TOWARDS LIVELIHOODS SECURITY: LIVELIHOODS OPPORTUNITIES AND CHALLENGES IN EMBUI, KENYA

by

WALTER MBELE MWASAA

Submitted in accordance with the requirements for

the degree of

MASTER OF ARTS

in the subject

DEVELOPMENT STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

PROMOTER: DR. IDDI A. M. MAKOMBE

August 2012

Student number: **35288701**

I declare that **TOWARDS LIVELIHOODS SECURITY: LIVELIHOODS OPPORTUNITIES AND CHALLENGES IN EMBUI, KENYA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

_____ 20th August 2012

SIGNATURE DATE
Mr. Walter Mwasaa

Abstract

Given the livelihoods challenges which face many rural communities, understanding a community's livelihoods dynamics and opportunities is one major step to developing workable options to address the challenges. This study has focused on one rural community and used the five determinants of the Sustainable Livelihoods Approach to describe the livelihoods situation in Embui sub-location in Machakos County, Kenya.

Residents of Embui have had to deal with the fact that traditional production systems are not sufficient to provide for their livelihoods needs. The community and continues to be challenged by limited capital for diversifying income sources, low skills and limited social and economic services.

This study recommends support to marketing of locally produced artifacts, improved access to capital and provision of water for irrigation along with extension services as the key areas of support to improve the living standards of the residents of Embui.

Key words: Household, livelihood, development, poverty

Acknowledgment

I would like to acknowledge the support provided to me by my promoter, Dr. Iddi A. M Makombe for all the insights and knowledge he shared with me in addition to his time and patience to guide me through the research and reporting. Secondly, I appreciate the research assistants who took time off their December holidays to knock doors and fill in the questionnaires, their commitment and dedication to this process is remarkable.

To my mother, Lucia Mwova, who since childhood gave me confidence by believing that I could achieve it all, here is one more for you! To my wife, Joy Mwikali who stood by me and prodded me to go on when circumstances were not supportive at work and at home, your love and support keeps me going.

To my former employer CARE International and all the people I worked with urged me on. I worked through the research paper and class work supported by you all. And to the Almighty God for strength, provision, wisdom, and direction that He gave me throughout the research process and in my studies.

TABLE OF CONTENTS

List of Figures

List of Tables

List of Annexes

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter outlines the background of the study by narrating the history of sustainable development, and narrowing to current issues affecting sustainable development in Kenya and Machakos. It delves into the research problem by defining the poverty levels and development challenges Embui sub location in Machakos County is facing as a basis for the study. It puts forth the research problem and research questions and concludes by discussing the significance of the study and identifying some of the key challenges and limitations in carrying out the study.

1.2 Background to the problem

By the middle of the 20th century, industrial development had accelerated so fast that a concern over the effect of man's activities on the environment began to dominate international discussions. In this regard, Goldsmith and Allen (1972:17) noted that "It should go without saying that the world cannot accommodate this continued increase in ecological demand. Indefinite growth of whatever type cannot be sustained by finite resources. This is the nub of the environmental predicament. It is still less possible to maintain indefinite exponential growth -and unfortunately the growth of ecological demand is proceeding exponentially i.e. it is increasing geometrically, by compound interest". This was in cognizance of the industrial expansion, increasing population and the related demand on finite natural resources.

The publication of the report 'Our Common Future' (Bruntland 1987) took stock of the negative impact development had brought on the environment and went on to define sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." In the last fifty years works like the two aforementioned have led to increased knowledge and consensus over what development pursuits should take into account to provide for the current generations without jeopardizing the chances of survival for future generations.

The onus to pursue sustainable development rests on both the developed and developing worlds alike. Sub-Saharan Africa and other lesser developed regions of the world are at cross-roads; to

move on with relentless pursuit of development irrespective of the impact on the environment, or to pursue a much slower but sustainable development agenda. Resource deficient countries that don't have minerals, oil or abundant natural flora and fauna have resorted to exploiting the little natural endowments that exist in their territories. Kenya finds itself in this group of resource deficient nations with 84% of its total land mass categorized as arid or semi-arid. It is in this setting that well over 30% of Kenyans eke out their living (Kenya 1994:42)

Among the Counties considered semi-arid in Kenya is Machakos County formerly part of the wider Ukambani area that consisted of Machakos, Makueni, and Kitui Counties. There has been noted improvement in agricultural productivity between 1930 and 1970 in Machakos owing to environmental conservation efforts and improvement in production systems of agriculture (English, Mortimore and Tiffen 1994). This positive trend in increased potential for agricultural production has not led to a uniform improvement in anticipated living standards owing to variations in weather patterns and productivity gradients in different areas of the County (Murton 1999).

The inability of the land to yield enough produce for food and for sale led to the farmers' gradual shift from agricultural and livestock income dependence to non-farm income generating activities which included basket weaving, wooden carvings, carpentry, and charcoal burning among other informal trades. By 1982, revenue generated by these activities in the County had risen to 50% of the total household incomes (Mortimore, Gichuki and Tiffen 2004). Embui sub-location (here in after called Embui) of Machakos County is no exception to this trend. The changing weather patterns, limited opportunities and infrastructure are some of the key challenges the community has had to deal with in the recent past leading to their reliance on farm and non-farm incomes.

1.3 Problem Statement

The World Bank defines poverty as the percentage of the population of a country living below $2 a day and extreme poverty as the percentage living below $ 1 a day (Blackmon 2008:182). Rural households reliant on falling crop yields and low casual wages are unable to provide this one dollar per person per day. The reduced productivity, high costs of production (CNN 2009) unpredictable rains, high food prices and the lack of essential services are the key contributors to the chronic poverty witnessed in many such communities (Mortimore et al 2004).

Recent studies have placed Kenya's poverty level at 45.9 % at the national level (World Bank 2012) 85% of whom lived in rural areas (World Bank 2008:16) in comparison over 67 % of the households in Machakos live below the poverty line (Kenya 2011) and are unable to provide the basic needs for their members. It is common to see young children out of school in search for casual labor opportunities to complement the income of their parents (Ilia, 2009). These economic hardships are not only having a negative bearing on the current generation but are expected to continue to propagate poverty in the Sub-Location.

Without profitable farming and other productive options, the local economy is not expected to support the population in the short-term or long-term. Diversification of income sources has been put forward as one way of dealing with challenges to normal production patterns (World Bank 2008:52). Notwithstanding, Hussein and Nelson (2000:18) point out that "Those rural groups who are most vulnerable because of their lack of access to education, their distance from markets, their low wealth status or small household size may have the fewest opportunities to diversify."

Inadequate household income can negatively impact the family's budgetary obligations challenging for instance quality health and education for young children. Van der Gaag (2003) argues that early childhood development which caters for a child's health and education promotes human development by stimulating intelligence in children in the short-term and productivity in adults in the long-term. Based on this argument, children who lack proper nutrition, healthcare and education in their formative years are unlikely to find a niche in the highly competitive job market and business world.

The Government of Kenya through decentralized development programs has initiated strategies to address the livelihoods challenges facing rural communities such as the lowlands of Machakos County. Some of the efforts by the Government have included the soil conservation efforts and support to agriculture dating back to the colonial days (English et al 1994:6-7), through nationwide efforts to devolve development under the District Focus strategy in the 1980s (Ochieng' and Ogot 1995:2009), education bursaries, road network expansion, rural electrification programs and of late through the Constituency Development Fund (CDF) (GoK 2003).

International agencies and development partners have instituted development projects such as water supply (European Union 2009), crop diversification research marketing and support to education from basic to vocational training(Silim et al 2001:34).

With two thirds of Machakos County's population living in poverty it becomes necessary to focus efforts in understanding why the situation remains as it is and what the challenges to the community's attempts to earn a decent living are. Studies by English et al (1994), Silim et al (2001) Murton (1999), and Mortimore et al (2004) in the Ukambani area focused on the topical issues around environmental degradation and improved productivity but no efforts have been put to review the effects of these changes at household level in a micro setting. The absence of in-depth analysis on the livelihoods of smaller communities such as Embui requires attention. There could be missed aspects of a community's livelihoods that may not be captured by a wider County review. This study sought to fill this knowledge gap.

1.4 Objectives of the study

1.4.1 Main objective

The main objective of this study was to explore the current livelihoods in Embui in order to propose interventions that would improve the community's livelihoods.

1.4.2 Specific objectives

The specific objectives of the study were:

- To explore livelihoods of the community in Embui.
- To analyze livelihoods challenges and opportunities existing in the community;
- To put forward options for development that could result in sustainable livelihoods security in the community?

1.5 Research questions

1.5.1 Main research question

The study was designed to provide a context based answer to the question: What are the current livelihoods, opportunities and challenges of the community in Embui?

1.5.2 Specific research questions

To achieve this, the investigation sought to respond to the following specific questions

- What are the present livelihoods of the community in Embui?
- What are the livelihood opportunities and challenges for the community in Embui?
- What recommendations on livelihoods strategies can be made to the community in Embui in order to improve their livelihoods?

1.6 Significance of the Study

Livelihood insecurity is not a new phenomenon, Francis (2000:55) points out that "most rural households do not grow enough food to provision themselves through the year and have not been able to do so for decades". The lack of sufficient food is a chronic problem in many of these communities which is in itself an indicator of livelihood insecurity.

Rural communities are not homogenous and their livelihoods options vary from community to community often determined by the available resources, influencing policies as well as dynamics in weather systems and socio economic factors such as marketing forces, competition and prices. This diversity drives the need for individual look at each community as a separate entity. There is limited literature on livelihood dynamics in communal units in Machakos County and much of the existing studies have either focused on the County as a whole or one aspect a community's socio-economic life such as soil erosion and conservation or crop diversification. This study sought to explore the current livelihoods of a small unit (the administrative sub-location of Embui with a population of no more than 5,500 persons). It looked at all the aspects of community livelihood

guided by the Sustainable Livelihood Approach (SLA) framework. In as much as it generates results specific to the area, there are broader issues that can be generalized to the larger County.
The study contributes to existing research on rural livelihoods. More specific the researcher hopes that the findings will be adopted into existing activities of community based organizations, non-governmental organizations and government plans that seek to achieve sustainable development in the study and similar areas.

1.7 Limitations of the Study

The collection of primary data was faced with some challenges; some of these were access to respodents, unwillingness of the respondents to provide unsieved responses and information. To counter this the study relied on consesnsus building through the Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) to qualify the responses. The level of age disaggregation stipulated in research proposal for this study was not achieved due to rural-urban migration, absence of many households in search of casual employment. The study reduced the age brackets from the planned 5 year age brackets and classified the community to older than 50 year (elderly), 25- 49 years(productive and working age) and 16-24 years(school and college age). In as much as December was the best time to collect information given school holidays and vacation time for employed residents, the rainy season and farm engagements reduced the availablity respondents in some households.

Despite the above limitations the research adjusted its age brackets as described above, and engaged with subjects at their convinience, for example, conducting a focus group discussion at the tail end of a school board meeting to engage with men and finding women during a self help gathering at one of their member’s farms.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter focuses on available literature on the study area. Given its small geographical size and virtual absence of any documented studies done in the specific area on most of the study aspects, there will be inference made of the literature from the larger Machakos County and similar lowlands in Africa.

The chapter is divided into three sections namely (1) theoretical literature in which the key terms used are defined, (2) definition of the analysis framework and reasons for its choice and (3) a review of empirical literature available for the study location and related areas.

2.2Theoretical Literature Review

2.2.1 Definition of concepts

This section will define the following key terms as used in the study; development, household poverty and livelihoods.

Development can be defined as the dynamic process where a community improves in its ability to meet its livelihoods needs and improves living standards. Having enough to eat, access to shelter, education, health care and jobs have been synonymous with development (Chant and McIlwaine 2009:12). Some of the words used in place of or to connote development include; progress, betterment and improvement, all of which are expected over time given some intervention. Chant and McIlwaine (2009:13) summarize different definitions of development as “vision of the state of being of a desirable society as a historical process, and/or comprising deliberate improvement policies on behalf of various agencies and governments.”

Given the different thoughts on what development is; consensus is sought over the ways of measuring it. Not surprisingly there are also different ways of measuring development the most commonly used being the Gross Domestic Product (GDP). It refers to the market value of all final goods and services produced within a country in a given year (Soubbotina 2004: 136). Another

more qualitative indicator is the Physical Quality of Life Index (PQLI) which is the average value of three statistics: basic literacy rate, infant mortality, and life expectancy at age one, all equally weighted on a 0 to 100 scale (Soubbotina 2004:14). The UNDP designed a composite index that is based on real GDP per capita and PQLI that indicates a decent minimum level of income; adult literacy and gross enrollment ratios to indicate attainment of knowledge and life; expectancy at birth to reflect health and longevity. The Millennium Development Goals (MDGs) are also commonly used measures of development. They comprise of a set of 8 goals, 18 targets and 48 indicators and are annexed to this study as annex 1 (Soubbotina 2004:204).Whereas the MDG and PQLI have received fair criticism, they have emphasized people-centered development initiatives. These two have indicators focused on individuals as opposed to macro measures such as GDP which may record positive trends that may not be felt by many citizens of a country. Sen (1999:87) reiterates this point of view in his theory of development which proposes that development should focus on peoples' entitlements and capabilities which refer to opportunities and rights that people exercise in order to access resources in society; which invariably depends on power relations.

