they are responding to the changes in the assets to make a living. The flexibility of the framework enabled me to decide where to start the study — at the assets level — whom to involve at different levels, and what methods to employ. During the study, I was able to go back and forth between two levels—homestead and village—using different methods of data collection.

Drawing upon various cultural ecology theories and the Sustainable Livelihoods Framework, I also observed important relationships between the study village and neighboring communities, as well as other ecological and socio-political factors of regional and national importance. Indeed, during some periods of data collection I was confronted with external issues that clearly affected the village, such as the influence of neighboring Kipsigis and Kisii ethnic groups, and the neglect by the government of Kenya in responding to the land degradation problem. Even though the framework was not intended to solve the problems that the people of Kanyibana village face, it proved useful in analyzing and understanding local complexities such as cultural land allocation practices that lead to land ownership insecurities, eventually causing degradation of land.

The framework has its limitations. It does not provide solutions to problems that local people face. During my field work, the people of Kanyibana expected me to provide solutions to the land degradation problem. As a student, my capacity to provide technical knowledge was limited, and the best I could do was attempt to link them to organizations that might be willing to work in their area. However, most of these organizations have their mandated responsibilities, and are not willing to assist with restoration work in Kanyibana village. The framework also emphasizes the importance of the involvement of local people in the research process. However, some type of informed guidance is necessary because of the complexity of the problems, the need for a community learning and capacity
strengthening process, and the value of scientific knowledge. Thus, total autonomy and ownership of the research process by local people is probably not possible. In addition, by narrowing the study focus as I did — that is to natural and cultural capitals — I might have missed important factors affecting the people of Kanyibana village. Indeed, during some periods of the study I had to draw the focus group participants back into the discussion when they drifted to other challenging aspects of their lives, such as lack of friends and groups with which to interact, their inability to get the attention of their political representatives, the lack of roads and the declining population due to HIV/AIDS.

In conclusion, the people of Kanyibana are looking for ways to escape this stark reality. Migration and other non-farming activities offer some a full exit from farming and the option of providing food security for their families. For others, it is a partial exit as they continue to till the harsh yet fragile soil. The choice to stay and farm in such an environment is beyond my comprehension. Indeed, I ask, when land is so degraded, why bother to farm at all? Why do people still want to live in Kanyibana where poverty echoes throughout the village and has become a way of life? To answer this question, I have to consider the meaning of land, beyond its capacity to produce food. There appear to be other dimensions of land for which economically viable options are traded off against poverty. The people of Kanyibana are apparently opting for poverty rather than opting out of their land. Maybe land is satisfying other needs beyond this study -- such as through its cultural, spiritual and historical meanings. For the people of Kanyibana, there may be strong threads associated with a cultural resource base and close kinship ties with the living and the dead that entice them to stay. Perhaps the uncertainties and insecurities associated with moving to new lands, without the security of the cultural resource base, keeps them in their village.

**Recommendations for Future Research**

The Sustainable Livelihoods Framework enabled me to understand capitals, not only as resources that local people can access to improve their lives, but also in their roles as obstacles that stand in the way of the people's pursuit of sustainable livelihoods. While focusing on two capitals (natural and cultural), the framework enabled me to understand the complexity surrounding people, their livelihood decisions, and their environment. Use of an inductive qualitative approach allowed me the flexibility to ground my theory on what I was learning in the field and revise my research questions based on preliminary findings.

There are a number of research opportunities emerging from this study. These are:
1. **Include all capitals in a wider systems study:** This study focused on the interaction between natural and cultural capitals. Findings suggest that the tension between cultural and natural capitals may be leading to disintegration of other capitals. Using the Sustainable Livelihoods Framework, it would be useful to further explore interactions of other capitals and how their relationships are impacting each other and people’s choices of livelihood strategies. Are some of the capitals considered more important than others to the Kanyibana people, and how do they interpret these priorities? How have livelihood strategies been adapted to take advantage of available important capitals and entitlements?

2. **Comparative cross-cultural study:** One of the most important livelihood strategies for the study village seems to be their employment on neighboring Kipsigis and Kisii farms. It appears that the livelihood strategies of the Kipsigis and Kisii people are agrarian based. This offers an opportunity to compare the livelihood strategies of the Luo and other nearby ethnic groups with whom they interact using the Sustainable Livelihoods Framework.