This study combined both the qualitative and quantitative aspects of development and considered development as the outcome of activities that are driven by an enabling policy framework and sustainably utilize available resources to achieve positive impact on the living standards of the people they target.

The fact that development makes use of finite resource sets the basis for restricting activities to only those which enable the current generation to utilize the finite resources in a manner that guarantees availability of resources in the future. Limitations in resources have led to the adoption of an approach that safeguards and ensures the availability of these resources for future generations. The finite nature of resources and rising demand for their utilization led to the rise of the concept of sustainable development which was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Bruntland 1987:43).

In the tradition of the Akamba community that form the greatest numbers of residents especially in the rural areas of Machakos County, a household called *musyi* was the group of people who

stayed together in a cluster of huts that farmed together, supported each socially and economically other but did not necessarily eat together; smaller man, woman and young children units ate from their own *iiko* (hearth). In a polygamous family each wife had her own *iiko*. Thus typically a household included a man, his wife (or wives), male adult children, their wives and children and his other children - boys and girls below age of 15 (Ilia 2009). In modern day time the household has largely reduced to a nuclear family however in some instances working parents have left their children with the children's grandparents. Despite the foregoing contemporary issues that affect the modern household in Embui, the traditional practices of cooking, farming and sharing of other chores remains the definitive characteristics of a household.

According to Chambers (1992:9) "a *livelihood* comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base." Thus a *sustainable livelihood* or *livelihood security* is achieved when the livelihood provides adequately for both current and future generations throughout all seasons and times. A household can achieve this security by enabling it achieve one or a combination of livelihoods outcomes some of these could be ownership of land, stable employment, income and grazing rights.

World Bank defines *poverty* as "the pronounced deprivation in well-being" (Haughton and Khandker 2009:1) and develops a scale to measure poverty known as the Purchasing Power Parity (PPP) by which anyone living on less than US 1.25$ a day is considered to live below the poverty line (Haughton and Khandker 2009:186-190). Added to this definition is the premise of capability of the individual to function in society. This relates to well-being and ability to fit or find a place in society and its absence is manifested by lack of adequate income, education, low health status or a state of powerlessness in a society (Haughton and Khandker 2009:1). Chambers (1995:173) expands this definition to incorporate physical weakness, vulnerability, social isolation and powerlessness. Chambers (1995); Haughton & Khandker (2009) provide a clear understanding and definition of *poverty*. In as much as it is defined in absolute terms the perceptions of the poor on their status is as important as increasing their incomes and access to services. This study used the term to imply the lack of access services and assets necessary to live a dignified life as

measured in absolute terms and equally important, as defined by the society one finds him/herself in.

2.2.2 The SLA approach and its components

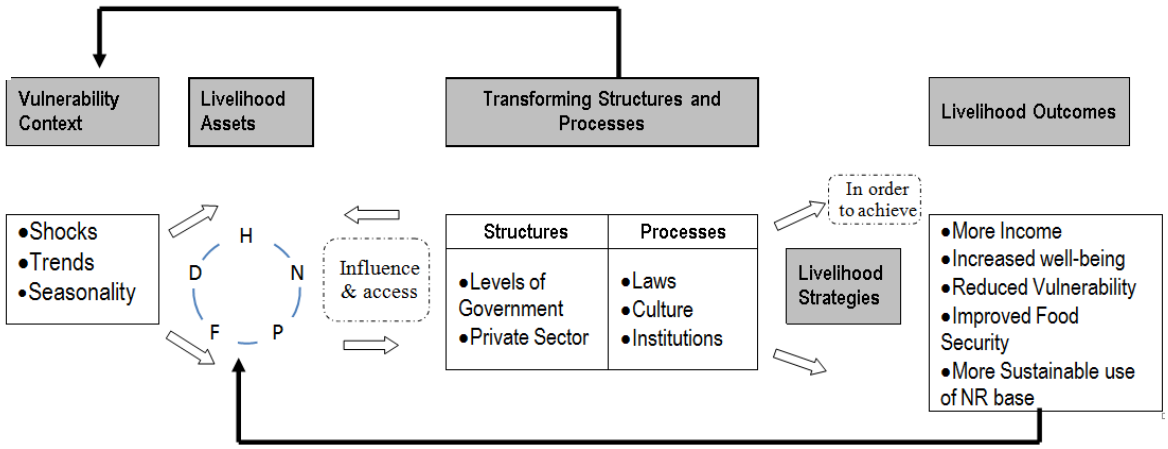
The obligation to provide the current generation with its livelihoods wants and needs without compromising the ability of the natural environment to provide for future generations remains one of the greatest development challenges. Among the most commonly used approaches is the Sustainable Livelihoods Approach (SLA). The SLA has been recently feted as cable of addressing the development agenda while integrating people centric approaches, governance, pro-poor marketing, social protection, disaster risk reduction, climate change and adaptation (IDS 2011:1). Its ability to incorporate all these new challenges and approaches to development makes it a robust livelihoods assessment and interventions design tool.

This study based its collection of data on livelihoods on the SLA Framework (See Figure 2.1) as defined by Krantz (2001:19). This framework breaks down a livelihood into five key components namely; (1) vulnerability context which analyses the existing risks and proneness of the community to shocks, (2) livelihood assets which refer to the endowments or resources a community possesses including human, natural, physical social and financial capitals, (3) transforming Processes Institutions and Policies (PIPs) which refer to systems and policies that define and determine the use of the assets available to earn a living. They range from customary regulations and institutions to government policies and structures, (4) livelihood strategies which looks at the efforts a community puts into place to transform the assets it possesses and thus defining its living standards. The strategies are largely influenced by the vulnerability context and the transforming structures and, (5) the livelihood outcomes which refer to the ultimate result of the livelihood efforts and that could lead to improved wealth, living standards and status reduction vulnerability.

The SLA framework is useful in ensuring that a student of a livelihood system does not just focus on assets and forego the enabling factors also known as PIPs and the people's interaction with their assets to end up with a certain livelihood outcome. Thus the framework provides a holistic system of understanding a community's way of life enabling the researcher to weave through the complex aspects and interactions. The fact that the SLA framework can systematically break

down an otherwise complex social phenomenon into elements that can be used to identify areas of potential investments for sustainable development, makes it one of the best tools for analysis. The framework provides a process of understanding the experiences people encounter especially in the poverty stricken and disadvantaged. It is participatory and based on the premise that people experiencing poverty have abilities and assets which can be used to help them create a sustainable livelihood for them and their families. The SLA approach has further been deemed as a shifting of focus on agrarian expansion growth and expansion to inclusion of livelihood diversification (Knutson 2006:90-91).

Figure 2-1: Graphical Representation of the Sustainable Livelihood Framework



Source: Krantz 2001

2.3 Empirical Literature Review

Rural communities in developing countries continue to face tough choices in the sense that whereas industrialization, agrarian revolution and other changes in social-economic systems in the developed world were gradual, the former countries have had to subscribe to the already predetermined patterns. These developing countries do not have the opportunity to adopt or evolve their own systems. Bidwai (2006:52) contends that "Traditional forms of knowledge about soils, crops farming, medicinal plants, grasses, forest trees and animal husbandry have greatly been eroded. They are not valued at all, or are severely undermined by 'standard' forms of modern 'technical' or 'expert' which alone are recognized by states and laws." Thus in many rural

communities where traditional livelihoods are the main source of income, communities are daily battling with the changes and challenges which have all of a sudden cropped up on them.

Apart from the changes in physical assets, communities have witnessed changes in social interactions, traditional groupings and structures which have ceased to be in existence or exist in ceremonial form. As noted by Campbell et al (2002:114), traditional rules and institutions have lost power and value; among these are relationships between old and young, gender relations and roles. Social support and medicinal systems have also become extinct or greatly degraded in importance.

Current research on improving rural livelihoods has focused on diversification of livelihood sources as one remedy to stagnating living standards. Livelihood diversification is defined as "the changing character of household activity portfolios and income sources, not to switching full-time occupations, nor to the relative diversity of sub-sectoral non-farm enterprises in rural areas" (Ellis and Allison 2004: iv). Based on this definition, it is of utmost importance to point out that even with diversity of livelihoods; there still remains the backbone activity a community practices. Thus, it is a common trend for communities to dedicate resources from their income to support the mainstay of their livelihood. This is critical in making recommendations for alternative livelihoods. Diversification can only be attained when rural communities are able to invest, albeit these investments are attainable only from surplus incomes. Thus diversification and the mainstay of a community's livelihood are intertwined calling for the dire need to focus on both in efforts geared towards assisting these communities climb the ladder of livelihood security.

Communities which drive their development agenda are more likely to achieve significant successes in their fight against poverty. "The future is firmly in the hands of the farmers themselves and what the development community can do to make a difference is through modifying the economic environment" (Campbell et al 2002:139). From the works by Bidwai (2006) and Campbell et al (2002) it is in order to conclude that development efforts that will achieve success will take into account the anticipated change vis-à-vis the existing situation and its effects on the rural population for which it's intended, it will also value and incorporate existing practice into the proposed efforts and involve ongoing all-inclusive reflection as interventions continue to address emerging challenges.

In an effort to ensure that development interventions guarantee current and future needs, the April 1991 FAO/Netherlands Conference on Agriculture and Environment concluded that rural sustainable development policies should aim at operating so that agricultural and rural sectors are able to meet the basic nutritional needs of present and future generations. Such interventions should address the need of long-term employment, provide adequate incomes and maintain the productive capacity of natural resources, at the same time mitigating the agricultural sector's vulnerability to hostile natural and socio-economic factors and other hazards. (FAO 1993)

The livelihoods of the Akamba people are dictated by the natural environment in which they reside. The low-lying Makueni, Machakos and Kitui Counties are part of Kenya's Eastern Foreland Plateau. The counties are characterized by rainfall (380 -1,270 mm of annual precipitation), temperature and altitude (440 -2100 meter above sea level). The rainfall, except in the hilly regions, is low and unreliable. The precipitation pattern is bimodal, with long rains falling between March and May and short rains from October to December" Kasperson et al 1995) English et al (1994:55-63) and Kasperson et al (1995) have studied the way of life of the Ukambani region (now Machakos, Kitui and Makueni Counties). With little or no literature available at sub location level, most information available is at District or County level. A summary of their works is presented in Table 2-1 below while Table 2-2 summarizes the County's demographical data.

Table 2-1: Livelihood characteristics of the Akamba in post-independence Kenya

Food, crops and production	Health	Education	Cash Income	Key reasons for adoption of livelihood
Cultivated crops with an introduction in new crops such as maize, sedentary (as opposed to shifting) cultivation, use of oxen to cultivate terraced lands. Limited introduction of mechanized agriculture and irrigations systems. Rise of horticultural production and marketing	Hospitals and modern herbal medicine from other locations	Formal schooling – primary schools were accessible to all by 2002.	Wages on farms, shops, small scale trade, handicrafts, sale of fruits and vegetables White collar jobs. Cooperatives	Population growth with limited access to land Increased use of money exchange as opposed to barter trade. Loss of bio-diversity that would provide curative herbs Emergence of lifestyle diseases such as Diabetes means there is no known traditional cure Improving standards of living requiring clothing, school, vaccines and

				other care not previously available

Source: English et al (1994:55-63), Kasperson et al (1995)

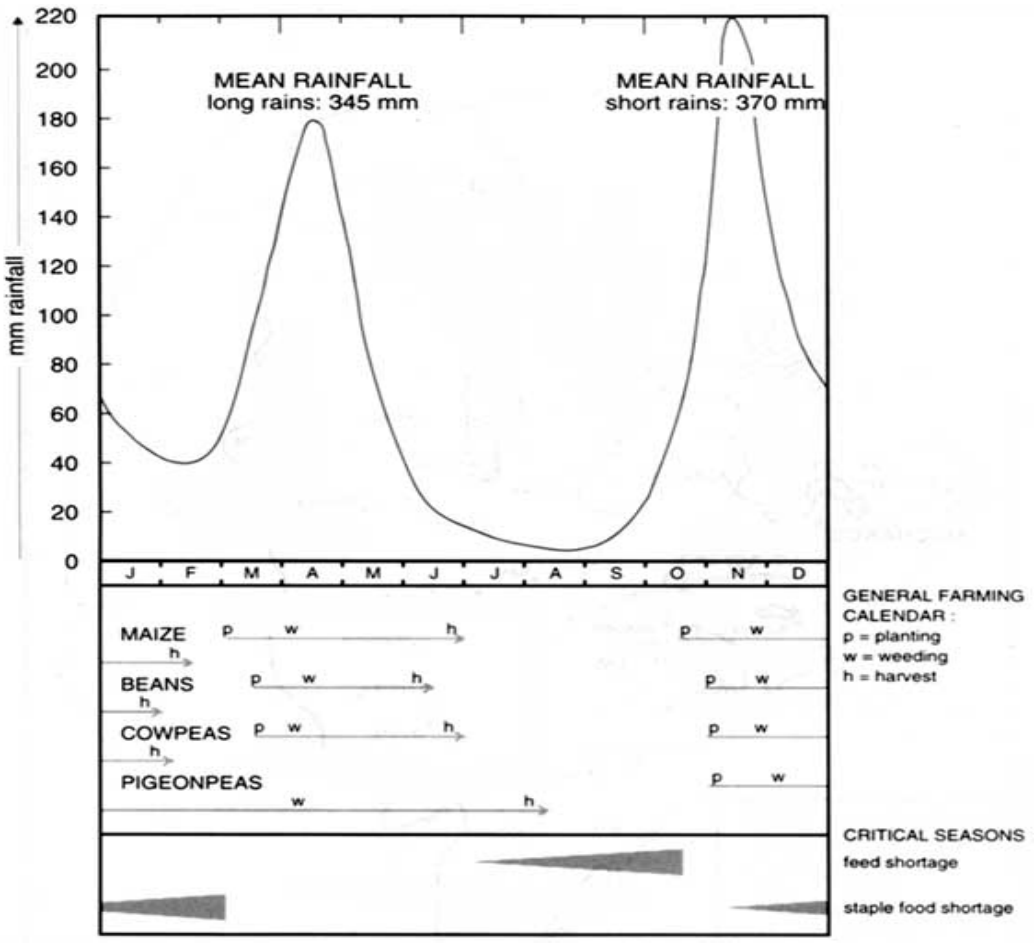
Table 2-2: Machakos County Socio-economic indicators

Total County Population	1,098,584
Approximate Ratio Male to Female	1:1
Average Households size	4.1
Population with primary school education	69.7%
Households headed by females disabled groups	35%
Absolute Poverty (Rural & Urban)	59.6%
Income from Agriculture	70%
Income from Rural Self employment	10%
Wage employment	11%
Number of unemployed	2%

Source: Kenya (2005:8, CRA 2011, KNBS 2009)

Figure 2-2 summarizes the rain and cropping patterns in Mbiuni location adjacent to Masii Location which are similar to those of Embui (Ilia 2009).

Figure 2-2: Rainfall seasons and cropping patterns in Mbiuni Location



Source Kasperson et al (1995)

When English et al (1994) published their work on how population growth led to an increase in environmental conservation and thus increase agricultural production, a lot of interest was generated. This unique phenomenon was possible because as opposed to system of subsistence production that was practiced before, farmers focused on intensive food and cash crop farming. With the opening up of markets in the city of Nairobi, it was noted that increased sales from the cash crops farming ameliorated people's livelihoods portraying Ukambani to be on the path to self-sustenance. This notwithstanding, Murton (1999:37) points that agricultural intensification has not been a homogeneous experience, improvements in living standards have been experienced by this families that access to non-farm and usually urban-derived incomes. This income facilitates security during periods of agricultural crisis and enables a virtuous cycle of on-farm investment, leading to higher agricultural yields. In contrast, families without access to such income were found to be experiencing a cycle of declining soil fertility and declining yields per

head. The low yield and productivity are further attributable to low farm inputs, labor constraints and inappropriate tillage (Karuma 2011:237-243).

Things were not always as grim as they look today. The Akamba people like most African communities are endowed with a rich heritage of folk tales and oral history. Many folklore tales point to times when besides the infrequent droughts the community had plenty to eat and entertain themselves. Even when shocks such as droughts or disease epidemics hit, the community was able to recover fully (Mwova 1985). The researcher further reiterates this by reminiscing how in his childhood days (late 1970s to mid 1980s) communities were able to plant nutritious tubers such as arrow roots and sweet potatoes after the rainy seasons as natural springs remained for up to two months making this possible. This is no longer the case as the rains have become reduced in both quantity and coverage.

The International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) has engaged in studies to identify crops that can withstand the moisture stress prevalent in many parts of Machakos County (Odeny 2001:43). One such crop has been the pigeon pea. However that it requires eight to eleven months (Silim et al 2001:34) to be harvested is challenged by the increasing frequency of droughts and especially in the bimodal rains pattern characteristic of most of Ukambani region. The rapidly changing weather patterns resulting in soil moisture stress present an ongoing challenge to researchers in an attempt to find crops that would be sustainable in such semi-arid lands.

The Kenyan Government's efforts to improve the living standards of rural communities have not met the level of success intended (Kenya: 2004:8). The context of such plans could be one of the causes but one big challenge is the fact that rural communities have perceived government institutions and officers as corrupt, seeking self-gain or serving interests of particular groups such as politicians (Bratton 2010:13). On the contrary non-governmental organizations and churches are deemed more focused, open and effective in their assistance programs (Ellis and Allison 2003:17-18). World Vision International (WVI 2008:5) is one of the non-governmental organizations offering development assistance to Mwala District, using a child sponsorship approach where children are supported through school and long term attempts to address livelihood insecurity by working with community based organizations.

Besides the interventions by outsiders and the government, individuals have by themselves adopted a number of strategies to improve their livelihoods in Machakos County, these include: (1) Increasing land under cultivation and improved cultivation methods such as use of manure from livestock and compost heaping to improve soil fertility: (2) diversifying income sources by raising income from off-farm activities namely sand, stone and water collection while others burn charcoal and sell bricks: (3) working on neighbor farms as paid laborers: (4) receiving monthly remittances and, (5) engaging in illegal activities such as stealing and brewing illicit traditional liquor. (Carney 1998:1-25)

Existing research has thus largely focused on one or the other livelihood determinant. Further, the successes noted in the studies by English et al (1994), Silim et al (2001) and Mortimore et al (2004) cannot be generalized to the entire County (Murton 1999) owing to its diversity in climatic and weather patterns. There is therefore a need to undertake a holistic review at a specific area to determine what the situation analysis in a smaller area of the County as well as identify opportunities for improved livelihoods.

The above referenced studies informed this study's scope and provided it with key areas of investigation. Further the works aided the formulation of research tools to identify players and inputs into the improvement of livelihoods. The literature reviewed helped to characterize the study community and borrowed from studies elsewhere to understand the livelihood dynamics that communities employ and have to deal with in pursuit of improved living standards.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology used in conducting the research. As discussed in Chapter One the study is an exploratory design used to determine the livelihood situation and opportunities in Embui. This chapter presents the research design, the study area, scope, population and sample size, data types, data collection methods and analysis methods

3.2 Research design

The study was largely exploratory with some descriptive design incorporated. The exploratory design adopted is often linked to old biases which include subjectivity, being non-representative and often non-systematic. Despite the foregoing pitfalls it is often used in exposing areas that may not have been known or obvious to the student (Cooper and Schindler 1998:134). The research objectives and questions defined in section 1.2 defined the framework of the design. Further the study has adopted a livelihood analysis framework, the SLA to help define variables of study and form a basis for analysis and discussion. The descriptive design was used to explain phenomena and used both inference and descriptive statistics to explain outcomes and relations in the study area.

3.3 The Scope of the Study

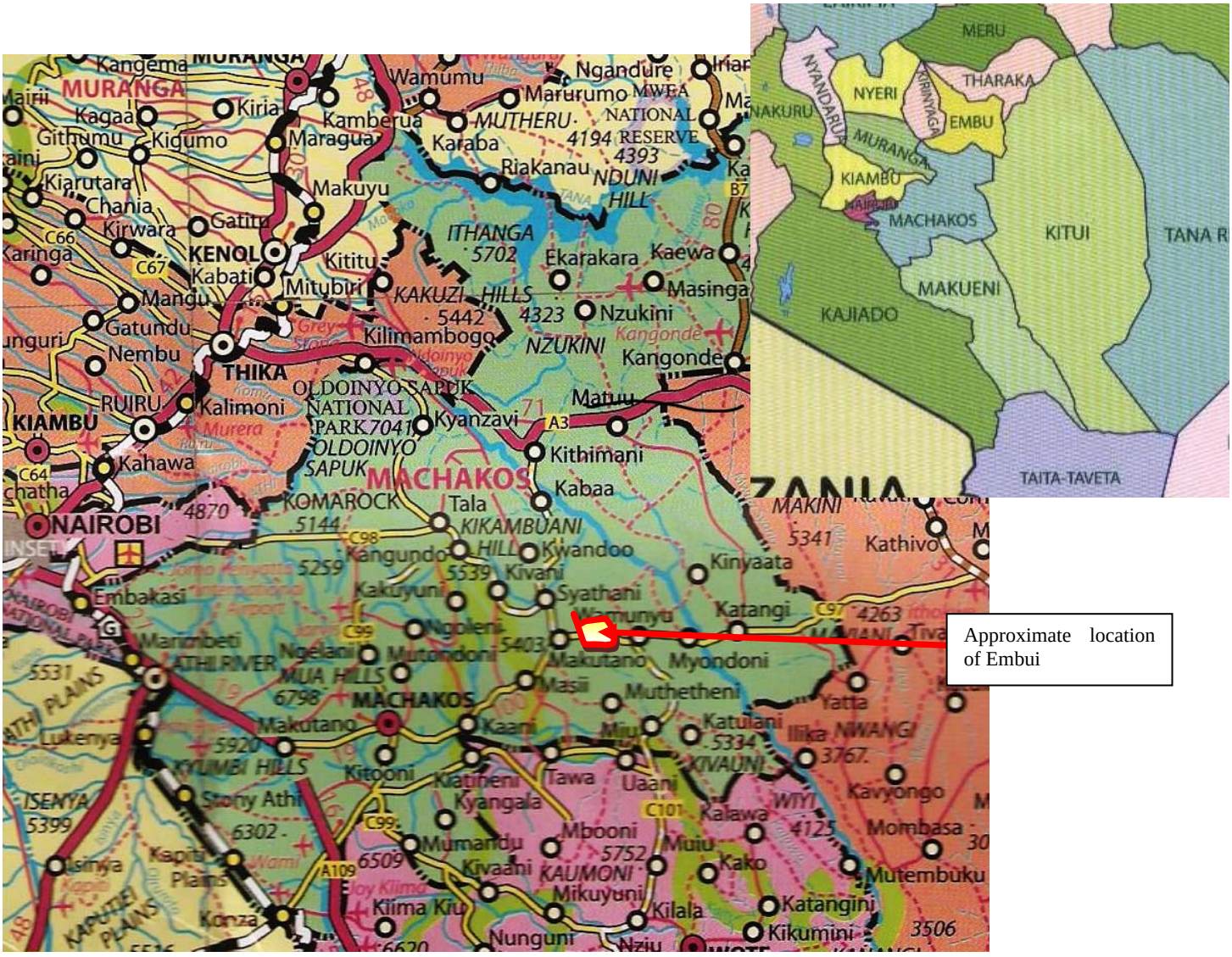
Given the nature of study the scope was limited to livelihood options identified through literature review and pre-study discussions with key informants. It focused on a small community that provided opportunity for exploring as many different aspects of its livelihood as possible. Lastly the SLA framework delineated the range of livelihood determinants that were interrogated.

3.4 Study Area

Machakos County which was at the time of data collection still known as Machakos County is one of the six counties that form Eastern Province. It borders the city of Nairobi and Thika County to the northwest, Kitui County to the east, Kajiado County to the west, Makueni County

to the south and Mbeere County to the northeast. It stretches from latitudes 0º 45’ south to 1º 31’ south ad longitudes 36° 45’east to 37° 45’ east. The County covers an area of 6,281.4kms most of which is semi-arid.

Figure 3-1: A Zoomed in map of Machakos County showing the approximate location of the study area.



Source: Adapted from Inima (2012)

High and medium potential areas where rain fed agriculture is carried out consist of 1,574km^2 or 26 percent of the total area. Administratively, the County is divided into Machakos, Kangundo,

Mwala and Yatta districts and Masinga, Yatta, Kangundo, Matungulu, Kathiani, Mavoko, Machakos town and Mwala constituencies. The study was carried out in Embui sub-location of Masii location, Mwala Division marked in figure 3-1.

3.5 Population, sample size and sampling techniques

3.5.1 Study population

The estimated population of Embui is 5,355 persons and administratively falls into 8 villages of Embui namely Kamuasya, Kiumo, Uvaini, Ianguni, Mililuni, Mumbuni, Nzevea and Utithini (Ilia 2009). In the sub location and County at large, an average household has an average of 5 persons as shown in Table 2-2 with a ratio of close to 1:1 male to female (KNBS 2009:6)

3.5.2 Sample size, composition and sampling techniques

The study engaged 123 persons using various data collection techniques summarized in Table 3-1 below. The study employed a purposive sampling method to ensure inclusion of the various demographics required. This was done by working with the village head to identify them by categories. To improve on representativity the research team employed a mix of purposive and stratified sampling that stratified the subjects along aspects of livelihoods and age brackets and then used random sampling approach to select study subjects from each homogenous category. As noted by Babbie and Mouton (2001:191) stratification used alongside random sampling allows the research to deal with a homogenous group greatly reducing the sampling error.