3. **Levels of analysis.** Analysis at different scales also would provide more insights into the various factors that may need to be “fixed” in order to improve the situation, and some may not be within the local community’s control. Kanyibana village lies at the foot of the steep Nandi ridge and it is part of the Awach watershed. The Awach watershed is composed of seven villages – three occupied by the Luo and four by the Kipsigis ethnic group. The Kipsigis live at the top of the ridge and the various activities in which they are involved greatly affect villages lying downstream on the Awach watershed. Employing a watershed level study to examine interacting factors in all the seven villages might go a long way toward developing a collaborative strategy for restoring the degraded landscape, and perhaps integrating more sustainable economic opportunities. Designing a watershed restoration program requires cooperation and involvement from all the stakeholders who live within the affected watershed as well as knowledgeable resource persons.

4. **Integration of local and scientific knowledge:** The participatory methodologies used for assessing land degradation during this study were based on local people’s perspectives. This involved individuals’ own observations, experiences and judgments of degradation processes. The landscape changes expressed both in the natural resources – soil, plant and water – and social resources, were assessed by
means of visible and comprehensible indicators. Assessment of land degradation using scientific methodology such as laboratory analysis of soil samples may contribute to more accurate knowledge of the extent of the degradation process. This might provide knowledge that could lead to potential solutions.

5. **Combination of qualitative and quantitative research methods.** This study used focus groups, key informants and participant observation to study the village level situation. More in-depth understanding of individual homesteads, perhaps using case studies that identify assets and relationships, would tell us more about ways in which different homesteads have responded to the natural-cultural tensions. In addition, one could apply quantitative methods to offer a better overall view of reality such as the extent of poverty, homestead assets, and population dynamics. Specifically quantitative survey methods can be used to collect extensive data that might be generalized it to a larger population. This can be achieved with scientific sampling and efforts are made to ensure that instrument validity is maintained. However, even good survey methodology will be strengthened by incorporating other methods that build rapport with the interviewees and encourage their active participation in analyzing and resolving the challenges they face.

6. **Incorporating geographical information systems (GIS):** Geographical information systems have been used extensively in natural resource management in assessing spatial and temporal patterns of land use change. In this case, GIS might be used within the River Awach watershed to assess land use change over time. The information gathered can be cross-checked and combined with local people's historical knowledge of land changes. This could provide higher data validity.
APPENDIX A: DFID SUSTAINABLE LIVELIHOOD FRAMEWORK

Key

H = Human capital
S = Social capital
N = Natural capital
P = Physical capital
F = Financial capital

Livelihood outcomes
More income
Increased well-being
Reduced vulnerability
Improved food security
More sustainable use of natural resource base

LIVELIHOOD STRATEGIES
- in order to achieve

TRANSFORMING STRUCTURES & PROCESSES
STRUCTURES
- Levels of government
- Private sector
- Laws
- Policies
- Culture
- Institutions

LIVELIHOOD ASSETS

VULNERABILITY CONTEXT
- Shocks
- Trends
- Seasonality

Influences & access

\( H S N P F \)
APPENDIX B: CAUSES OF LAND DEGRADATION IN KANYIBANA VILLAGE

- Lack of money to buy food
- School fees
- Clearing of hiding places
- Charcoal burning, firewood & timber
- Increased external demand for timber, firewood & charcoal
- Initial land clearing for settlement, farming, housing, firewood, schools, hospitals, grazing
- Continuous upslope tillage
- Poor cultural land subdivision practices (allocated land must be accessible to water source)

Deforestation by Kipsigis

- Destruction of terraces - post 1957
- Flooding
- Erosion
- Loss of soil structure
- Continuous cropping
- Reduced land sizes
- Increased population
- Polygamy
- Women not making decisions

Draining of swamps using eucalyptus trees

- Overgrazing / overstocking
- Dust storms
- Increased need for cattle products, dowry, clothing and wealth,
- Fathers not subdividing land
- Death of first-born sons

Protection of tribe (need for more sons in case of war)
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NOTES

1. The late 1950s into mid-1960s is the period when most of African countries attained independence.

2. According to Olderman (1994), this includes insufficient or excessive use of inorganic and organic fertilizers, improper use of machinery leading to compaction or loosening of soils and absences of anti-erosion measures.

3. *Harambee* literally means “Let us pull together”. *Harambee* philosophy is the brain child of Jomo Kenyatta, Kenya’s first president. He started the *Harambee* self-help spirit, whereby he encouraged Kenyans to pool their resources together for development for the common good. For example, people can donate money and labor to build a school and health center. Over the years, *Harambee* has been abused by administration and politicians who have used it to amass personal wealth.

4. A *gorogoro* is an aluminum tin that holds about 2 kg of maize grain.