The study sampled a total of 123 persons broken down as shown in Table 3-1

Table 3-1: Study subjects by age and gender

Age Bracket (years)	Number by Gender	
	Male	Female
16-24	9	11
25-49	38	27
Above 50	20	18
Total	67	56

The homogenous administrative villages with virtually the same population in each (Ilia 2009) eased the sampling of a total one hundred and twenty three study subjects, they were stratified as follows.

1. *Elderly persons aged above 50 years*. Extrapolated data from Machakos County Strategic Plan (KNBS 2009:6) shows that 14.7 % of the population is of the age of 50 and above. This applied to the Embui population resulted in about 600 people of the population in Embui to above 50 years of age. Out of this group a sample of 30 persons were selected by purposive sampling method through an identification discussion with the village head. Once the names were availed a list was drawn and the research team classified them into male and female. Further stratification was carried out to ensure that the group included different trades and livelihood pursuits practiced.

   The team then selected randomly from each group shown in Table 3-4. During the selection of former leaders there were only 3 available of the planned 6 and therefore the research team selected additional names were selected randomly from the manual jobs category and local traders who had more than all the others.

Table 3-2: Desegregation of elderly persons by occupation/trade

Current or previous Trade/Occupation	Male	Female	Total
Current /Former village, council leaders	3	0	3
Medicine men, handicrafts and informal traders	2	4	6
Current/ Former personnel in the police, security companies	5	1	6
Persons who have/ had no formal job and practiced subsistence farming plus some casual work on occasions	3	6	9
Retired officials from white collar jobs	3	3	6
Total	16	14	30

2. *Productive age between 25 and 49 years of age*. This is the most productive group in the society and accounts for roughly 26.5% of population approximately 1,410 people (KNBS 2009:6). Just like the group above the subjects were selected through purposive sampling and was supported by the village heads in each of the eight villages. A total of 65 subjects were studied in this category. Using their lists of residents, the research team disaggregated the villagers by sex and then stratified them along their occupations as shown in Table 3-3.

Table 3-3: Breakdown of study subjects in the productive age by occupation/trade and gender

Current or previous Trade/Occupation	Male	Female	Number selected
Teachers and other salaried workers commuting to and from the village daily	4	8	12
Informal traders	9	12	21
Casual laborers	12	4	16
Government and private sector employees not residing in the community during the work week.	5	2	7
Those who earned most of their income from farming and animal rearing	2	7	9
Total	32	33	65

3. *Persons aged 16-24.* A sample of 20 youths was selected. There were ten females and males and through purposive sampling 5 university and college students, 5 secondary school and 10 youths who had either dropped out of school in both primary and secondary school or had not proceeded with any formal education after completing their secondary school, were selected. Their breakdown by level of education and gender is as shown below.

Table 3-4: Breakdown of youths studied by level of education and gender

Level of Education	Male	Female	Total Studied
University and College	3	2	5
Currently in Secondary School	2	3	5
Completed Secondary School in last 5 years and haven't continued with any formal education	2	3	5
Dropped out of school without completing secondary school education	3	2	5
Total	10	10	20

4. *Opinion leaders.* Eight opinion leaders were consulted. They included the sub-location sub chief, two customary clan leaders, one local pastor, one women group leader, one sitting local government councilor and two secondary school headmasters. All the subjects were male besides the women group leader and all save for the local government councilor fell in the age bracket above 50 years of age.

Table 3-5: Breakdown of Key informants by role, gender and age bracket

Key informant's Role	Total Studied	Age Bracket
Sub-location Chief	1	Above 50
Customary Clan Leaders	2	Both Above 50
Local Church Pastor	1	Above 50
Sitting Councilor	1	40 Years old
Women Group Leader	1	Above 50
School Head teachers	2	Both Above 50

Source Field Work 2010

3.6 Types of data collected

The data collected was both qualitative and quantitative. The exploratory cum- descriptive research design sought to create linkages and provide explanation to emerging phenomena during analysis. Consequently, in as much as most data collected was quantitative, there was an equal focus by the team to ensure that the study captured enough explanations and context in which the quantitative data was collected. Table 3-4 below summarizes the key variables on the basis of the livelihood determinant in which they fall under and whether data collected was primarily qualitative or quantitative.

3.6.1 Quantitative data

As shown in Table 3-6 the study focused on quantitative variables that helped identify the socio–economic status of researched households. These ranged from household incomes levels to household assets and education level to changes in prices that households considered significant.

3.6.2 Qualitative data

The research also engaged in collection of qualitative data that was useful in explaining any relationships. These were especially useful in understanding variables under vulnerability context, transforming structures and processes and livelihood outcomes. Table 3-6 also identifies the key areas of qualitative data collection.

Table 3-6: A summary of the data collection framework within the SLA approach

SLA determinant	Sub-category	Main /Key Variable	Measures	Main type of data
Livelihood Assets	Human Capital	Level of Education	Scale: Primary/Secondary Tertiary	Quantitative
	Natural Capital	Land	Acreage	Quantitative
	Physical Capital	Type and numbers	Number	Quantitative
	Social Capital	Membership in Church/Self Help Group or Active Customary structure	Yes/No	Quantitative
	Financial Capital	Income by sources and amount	Equivalent in Kenya Shillings	Quantitative
Vulnerability Context	Shocks	Droughts	Frequency of droughts	Quantitative
	Trends	Price increases for goods and services	% increases over time	Quantitative
	Seasonality	Regular changes in farm and market prices	Peak and low prices for farm commodities	Quantitative
Transforming Structures and Processes	Transforming Structures	Organizations that influence livelihood	Type, number and whether intended influence is positive or negative.	Qualitative for impact
	Processes	Power relations, cultural and organizational processes that influence livelihoods	Perception on the impact of the processes whether positive or negative	Qualitative
Livelihood Strategies		Diversification of incomes	Type and incomes obtained annually	Quantitative
Livelihood Outcomes	Increased incomes	Overall incomes	% increases in incomes in comparison with expenditures	Quantitative
	Reduced vulnerability	Access to safety nets	Membership in a savings group or cooperative society	Qualitative

3.7 Data Collection Techniques

The study used the following data collection techniques: (1) Semi structured questionnaires (the questionnaire is attached as Annex 4) (2) Documentary review; (3) Key informant interviews (the guidelines are attached as Annex 2) (4) Focus Group Discussions (The guidelines are attached as Annex 3) and, (5) Observation. Guidelines were provided to research assistants during training

sessions and pre-testing to ensure that data collection was properly done. Given potential objectivity challenges that could arise in determining scales, or even providing accurate information to avoid biases or misrepresentation, training for the data collection team and a pretest exercise were conducted and tool refined. The data collection team was brought together in a school hall and introduced to the research objectives, data collection techniques and tools to be applied, interview and transcription skills. In addition the team was taken through common challenges in data collection such as non-cooperative subjects, absent subjects, how to moderate focus group discussions and avoid one or two domineering members and how to keep the subjects focused on the subject matter. After the two days of training the teams went out to test the instruments in a neighboring village – Maweli which was not in the study area. This pretest exercise also functioned to sharpen research team's skills to cope with data collection and transcription challenges.

Focus group discussions and key informant interviews were used to obtain vital information on experiences, challenges and opportunities. Discussions around policies, livelihood strategies and vulnerability context generated qualitative information. The captured qualitative data provided broad based opinion on possibilities, challenges and recommendations and further explains key trends and conclusions coming out of the quantitative data. Narration of available literature was collected and summarized as part of literature reviews adding on to the qualitative data collected in Embui.

3.7.1 Semi-structured questionnaires

When a researcher is not certain of respondents understanding or ability to respond to questions, a face to face administration of the questionnaire as opposed to mailing or delivery and collection of questionnaires is preferred (Babbie and Mouton 2001:249). The authors further identify appearance and demeanor, familiarity with questionnaire, follow on questions, recording precision and probing for responses as key characteristics that will determine the success of and study. The research opted for a face to face administration for all subjects to allow for greater interaction and avoid a logistical heavy exercise of distributing and collecting responses. Another reason for administering the questionnaire by the research team is that some of the subjects of the interview were not literate enough to provide written responses. The semi-structured interviews

were administered to the three age brackets described in Table 3-1 namely; (1) youths aged 16-24 – 20 persons; productive age (25-49) – 33 persons; and, older persons (50 and above) - 25 persons. The questionnaires collected data by household for each of the SLA determinants. The interviewed person was required to provide household level data which was factual and not their opinion. Then they were required to provide qualitative reflection on what the quantitative information provided meant to them and suggest any ideas for improving the livelihoods as well as dealing with the challenges.

3.7.2 Documentary review

In conducting social research, subjects often point the researcher to existing documentation on various issues raised. Babbie and Mouton (2001: 378-379) argue that in research there is often the use of stored documents or records. This stored information is often subject to changes in context and content. When records are sorted they are often filed in categories, physical locations and with access to diverse persons. The research dug through various sources to search through existing records for livelihoods challenges and opportunities in rural communities. The study made use of the internet and specifically Google scholar as well as an email discussion forum for relief workers in an attempt to identify successful practices that have been applied in improving livelihoods. In addition articles and published works were consulted at the University of Nairobi library. These included Government of Kenya plans and reports, sub-location population demographics and development plans. Subject catalogue at the University of Nairobi was useful in pointing the researcher towards the relevant literature.

3.7.3 Key informant interviews

Various persons in any community owing to their position, reputation, experience or social status are often privy to information the normal community member doesn't have. These range from religious, administrative, traditional leaders to elite, successful businessmen and farmers to traditional medicine men. As pointed out by Flick (2002:77) the respondent is well versed with the topic at hand and should be allowed to within relevance provide as much information as they can. The key opinion leaders were led through the broad subject of livelihoods narrowing down to current practice, challenges and opportunities. The discussion went further to relate these livelihood dynamics to the existing, administrative, social and political environment and policies.

They included the sub-location sub chief, two customary clan leaders, one local pastor, one sitting local government councilor and two secondary school headmasters.

3.7.4 Focus Group Discussions

Focus Discussion Groups (FGDs) were disaggregated by age that is those aged between 25 and 49 and those aged between 50 and above, and sex. Four groups were setup in the two main centers of the sub-location Embui and Ghetto. Women are normally harder to come by given their domestic roles and thus the research team caught up with 8 of them during a *Mwethya* in Embui center of Nzevea village and 9 women in Kamuasya village during a cooking group gathering. The male groups were found in Uvaini (7 men) after a school board meeting and 6 in Mumbuni village after a dowry negotiation ceremony

These groups were led by a facilitator to discuss the current efforts to earn a living and the challenges they face and then undertake to build consensus on what has changed in the short-term and what has influenced the change and finally propose some remedies.

The FGD groups declined the use of recording machines indicating that they would not be comfortable to give opinions if it were recorded. The research team thus had two people at each FGD to ensure that they captured the entire discussion individually and consolidated into one report.

3.7.5 Observation

In collecting data in social research it is mostly the case that a researcher is aware, sees or picks up number of observations during interactions with the subjects and study area that lead to further probing. These observation help give a full picture and as Babbie and Mouton (2001: 199) note, a researcher who has prior knowledge of an area will naturally seek more clarification, be tempted to see secrecy or cover-up and want to employ various ways of crosschecking information received. There exists the challenge of determining what is important, as one observes many ideas and observations which seem relevant. The research team was trained and oriented to ensure that they could objectively pursue what they observe or hear.

The research team was provided with a guideline for collection of observed data. The main focus was on land size, use and other natural resources and household assets and types. The data collection team took note of communal infrastructure that was grouped in categories namely transport infrastructure, health and education facilities, agriculture, water and sanitation, livestock. Whereas most of the communal infrastructure was identified during household interviews it was apparent that households only pointed to things they found relevant to their situations. For example a foot path was mentioned by those without cars, bicycles or carts in as much as culverts and graded roads were available. Table 3-7 is represents the guidelines that were given to the team on how to collected and record observed data.

Table 3-7: Observation guideline

Activity	What to observe	What to record
Focus Group Discussion/Interviews	• Hesitation in response • Strong Opinion • Issues that have diverse opinion	• Highlight responses where there was hesitation • Highlight responses where there was an emotional response for further probe and/or triangulation • Specify when consensus was not achieved where the majority lay and whether it was male/female older/younger split etc
Household visit	• Presence of cattle enclosures with recent dung • Farm land • Tools, machinery and equipment • Type of houses and other structures and their state	• Presence of enclosure and size (large can hold 20 livestock plus, medium 5-15 cattle and small below 5 heads) • Record approximate land size that is fenced around the homestead. • Record presence of cars, ox-carts, wheel barrows, ox-ploughs other machinery • Note type of house, mud walled, grass thatched, corrugated iron sheet, brick walled or quarry stone walled and state (disrepair, well maintained, average)
Communal Walks	• Community infrastructure such as roads, boreholes, schools, cattle dips. • State of farmlands whether planted, health of crops and animals	• Record type and state of road, water sources, schools etc • Take note of the farm lands that seem to be doing well and identify what the likely causes are these could be terraces, use of farmyard or compost manure etc. Similarly where animals are seen to be healthy/ poor body condition describe the grazing plot, and if not clear ask one FGD and KII to establish the reason.

3 .8 Data Analysis and Presentation

Completed data collection tools were brought to the researcher and checked for completeness, and ensured that they were legible and filed in a coherent manner. The researcher then opted to

commence on the quantitative analysis so as to begin to form opinion and then seek further explanation from the qualitative data. The study made use of the SPSS software to analyze and present this data and then with the emerging results consulted the qualitative data to explain trends, relations and for triangulation purposes. This study focused on tables, graphs and charts and narratives to present its findings. All data was analyzed and interpreted along the five SLA determinants as shown in Table 3-6. The five determinants were used to respond to the research questions as presented in Table 3-8.

Table 3-8: Presentation of the research questions as presented by the SLA approach.

Research Question	Presented by SLA Component
• What are the present livelihoods of the community in Embui?	Livelihood Assets/Current Livelihood Strategies/Vulnerability Context.
• What are the livelihood opportunities and challenges for the community in Embui?	Transforming Structures/Recommended Livelihood Assets and Vulnerability Context
• What recommendations on livelihoods strategies can be made to the community in Embui in order to improve their livelihoods?	Recommended Livelihoods Strategies

3.8.1 Quantitative Data

In analyzing quantitative data, contextualization is as important as summarizing and placing the data in certain categories (Flick 2002:176). Averages and central tendencies from individual data and time trends are pivotal in the analysis to show the most prevalent value for each variable. Of the eighty questionnaires sent eighty five (94%) were accepted as complete and analyzed. The filled in questionnaires were coded into Statistical Package for Social Sciences (SPSS) using templates prepared in accordance to the research questions. The mostly numeric data was entered into the software that allowed the derivation of statistical information, using SPSS. All quantitative data was analyzed for the following statistics: Mean, Standard Error of Mean Median, Standard Deviation, Variance, Skewness, Standard Error of Skewness, Kurtosis, Standard Error of Kurtosis, Range, Minimum, Maximum and Sum.

The statistics were revisited for errors in entering data and then the serialized questionnaires re-checked. In five instances where income was found to be too high for instance over 200,000 KES per month it was found out that the data collected was an annual amount and not a monthly

amount as collected by the research assistant. This was adjusted to a monthly income by dividing the incomes to a monthly rate.

3.8.2 Qualitative data

Key informant and focus group discussion transcripts were read and analyzed manually to help identify themes and information relevant to the research questions (Shaw 2001:87). In addition notes from literature review helped provide a deeper understanding and comparison for ideas gathered. The study team discussed observation notes every evening where key points that required further inquiry through KII and FGD or further observation and characterization were identified. At the end of the fieldwork, enumerators collated their observations into a full narrative that was used alongside other qualitative data collected to help describe further the quantitative data collected. The researcher undertook this interpretation of the qualitative findings after the quantitative analysis above mainly to help understand or explain the trends from the quantitative data selection. This qualitative data was then presented as narrative description of relations and explanation of statistics derived from the quantitative data. Further description of phenomenon and trends was done using the qualitative data.

CHAPTER FOUR

THE FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study which focused on key livelihood aspects and sought to understand the dynamics of each of these livelihood determinants. The analysis was done along Sustainable Livelihood Approach (SLA) model determinants. The findings are presented according to research questions.

4.2 Descriptive Statistics

4.2.1 Age of household heads

Given that the SLA model is based on the household the inquiry was made of the household demographics in Embui. Table 4-1 shows that 1 (1.3%) household was headed by 16-20 year old and 37 (46.3%) households had household heads aged over 50 years. Thus, all households were headed by adults apart from one household which had lost both parents and was headed by an 18 year old girl. The median age of the household heads is 46-50 years of age with a majority of household heads above 45 years of age.

Table 4-1: Age of household heads

Age bracket of Household Head	Frequency	Percentage
16-20	1	1.3
21-25	7	8.8
26-30	5	6.3
31-35	7	8.8
36-40	10	12.5
41-45	4	5.0
46-50	9	11.3
over 50	37	46.3
Total	**80**	**100.0**

Source: Fieldwork, 2010

Household heads were asked about the ages of the members including the household heads themselves. Their responses revealed that most members were between the ages 0-15 years (30.56%), 16-20 years (18.29%), 21-25 years (15.28%), 26-30 years (13.89%) and the rest of age brackets rated below 10% (see Table 4-2). The age bracket 16-35 accounted for about 55% of the population. The study covered 80 households which had a total membership of 432 persons representing a household average of 5.4 members per household. This household size is slightly higher than the County average of 4.1 (KNBS 2009:7).

When engaged in a discussion of the community age statistics, Focus Group Discussions (FGDs) confirmed that most of the population was in the 15-35 year age bracket which the groups indicated was seen to representative of a youthful community. On the positive side the young population was cited by focus groups and key informants as providing households with sufficient domestic labor to till land and take care of other domestic chores. The focus groups were however quick to add that the burden the non-employed youths placed on household heads for daily sustenance was a concern for the community. Key informant interviews revealed that in Embui, dependence, that is the age where on average a household head has responsibility to provide for the individual, is between ages 0-25 and 60 and above for the elderly who begin to need some support.

Table 4-2: Percentage of household members by age brackets

Age bracket	Frequency of household members in age bracket	Frequency of age bracket as a percentage of total
0-10	83	19.21
11-15	49	11.34
16-20	79	18.29
21-25	66	15.28
26-30	60	13.89
31-35	34	7.87
36-40	19	4.40
41-45	9	2.08
45-50	16	3.70
over 50	17	3.94
Total	**432**	**100**

Source: Fieldwork, 2010

When asked about the male to female balance, key informants indicated that this was almost at a 1:1 ratio male to female population. This ratio compares favorably with KNBS (2009:7). However, results from households show that the population at various ages differs slightly, for example, while KNBS (2009:5) indicates that the age between 15-25 constitutes 17% of the population, this study places this age bracket at 33.6% percent of the population. Discussions with key informants explained these differences as brought about by two factors; (1) there are more middle aged persons (above 30 years of age) moving from the sub-location after age 25 to engage in casual labor and training in both formal and informal sectors and the other is (2) that this study is of a rural community and the County numbers presented by KNBS (2009:5), Kenya (2011) were composite of the rural and urban populations.

4.3 Livelihood Situation in Embui Sub-location

This section discusses the findings on the livelihood capitals and strategies employed in Embui. It has picked major aspects of the livelihood capitals and strategies to characterize the situation in the sub-location.

4.3.1 Human Capital

Human capital is often measured in terms of skills and knowledge. To allow ease of comparison and quantification, household head education levels were inquired. Where the respondent was not the household head, the respondent provided the information related to the household and household head. Table 4-3 shows that 19 (23.75 %) of household heads had not completed primary school, 16 (20%) had completed primary school, while 3 (3.75) % had started but not completed secondary schooling 19 (23.75%) had completed secondary and 19 (23.75%) 5% had completed some college/university course.

Table 4-3: Level of education of household heads

Level of education	Frequency	Frequency of level of education as a percentage of total
Incomplete primary School	19	23.75
Primary school	16	20.00
Incomplete secondary	3	3.75
Secondary school	19	23.75
College/university	19	23.75
No response	4	5.00
Total	**80**	**100**

Source: Field Work, 2010

Inquiry into levels of education for household members other than the household heads was done. Table 4-4 shows that the respondents had diverse levels of education: 105 persons (24.23%) had completed secondary level of education, 99 (22.91) % had not completed primary level of education (either on-going or dropped out) while 94(21.67%) have completed primary level of education.

Table 4-4: Household members' levels of education

Level of education	Frequency	Frequency of level of education as a percentage of total
incomplete primary	99	22.91
primary school	94	21.67
incomplete secondary	58	13.49
secondary school	105	24.23
college/university	76	17.70
Total	**432**	**100%**

Source: Field Work, 2010

A further 76 (17.70%), had completed university/college. In comparison to the 2005 survey of Machakos County indicated up to 62.8% enrollment (KNBS 2009:66) in primary schools. Whereas the enrollment and completion of school level may vary, the study indicates that most children had opportunity to join school but 23% dropped out. The secondary school data indicates an 18 % enrollment rate (KNBS 2009:68) the study shows a much higher secondary school completion percentage – 41.93 %. This is explained by the fact that other communities in Machakos have far fewer schools and cost of education was lower owing to proximity of secondary school in the County. (Kenya 2005:7)

4.3.2 Natural capital

In Embui sub-location land was seen as the main natural capital available. Table 4-5 shows the responses household heads provided when asked about household land ownership. Overall, all households had access to certain amount of land with 45 households (56.3%) accessing 1-3 acres and 18 households (22.5%) had access to 4-6 acres.

Table 4-5: Sizes of household land ownership

Size of land in Acres	Frequency	Frequency of Land size bracket as a percentage of total
0-1	2	2.5
1-3	45	56.3
4-6	18	22.5
6-9	8	10.0
10-12	6	7.5
over 12	1	1.3
Total	**80**	**100.0**

Source: Fieldwork 2010

The study revealed through focus group discussion that the land was owned and had been obtained by inheritance from parents with and the semi-structured revealed that only 3 respondents having bought land. In comparison, Burke and Jayne (2010: v) indicate that median land ownership size in Kenya is 2 acres, in comparison the median value in Embui was 2.5. When asked about the average land ownership key informants were quick to point out that even with greater parcels than the national average there was a general trend that in higher agricultural potential areas, land sizes were smaller.

Table 4-6: Land use patterns by household in Embui

Land Use	Frequency	Percentage of households that put land to this use
Agriculture/Animal Rearing	79	98.8
Animal Rearing Only	1	1.2
Agriculture Only	0	0
Total	80	100

Source: Fieldwork 2010

Household heads further informed that 79 households (98.8%) used their land for both grazing and farming and only 1.2% (1 household) kept animals on their land and did not grow any crops (see Table 4-6). This land use pattern confirmed the community to be agro-pastoral.

In rural communities access to productive assets is key to achieving sustainable livelihoods, given the limited off farm incomes and low economic growth in the area. Land is a key determinant of a household's livelihood status.

When household heads were asked about average productivity per acre their responses indicated that an average of 3 to 3.5 bags of maize was yielded per annum in two planting seasons. The bags are usually 90 Kg and thus the production is around 0.31 MT to per acre per annum. The farms which had been terraced, well weeded and practiced compost heaping as well as cow dung manure, as noted through observations and key informant interviews, recorded higher yields - up to 0.5 MT per acre. The average productivity of the land in Machakos was estimated at 1.2 MT ha (Mortimore et al 1993) on the better off farm plots and was similarly attributed to terracing. The productivity in Embui is thus much lower than the County average likely attributable to the fact that County statistics included higher potential highlands in the County. The size of land owned by a household did not always lead to extra production rather it was the investments done on the land discussed below. The intensity and spread of the bi-modal rains varied from one season to another and even though the study subjects indicated that the long rains brought better yields than the short rains, the findings showed that when either the short or long rains were good a good harvest was in the offing. The only exception was the harvesting of the pigeon pea planted in October and harvested in June/July. To have a significant pigeon pea harvest, focus group discussions in complete agreement indicated that that both seasons had to be favorable.

When asked about land productivity in Embui, the key informants and focus groups responded that this is varied and often depends on how much inputs and efforts a land owner will add. They clarified that this could vary from compost heaps and manure to artificial fertilizers and use of hybrid seeds. The conservation efforts also contributed to the productivity of a piece of land. The

study through observation and inquiry noted that parcels of land that are fenced and terraced had better crop establishment[1] than those which did not.

4.3.3 Financial Capital

Table 4-7: Financial Assets Owned by Households

Types and numbers of assets owned by households									
Number of asset owned	**Cattle**	**sheep &goats**	**iron sheet roofed houses**	**water tanks**	**Motor vehicles**	**bicycles**	**Motor cycles**	**chicken**	**other farm animals**
1-2	25	16	34	22	7	49	5	8	8
3-4	19	12	31	1		1	0	12	4
5-6	9	11	4	1			0	7	0
7-8	1	7	0	0			0	9	0
> 8	4	11	1	0			0	39	0
	58	57	70	24	7	50	5	75	12

Source: Fieldwork, 2010

Household survey results showed that different households held different types of assets as shown in Table 4-7. When household heads were asked about the asset holding their responses revealed that on overall 58 households owned cattle with majority (25) owning 1-2 cattle, 57 owned goats and sheep evenly distributed along the studied ownership brackets. 70 households had corrugated iron sheet roofed houses with 31 of them having 3-4 such as houses in their homesteads. Water tanks were limited to 24 households of which 22 households had 1-2 tanks, 1 3-4 and 1 household 5-6 tanks. 7 households had motor vehicles, 5 had motorcycles all in the range of 1-2 per household. 49 households had 1-2 bicycles with 1 having 3 bicycles, 75 households had chicken reared by free-range method with 39 having over 8 chicken. Other animals namely ducks and pigs were held in 8 households (1-2 heads) and 4 households had 3-4 animals. Focus group discussions indicated that chicken meat and eggs were the main source of animal protein followed by milk.

Further investigation to where households obtained their cash incomes was done. Household heads were asked about their total household cash income disaggregated by sources and total monthly income. This was a sum total of household incomes and not the household head's only. Table 4-8 summarizes in percentages what their responses were as regarding their sources and levels of income

[1] The study was done in December during the third month of the short rains season during which maize and legume crops commonly grown have already closing in on maturity and flowering.

Table 4-8: Income levels and sources

Total monthly from all sources (Kes)	Aggregated sources of income by % of households deriving income source							
	Sale of farm produce	Formal employment	Relatives support	Casual Employment	Non-farm trade	Shares	Apprenticeship	Loan
0-1000	2	0	22	3	0	0	9	5
2000-3000	35	0	10	25	9	8	6	7
4000-7000	25	0	25	4	20	5	14	10
8000-10000	2	3	0	3	0	10	0	0
11000-15000	3	2	0	5	0	0	5	0
15000-20000	5	8	0	0	8	0	0	0
21000-30000	6	9	0	0	1	0	6	1
over 30000	2	9	0	0	0	0	0	2
	80	31	57	40	38	23	40	25

Source: Field Work 2010

Table 4-8 above shows that Embui has a diverse range of income sources and levels. Sale of farm produce is among the key sources of income with all households interviewed selling off some produce, the next most popular category was the support from relatives from which 57 households gained some income even though the levels of support were confined to less than 7,000 Kenya Shillings (Kes) a month. The least popular category was loans and share with only 25 and 23 households respectively reporting these as a source of income. The median category is the Kenya Shillings 4000-7000 groups. Given the average household size of 5.4 and the average income to be 5,700 KES per month, the daily household income on average is Kes 190; about $ 2.34 (Central Bank of Kenya 2011) per five persons. Notably formal employment doesn't apply to those earning below the 8,000 Kenya Shillings level mainly because of the minimum wage rate set by government of Kenya being 7,334 Kenya shillings (Standard Media:2011). Casual employment on the other hand provides most of the income for those below 8,000 KES a month. Of interest is that people with higher incomes (over 21,000 Kenya Shillings) derived greatest incomes from shares, cooperatives, non farm trade and loans. These sources are out of reach for poor households as they need investment, collateral and trust from the loaning agencies which can only be afforded by the relatively better off.

This data presents a dire situation because by World Bank definitions individuals below 1 US$ (Kes 81.2) are in extreme poverty. This would mean that an average family income of Kes 10,000 a month per household is enough to make it above the poverty line. In Embui this number is 75%

of the households, with the County average at 59.6 % (Kenya 2011) Embui is one of the less endowed sub-locations of Machakos County. Key informants were asked about what they considered as the reasons as to why incomes in Embui were low. They replied that lack of opportunities to invest outside the traditional crop farming and animal rearing, and reducing land sizes and their productivity were the key drivers. Household expenditure patterns not only point to priorities but also can explain the situation of the community on the basis of the percentages of their incomes spent on particular items. Table 4-9 summarizes the percentage household expenditure averages

Table 4-9: Expenditure levels by household

Range of expenditure (%)	Number of Household Reporting this Range of Expenditures					
	Food	Education	Clothing	Medicine	Water	Others
0-10	5	15	53	57	53	50
11-20	28	23	23	17	20	20
21-30	20	22	4	5	7	8
31-40	12	10	0	0	0	0
41-50	10	7	0	1	0	0
51-60	1	2	0	0	0	2
61-70	3	1	0	0	0	0
81-90	1	0	0	0	0	0

Source: Field work, 2010

The study inquired of household heads on their expenditures on basis of key items and percentage of their total expenditure that each item represented. The household head responses are as shown in Table 4-9 households spent the larger part of their revenues on the range between 11-30%. Food and education cost 45 or more (60%) households, 74 households had expenditure on medicine but limited to 0-20% bracket. Food and education cost 15 and 10 households a staggering 40% or more of their incomes. The ‘others’ category included expenditures such as transport to County headquarters on various errands, social support to neighbors and relatives, membership fees for social groups such as burial and village welfare groups and family savings and support kitties, fundraising activities such as church projects, school and other community development projects in addition to educational, wedding and medical and funereal bills for community members consumed quite a substantial amount of their income.

These results are representative of a consumer community and placed side to side with Table 4-8 is indicative of a situation where little room for savings or investments exists. Households barely can provide for basic needs. The ability to invest, diversify and sustain productive assets is often a product of access to extra financial resources or assets that can easily be converted to cash. Whereas land could be treated as part of financial capital, the sale of land was highly undesirable as determined from the focus group discussions and therefore not included here. Focus was laid on animals and other domestic assets. Smaller ruminants mainly goats and sheep are a key asset in the community as not only are they easier to rear but are often faster to dispose and less affected by seasonal weather patterns as well as droughts. Those able to get well-paying jobs outside the community, set up businesses, engage in sale of handicrafts or have a certain skill like veterinary or blacksmiths have been able to break beyond the barrier and can invest. Qualitative data collected from FGDs informed that some of these households own property outside Embui, some have invested in public transport and are seen to be beyond the day to day livelihood challenges that plague the rest of the community.

4.3.4 Social Capital

In determining the status of social capital, the study looked at various social groupings that households and their members belonged to as shown in Table 4-10. Household heads indicated that the most common social capital was churches, attended by 59 households (74%), self-help groups with 53 households being members (66%) and active customary and traditional groupings having 47 households as members (58.8%) others included a cooperative society for 16 households (20%), 17 households being members of savings and loan (21.25%) and 7 households (8.75%) belonging to other categories.

Table 4-10: Household membership and participation in social capitals

Household membership of social group	Cooperative Society	Savings &loan	self help group	Church Group	active tradition /village	other social capital
Number of households with members belonging to group	16	17	53	59	47	7
% of participants	20.00	21.25	66.25	73.75	58.75	8.75

Source: Fieldwork 2010

Key informants and focus groups were asked on how important they felt the social groups were. Their responses were uniform and agreement pointed out that social groups were concerned about member's welfare, supporting households in burials, expensive medical costs, weddings, educating children and providing food and clothing for destitute families. The key informants further alluded that the fact that they were voluntary and not formal structures with obligations meant that the choice on which group to belong to, level of effort and resources committed often varied and so did the functioning of the groups both organizationally and in ability to support members.

Focus group discussions on the issue of social capitals available in the sub-location revealed that the other more formal social systems like cooperatives, savings and loans which were able to provide not just support in hard times but skills and opportunities for economic development of households. Key informants however pointed out that these groups were rather rudimentary and not very functional owing to low management and organization skills. Many households indicated that access to these formal grouping was also limited to those able to afford some money to contribute to monthly giving (on average 1,000 Kenya Shillings a month) of which a meager 5% of the community could afford to pay.

Nonetheless the church groups, self-help groups and active customary and tradition groups were identified by the focus groups to have helped households by providing support to labor deficient households according to key informants. Focus groups identified the social groups as a source of emotional support on rapid onset household emergencies such as deaths and illnesses. The church,

self-help, customary and traditional groups were credited with being able to provide support to member households to pay school fees, support other social activities such as weddings and in instances legal fees and even raised funds to pay court fines for their members. Key informants clarified further that memberships are often voluntary and even the agreed on little contribution as low as 10 Kenya Shillings per month are defaulted on. It is however the support that is received when need arises that keeps these groupings going.

4.3.5 Physical Capital

Physical capital affords a household an opportunity to develop its other capitals. The structures identified in the community included schools, health facilities, (boreholes) access to water, and cattle-dips among others.

Household members' access to assets was investigated with a focus on distances household members had to travel to access a facility. When asked about the main physical assets and the distances household members had to travel to access the facility, household heads provided variant responses as follows. More than 51 had access within one kilometer of a school and only 3 households were beyond 3 kilometers. Health facilities were also accessible within 4-5 kilometers for 47 households and 13 households having to travel more than 5 kilometers. Boreholes were found to be within 2-3 kilometers for majority of households, two cattle dips in the sub-location were for most households reachable within fifty six households. Asked about access to tractors and sprayers most households indicated that they did not use them owing to costs and small land pieces owned. However, they identified the distances to the nearest ones. A majority of households were within 3-5 kilometers of the tractors and sprayers. An analysis of distances traveled to the nearest facility was done and the results are summarized in Table 4-11.

Table 4-11: Distances households travel to access a physical asset

Distance	School	health facility	Borehole	Cattle dip	Tractor	Sprayer
0-1km	51	7	14	5	0	0
1-2km	9	7	8	9	0	0
2-3km	11	13	53	2	0	7
3-4km	5	7	2	3	32	73
4-5km	1	47	2	56	40	0
Over 5km	3	13	2	5	8	0

Source: Fieldwork 2010

When inquiry was made into how much value the community attached to the distance from community to a facility as compared to the presence and accessibility to the facility itself the key informants and focus groups were unanimous in stating that the time spent to access a facility is as important as the presence of the facility itself. This they clarified was related to the costs incurred in accessing the facility which when high was forbidding for some of the communities.

When asked about access to physical assets, key informants and focus group discussions informed that the availability of physical infrastructure in the locality does not always guarantee its use, user fees, distances, clan, political and social class dynamics often determine whether a household will use them. Key informants clarified that most infrastructure were built for communal use and had taken stock of reasonable fees. Tractors and sprayers were only exceptions as they were privately owned and accessible only to wealthier persons who had bigger tracts of land. Socio-political constraints did not limit access to communal assets.

Focus discussion groups asked about the key challenges in utilizing communal assets pointed at management of communal assets as the biggest challenge. One focus group identified an instance when a viable borehole was out of service for up to two years 2008-2010 owing to the mismanagement of funds and low managerial capacity of the communal committee set up to manage its operations. Other physical infrastructure identified through the observation was a good tarmac roads that cuts through the sub-location, a national power grid where some well to do community members had bought private transformers and received electric power on their houses, focus groups alluded to being able to sell milk at a local dairy in neighboring Wamunyu town about 7 kilometers away.

4.3.6 Livelihood Vulnerability level

Inquiry was made around known natural calamities that have impacted the community in the past as understood from the field testing work and literature review. The study requested household heads to classify livelihood shocks as increasing in frequency and severity. Their responses informed that 67 (83.8%) households viewed the increasing frequency droughts as one of the main risks they faced, 63 (78.8%) households cited increasing food prices, 27 (33.8%) increasing

incidence of epidemics, 24 (30%) increasing cases of animal diseases and 20 (25%) increased insecurity. Table 4-12 represents the trends of the shocks over the last since 1980 in Embui.

Table.4-12: Trends of livelihood shocks in Embui Sub-Location

Change	Percentage of household reporting the trend.									
	Animal disease		Droughts		Food prices		Epidemics		Insecurity	
No changes	16	20.0%	0	0.0%	14	17.5%	26	32.5%	30	37.5%
Increasing	24	30.0%	67	83.8%	63	78.8%	27	33.8%	20	25.0%
Decreasing	40	50.0%	13	16.3%	3	3.8%	27	33.8%	30	37.5%
Total	**80**	**100%**	**80**	**100%**	**80**	**100%**	**80**	**100%**	**80**	**100%**

Source: Fieldwork 2010

When households heads were asked about the trends of natural disasters, their responses indicated that there was consensus in opinion that that there was presence of regular (every 5-10 years) drought while 50% agreed that there were animal diseases in Embui. These two combined contributed to the prevalence of the second most important shock, food prices which were identified by 96.2% of respondents as either increasing or as present.

Finally enquiry was made into the impact that the shocks had on households and on a scale of low, medium and high. Table 4-13 summarizes these results

Table 4-13: Impact of natural calamities

Impact of natural calamities	Number of households reporting the level of impact				
	Droughts	Animal disease	Increased food prices	Human disease epidemics	Insecurity and banditry
High	64	26	53	26	14
Medium	15	37	12	29	33
Low	1	17	15	25	33
Total	80	80	80	80	80

Source: Field Work, 2010

When asked about the impact of shocks on households, the household heads responses indicated that the impact of droughts was perceived as high by 64 households (80%), animal disease to be medium 37 (60%), while the impact of increased food prices is 53 (66.22%). The impact of human disease, insecurity and banditry was been mostly low to medium by 66 (83%) of the

respondents. With the low incomes levels depicted earlier, its notable that a good percentage of the community incomes are spent in the mitigation of these calamities. Disease epidemics were fairly split along no change, increasing and decreasing.

The trends were also confirmed from qualitative data collected through key informant interviews and focus group discussions who when asked about their perception of frequency occurrence and severity, droughts and food prices were ranked highest. They mentioned others like insecurity, animal and human diseases even though their severity was indicated as varied across wealth groups.

Key informants were asked on their understanding of the significance and ideas on how to address the shocks besides droughts and food prices. In response they informed that: (1) human diseases have reduced owing to increasing information and information on primary health care and health seeking behavior of households, incidence and severity of outbreaks was significantly reduced: (2) Insecurity was seen as an issue for the wealthy groups whose investments and property was at risk and therefore only this group of people thought it was an issue.

4.4 Livelihood Opportunities and Challenges

The community has its livelihoods influenced by a number of formal and informal structures, rules and regulations, key informant interviews and focus groups were used to identify them. The key informants were asked to describe the structures that support livelihood endeavors in Embui.

In response, local government structures were identified by key informants as among the most significant with the Sub-Location Head also known as the Assistant-Chief being singled out as the most important. He was seen as the first point of contact when there was crime; he disseminated government policy, issued verbal permits for meetings and gatherings and was seen as the main link to central government. However his role did impact on choices of livelihood strategies save for his involvement in security and ensuring prohibition of environmentally unfriendly practices such as charcoal burning and wood felling though most key informants was felt that this was not a role he executed effectively, especially because he lacked the enforcement ability and could only report to the location chief in Masii.

Additionally, the key informants identified other important structures in the sub-location as the development committees within villages and at sub-location. These committees came up with ideas on how to further development in the area, however their acceptance, capacity and ability to influence a meaningful development agenda has been limited. Many of these committees were seen to serving the needs of the better off. There were complaints around where this or that borehole was placed and often in proximity to a wealthier person's homestead. Management of any resources of communal resources was disputed and little accountability for incomes and use of these resources existed. This led to reduced trust and ownership and many communal assets would go for years in disrepair or functioning below optimum until fresh support was injected often by politicians during electioneering periods.

When asked about the structures, the focus group discussion members mentioned that the traditional clan system (*Mbai)* and code of conduct (*Kithio)* imposed certain regulations on people's interactions such as who could Who could marry who, what fines applied for what offences, how the community should treat those who dishonor their elders, how to resolve land and other disputes and how much to pay for dowry. The household heads and mainly the elderly noted that the role and power of these structures is gradually losing its influence and many have distanced themselves preferring the formal judicial processes and constitutional laws.

4.5 Recommended Strategies for Livelihood Improvement

When the focus group discussion members were asked about the way the community was working to improve their livelihoods, they identified the common approaches as: informal trading in vegetable and other wares in nearby towns, diversifying crop varieties with some including vegetable and fruit farming for sale, handicraft making mainly wood carving and weaving and finally younger people moved out of Embui in search for greener pastures elsewhere in big cities such as Nairobi and Mombasa.

Key informants in addition to the response provided by the focus groups on livelihood strategies argued that, without land and extra income for diversification, resident of Embui remain prone to the droughts and other shocks. The key informants clarified further that, households often resorted to reducing food eaten in terms of quality and quantity, withdrawing children from school, selling

off animals and in extreme cases land, burning charcoal theft and banditry. These coping mechanisms left such households poorer and recovery was not guaranteed.

4.5 Recommendations for improved livelihoods opportunities

Focus groups were asked to provide some key areas of focus and support that could assist communities to improve their livelihoods and in response priortised on five areas where they wanted to see improvement and felt would have the most positive impact. These were: (1) efforts at improving direct cash income was identified by 70% of the community this includes labor and wage opportunities: (2) improved natural resource base was identified by 67% of the respondents: (3) improved access to social services was identified by 60%: (4) improved food supply by 58% of the respondents and (5) reduced vulnerability through interventions that cushion the community against natural and man-made shocks by 41%

On income levels the focus groups and key informants explained that increased employment opportunities should be created to enhance the level of incomes in the community. Governance on community incomes especially self-help groups should be improved for profit maximization.

Further discussions with key informants on areas of support that could help improve livelihoods identified, that the community vulnerability to food scarcity and diseases could be reduced by adoption of drought resistant crops and a change to better technologies of food production like irrigation. Another recommended strategy by key informants was the reforestation and conservation of the natural resources. This natural resources conservation approach would lead to reduced soil erosion, increased soil fertility and food production.

Key informants further proposed support to small scale farmers with inputs for higher value crops, increase in the number of boreholes and season dams to increase irrigation capacity. Ongoing research into drought resistant crops was also suggested and so was improved government service reach including extension services and marketing support. The community seeks support to stimulate its local economy and afford its residents income generating and employment opportunities

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Introduction

This chapter concludes the study by summarizing the first four chapters and drawing conclusions of the research with focus on those areas that have policy implications and puts forward suggestions for further research.

5.2 Summary and Conclusions

Rural communities around the world continue to contend with the challenges of improving their livelihoods. Finite resources have brought on the need to ensure that development efforts are done in full appreciation of the environment and limitation of resources. This places the already stretched communities in a dilemma. This study focused on a small community and investigated the livelihood situation, challenges, and opportunities in Embui. It sought to provide answers to the following questions: (1) What are the present livelihoods of the community in Embui? (2) What are the livelihood opportunities and challenges for the community in Embui? And: (3) What recommendations on livelihoods strategies can be made to the community in Embui in order to improve their livelihoods? The quantitative and qualitative study made inquiry into household livelihoods and analyses them on the basis of the sustainable livelihood framework of analysis. The findings and conclusions are summarized by research questions.

5.2.1 What are the present livelihoods of the community in Embui?

The study characterized the livelihood of Embui residents along the livelihood capitals namely, human, financial, physical, natural and social. Education levels are still low and limited incomes have resulted in school drop outs even though the community fully appreciated the need for education. Land remains the most central resource for a rural community and in Embui average land holding stood at 2 acres. Its productivity was largely dependent on the ability of farmers to incorporate optimal production techniques, and avail inputs to improve yields.

Farm produce was the most popular source of income but the income was limited to a monthly average of Kes 200. The households that had access to salaried income enjoyed greater incomes

reaching up to Kes 178,640 in one household, however on overall, the community remained at an average Kes 40.5 per person per day substantially below the World Bank defined poverty lines.

With the bimodal rain pattern in the area and rains being received for only 3-5 months in a year, the community members walk for long distances in search of clean water for domestic water especially during the dry seasons. Other physical assets such as schools, health posts and cattle dips were generally available within 5 kilometers of households and their utilization was only limited by ability to pay user fees.

A significant number of households were engaged in social groupings. These groups are however still rudimentary and lack critical skills that could be used to better their members' status. Income levels in Embui vary however over 75% of households live below the poverty line.

5.2.2 What are the livelihood opportunities and challenges for the community in Embui?

Even with limitations in resources and proneness to hazards, some households have proven that engaging in diversified income sources provides improvements in income sources and economic status. The following structures came out as the main transforming structures that the community interacted with: (1) The presence of a local government administration that aided in dispute resolution and provided a channel of voicing interests to the higher levels of government at District and County levels, and: (2) The continued existence of the traditional code of conduct and leadership is seen as an enabling structure that allows people to coexist, support each other and avoid resource and other conflicts and negative behavior.

Further to the structures identified, the following assets were identified as assets that would be useful in improving the community's economy by increased production and marketing.

1. The presence of the tarmac road cutting across the sub-location provided a good opportunity for marketing of products,

2. Availability of a relatively high water table was seen as an opportunity to sink boreholes to provide water for cash crops- mainly fruits that do well in climates such as Embui as shown by those that grew them,

3. Access to hydro-electric power that cuts through the sub location which provides power for local factories that could process crops produced in the area adding value and providing local skilled labor with job opportunities, and

4. A modern milk collection and processing plant in nearby Wamunyu town has aided in the sale of milk for those households that kept hybrid cattle adapted to the hot and dry conditions. The households reared these cattle relied on maize stalks and grass and some little fodder grass supplementation to feed the animals and thus not much inputs are required.

Limited reach of quality government services was identified as a major hindrance to production. Agricultural and animal production extension services did not reach the community; market information and support for marketing was also scanty and often farmers made choices based on the daily information available from informal networks. Without medium to long-term-forecasts on market prices, rainfall and attacks by pests and diseases, the community is often prone to the negative vagaries of nature.

On the flipside the community is faced with some challenges, the key ones are:

(1) The proneness to droughts, and consequent limited production that has led to increased reliance on markets for daily food which in turn have recently seen remarked increase in prices were identified as key challenges to the community's well-being.

(2) Animal and human diseases as key areas of concern to the community.

(3) Insecurity and banditry are of concern too by some of the well to do members of the community. In some instances, the community has missed out on investments because some potential investor was not comfortable with the level of security for his own staff and family or the capital goods. This is attributed to high level of school drop-outs and limited economic and occupation opportunities.

5.2.3 What recommendations on livelihoods strategies can be made to the community in Embui in order to improve their livelihoods?

The study points to potential for the households in Embui to improve their livelihood status. Education levels of the households emerged as a key determinant of the household's well-being. To achieve improvements in education levels, higher quality schools and lower fees are called for; subsidies from the government would go a long way in improving education status. The free primary and secondary education envisioned by the Government were seen as a great step in the right direction.

On-going research on livelihoods in dry lands alludes to need to keep the understanding of possibilities current, soil erosion control, disease resistant crops and animals which can withstand long periods of moisture stress and pasture availability. The desire to invest is also linked to output and benefit from farms, thus better prices through an increase in market information, local processing and packaging is likely to see greater investments in land.

The study proposes efforts be enhanced towards the stimulation of the local economy from a user to a producer economy which will go a long way in enhancing livelihood status. The processing of milk, cereals, fruits, hides and skins are some of the areas seen as clear option, the presence of good road and hydro-electric power lines in addition to presence of high underground water table provide the basic resources needed to get the Embui community and its neighbors on the footing towards developing local industries. This would provide more employment opportunities for the locals and stimulate further investments as household incomes increase.

Diversification of income sources is already being undertaken by the community as a livelihood strategy. With over half of the studied households indicating that incomes from working relatives, apprenticeships, and non-farm trade, equal focus on how to support and enable these alternative incomes is requisite. Support at local level to improve quality of artifacts as well as marketing through fairs and exhibitions at county and national level could enhance the incomes from the alternative sources.

5.3. Policy Implications

This section puts forward five options for policy makers and development practitioners that could result in a sustainable livelihood security in the community based on the findings from the study.

The government at National, County, District and Community level has the task to look at the challenges facing the community and formulate programs and policies that help the Embui sub location get on track for long term sustainable development. Investments in education that reduce costs of education for the rural households are called for. This could be done by improvement in quality of education in the available schools that don't require parents and students to travel long distances. The recently introduced free primary education program has eased the burden on individuals and needs to be expanded to cover secondary schools education.

Decreasing plot sizes down the generations, increasing costs of productions and climatic changes have rendered many households unable to provide for their needs from the traditional agro-pastoral way of life. As noted in chapter two, the ability of a household to diversify income sources depended on the ability of households to gather some financial to invest in this new endeavors. Development scholars and government planners alike have the task to identify and consider other livelihood sources, research and support to fledgling income generating options.

Marketing linkages and information for handicrafts, fruit, vegetable growers and milk production need to be enhanced so as to obtain the best prices and thus stimulate further production. Increased production would lead to establishment of processing plants nearby that would reduce the costs and wastage of perishable commodities especially during the seasonal gluts. Similarly enhanced veterinary advisory services for animal rearing, marketing information and breed selection would go a long way in reducing the vulnerability of the community to loss of animals when epidemics occur. Intensification of research into drought resistant crops and moisture and pasture stress adaptable breeds of livestock and animal husbandry practices is paramount in addition to a robust extension services provision.

To safeguard natural resources especially vegetation and to increase land productivity, the need to revamp efforts to conserve these resources cannot be overstated. Agro forestry is an approach that has been used elsewhere to ensure that farmers can grow and benefit from trees without

destroying them. Stricter controls on the harvesting of sand and burning of charcoal should be implemented to reduce the loss of the natural resources. Alternative sources of income should be further explored to reduce the over reliance on these resources.

It is suggested that formal training and capacity support should be provided to social groupings to help them improve on their members' welfare. Efforts should be made to enhance the growth of productive groupings such as cooperative societies which are a source of ready and available loans for investment and increased economic growth. This would go well with the promotion of saving and loan activities for community members as a source of cheap credit. In addition the community needs to be supported to increase access to financial capital to allow for investment in innovative ideas and strengthen the income levels through better and advanced investments.

5.4. Areas for further research

The study exposed the need to formulate workable solutions that enable a community move from its traditional production systems to enhanced income generation activities that take into account the changing climates, land sizes and global economic conditions.

The study area is a resource deficient area but besides suggesting increased investment of resources, the study has highlighted concerns about land use and management; income sources and their levels and limitations in wellbeing improvement. It has further identified the existence of a direct linkage between investing in education and overall improvement in living standards for a household. However whereas education, employment and income have a direct relationship, the reason why many households don't invest in children's education are themselves not so direct. The choice by households to invest and in what quantities, in education, as well as other basic needs such as health and food are all determined by availability of cash to provide for the needs. The willingness and appreciation of the need is one thing but the ability is the other side of the coin and that is where many residents of Embui find themselves.

Interaction between the community and government policy is limited and thus many of them were not aware of the existing services and policies related to health, crop production and animal production. Thus there is a need to look at the level of reach of government policies and services with micro-communities. This study could be coupled with a clear description of what those

policies that the Government has in place for communities and what the dissemination and implementation mechanisms are.

Another area identified in the study was the level of success of those people who moved to urban centers in such for work and trade opportunities. There was no consensus on their successes or usefulness to their families who are left in the villages. A research work could be designed to determine their levels of income, living conditions and outcome of this migration.

Bibliography

Babbie E, Mouton J. 2001. *The practice of social research.* Cape Town. Oxford University Press Southern Africa.

Bidwai P. 2006. From what now to what next: *Reflections on three decades of international politics and development*. Development Dialogue June 2006 –What Next, Volume 1. Uddevalla. Mediaprint.

Blackmon P. 2008. *Rethinking Poverty through the Eyes of the International Monetary Fund and the World Bank*. International Studies Review.

Bratton M. 2010. *Citizens Perceptions of Local Government Responsiveness in Sub-Saharan Africa*. Afrobarometer.

Bruntland, G. (ed). 1987. *Our common future*. Oxford. Oxford University Press.

Campbell B.M, Jeffrey S, Kozanayi W, Luckert M, Mutamba M, Zindi C. 2002. *Household Livelihoods in Semi-Arid Regions: Options and Constraint*s. Indonesia. Center for International Forestry Research.

Carney, D. 1998. Sustainable rural livelihoods - what contributions can we make? Department for International Development, London.

Chambers, R, Conway, G. 1992. *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. Discussion Papers, 296. Cambridge. Institute of Development Studies

Chambers R. 1995.*Poverty and livelihoods: whose reality counts? Environment and Urbanization, Vol. 7, No. 1*. http://eau.sagepub.com/cgi/reprint/7/1/173 downloaded 2009-11-13

Cable News Network. 2009. Rain 'not enough' to end hunger in Kenya. http://www.cnn.com/2009/HEALTH/12/10/drought.kenya.ethiopia/index.html accessed 2010-03-15

Central Bank of Kenya.2011. Central Bank of Kenya – Exchange rates. http://www.centralbank.go.ke/forex/default.aspx. Accessed 2011-01-04

Chant S, Mcilwaine C. 2009. *Geographies of Development in the 21st Century: An Introduction to the Globa*l South. Great Britain. Edgar Elgar Publishing Limited.

Commission of Revenue Allocation (CRA).2011. Machakos County. Commission of Revenue Allocation. Nairobi

Cooper, D. & Schindler, P. (1998) *Business research methods*. 6th ed. Boston: Irwin/McGraw Hill

European Union (EU).2009. Community Development Project in Machakos District Kenya http://www.delken.ec.europa.eu/en/projects.asp?menuid=19&submenuid=61&ProjectID=8 accessed 2009-09-15

Ellis F, Allison E 2004. *Livelihood diversification and natural resource access*. East Anglia. Overseas Development Group

English J, Tiffen M and Mortimore M. 1994. *Land Resource Management in Machakos District, Kenya 1930-1990*. Washington DC. World Bank

Flick U. 2002. *An introduction to qualitative research.* London. Sage Publications Ltd.

Food and Agricultural Organization of the United Nations (FAO). 1993. Sustainable development of drylands and combating desertification**.** http://www.fao.org/docrep/V0265E/V0265E00.htm accessed 2010-03-03.

Francis E. 2000. *Making a living: Changing livelihoods in Africa*. New York. Routledge.

Goldsmith E, Allen R. 1972.*A Blueprint for Survival Ecosystems Limited*. The Ecologist

Haughton J, Khandker S. 2009. *Handbook on poverty and inequality*. World Bank. Washington, DC

Hussein K, Nelson J. 2000. Sustainable Livelihoods and Livelihoods Diversification. Brighton Institute of Development Studies Working Paper 69.

Ilia N. Sub Chief Embui Sub-Location 2009. Personal Interview. 18 August 2009

Inima A. 2012. Maps of the counties of Kitui, Machakos, Makueni, Kiambu, Murang'a and Embu. http://www.flickr.com/photos/albertkenyaniinima/6105839462/sizes/o/in/photostream/. Downloaded 2012-8-15.

Institute of Development Studies. 2011. Sustainable livelihoods research findings for development policymakers and practitioners. Brighton.

Karuma A, Charles K, Gachene P, Gicheru A, Mwang'ombe H, Mwangi D, Clavel J, Verhagen R, Kaufmann J, Francis W. 2011. *Effects of Legume Cover Crop and Sub-Soiling on Soil Properties and Maize (Zea Mays L) Growth in Semi Arid Area of Machakos District, Kenya*. Vol. 14 No1Tropical and Subtropical Agro ecosystems. Mexico

Kasperson, J, Kasperson R, Turner B. 1995. *Regions at Risk: Comparisons of Threatened Environments.* Tokyo. United Nations University Press.http://archive.unu.edu/unupress/unupbooks/uu14re/uu14re0l.htm accessed 2010-05-10

Kenya.1994. *Kenya forestry master plan: development programmmes*. Nairobi. Government Printer

Kenya.2003. Constituency Development Fund. Nairobi. http://www.cdf.go.ke/about-cdf

Kenya. 2004. *Investment Programme for the Economic Recovery Strategy for Wealth and Employment Creation 2003-2007*. Nairobi. Government Printer

Kenya. 2005. *Machakos District Strategic Plan 2005 - 2010*. Nairobi: Government Printer

Kenya National Bureau of Statistics (KNBS). 2009. Machakos District Multiple Indicator Cluster Survey 2008, Nairobi.

Knutson P. 2006: *The Sustainable Livelihoods Approach: A Framework for Knowledge Integration Assessment*. Human Ecology Review, Vol. 13, No. 1. Goteborg. Society for Human Ecology

Krantz L. 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. Stockholm: Swedish International Development Cooperation Agency.

Mbuva J. Former Head teacher Uvaini Primary 2010. Personal Interview. 21 August 2010.

Mortimore M., Tiffen M. Gichuki F. 1993. *Sustainable growth in Machakos* Nairobi ILEA Vol. 9 No.1

Mortimore M., Tiffen M. Gichuki F. 2004. *Sustainable growth in Machakos* London, Overseas Development Institute

Murton J. 1999. *Population growth and poverty in* Machakos District, Kenya The Geographical Journal, Vol. 165. London. Royal Geography Society.

Mwova N. 1985. Folktales of the Akamba People. Embui

Ochieng W, Ogot B.1995 *Decolonization & Independence in Kenya, 1940-93*. London. James Currey.

Odeny D. 2001. *Inheritance of Resistance to Fusarium Wilt in Pigeon pea.* Status and Potential of Pigeon pea in Eastern and Southern Africa. Andhra Pradesh. International Crops Research Institute for the Semi-Arid Tropics

Sen A. 1999. http://books.google.com/books?id=Qm8HtpFHYecC&sitesec=reviews *Development as freedom*. Oxford University Press. New York

Shaw I, Gould N. 2001.*Qualitative research in social work introducing qualitative methods series* v *113*. London. Sage Publications Ltd.

Silim S, Mergeai G, Kimani P, Baudoin J, Rubaihayo P Janssens M. 2001. *New Regional Initiatives in Pigeon pea Improvement in Status and Potential of Pigeon pea in Eastern and Southern Africa*. Andhra Pradesh. International Crops Research Institute for the Semi-Arid Tropics

Soubbotina T.2004. Beyond Economic Growth an Introduction to Sustainable Development 2nd ed. World Bank. Washington DC

Standard Media.2011.Government increases minimum wage by 12.5 per cent. http://www.standardmedia.co.ke/InsidePage.php?id=2000034291&cid=4& Accessed 2011-6-30

Van der Gaag J.2003. *From Child Development to Human Development.* University of Amsterdam. Netherlands.

World Vision. 2008. Annual Report Year Ended 30 September 2008. World Vision. Dublin.

World Bank. 2008. Kenya Poverty and Inequality Assessment. Volume I: Synthesis Report. World Bank. Nairobi.

Annex 1: United Nations Millennium Development Goals

Goals, targets and indicators

The internationally agreed framework of 8 goals and 18 targets was complemented by 48 technical indicators to measure progress towards the Millennium Development Goals. These indicators have since been adopted by a consensus of experts from the United Nations, IMF, OECD and the World Bank.

Each indicator below is linked to millennium data series as well as to background series related to the target in question.

Goal 1: Eradicate Extreme Hunger and Poverty

Target 1. Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day

Indicators

1. Proportion of population below $1 (1993 PPP) per day (World Bank) a*

2. Poverty gap ratio [incidence x depth of poverty] (World Bank)

3. Share of poorest quintile in national consumption (World Bank)

Target 2. Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Indicators

4. Prevalence of underweight children under five years of age (UNICEF-WHO)

5. Proportion of population below minimum level of dietary energy consumption (FAO)

Goal 2: Achieve Universal Primary Education

Target 3. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators

6. Net enrolment ratio in primary education (UNESCO)

7. Proportion of pupils starting grade 1 who reach grade 5 (UNESCO) b*

8. Literacy rate of 15-24 year-olds (UNESCO)

Goal 3: Promote Gender Equality and Empower Women

Target 4. Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

Indicators

9. Ratio of girls to boys in primary, secondary and tertiary education (UNESCO)

10. Ratio of literate women to men, 15-24 years old (UNESCO)

11. Share of women in wage employment in the non-agricultural sector (ILO)

12. Proportion of seats held by women in national parliament (IPU)

Goal 4: Reduce Child Mortality

Target 5. Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Indicators

13. Under-five mortality rate (UNICEF-WHO)

14. Infant mortality rate (UNICEF-WHO)

15. Proportion of 1 year-old children immunized against measles (UNICEF-WHO)

Goal 5: Improve Maternal Health

Target 6. Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Indicators

16. Maternal mortality ratio (UNICEF-WHO)

17. Proportion of births attended by skilled health personnel (UNICEF-WHO)

Goal 6: Combat HIV/AIDS, Malaria and other diseases

Target 7. Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Indicators

18. HIV prevalence among pregnant women aged 15-24 years (UNAIDS-WHO-UNICEF)

19. Condom use rate of the contraceptive prevalence rate (UN Population Division) c*

19a. Condom use at last high-risk sex (UNICEF-WHO)

19b. Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (UNICEF-WHO) d*

19c. Contraceptive prevalence rate (UN Population Division)

20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years (UNICEF-UNAIDS-WHO)

Target 8. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Indicators

21. Prevalence and death rates associated with malaria (WHO)

22. Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures (UNICEF-WHO) e*

23. Prevalence and death rates associated with tuberculosis (WHO)

24. Proportion of tuberculosis cases detected and cured under DOTS (internationally recommended TB control strategy) (WHO)

Goal 7: Ensure Environmental Sustainability

Target 9. Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Indicators

25. Proportion of land area covered by forest (FAO)

26. Ratio of area protected to maintain biological diversity to surface area (UNEP-WCMC)

27. Energy use (kg oil equivalent) per $1 GDP (PPP) (IEA, World Bank)

28. Carbon dioxide emissions per capita (UNFCCC, UNSD) and consumption of ozone-depleting CFCs (ODP tons) (UNEP-Ozone Secretariat)

29. Proportion of population using solid fuels (WHO)

Target 10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Indicators

30. Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF-WHO)

31. Proportion of population with access to improved sanitation, urban and rural (UNICEF-WHO)

Target 11. Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers

Indicators

32. Proportion of households with access to secure tenure (UN-HABITAT)

Goal 8: Develop a Global Partnership for Development

Target 12. Develop further an open, rule-based, predictable, nondiscriminatory trading and financial system

Target 13. Address the special needs of the Least Developed Countries

Target 14. Address the special needs of landlocked developing countries and small island developing states

Target 15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

Indicators

33. Net ODA, total and to LDCs, as percentage of OECD/Development Assistance Committee (DAC) donors' gross national income (GNI) (OECD)

34. Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) (OECD)

35. Proportion of bilateral ODA of OECD/DAC donors that is untied (OECD)

36. ODA received in landlocked developing countries as a proportion of their GNIs (OECD)

37. ODA received in small island developing States as proportion of their GNIs (OECD)

Market access

38. Proportion of total developed country imports (by value and excluding arms) from developing countries and from LDCs, admitted free of duty (UNCTAD, WTO, WB)

39. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (UNCTAD, WTO, and WB)

40. Agricultural support estimate for OECD countries as percentage of their GDP (OECD)

41. Proportion of ODA provided to help build trade capacity (OECD, WTO)

42. Total number of countries that have reached their Heavily Indebted Poor Countries Initiative (HIPC) decision points and number that have reached their HIPC completion points (cumulative) (IMF - World Bank)

43. Debt relief committed under HIPC initiative (IMF-World Bank)

44. Debt service as a percentage of exports of goods and services (IMF-World Bank)

Some of the indicators listed below are monitored separately for the least developed countries, Africa, landlocked developing countries, and small island developing states

Target 16. In cooperation with developing countries, develop and implement strategies for decent and productive work for youth

Indicators

45. Unemployment rate of young people aged 15-24 years, each sex and total (ILO) f**Target 17. In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries*

Indicators

46. Proportion of population with access to affordable essential drugs on a sustainable basis (WHO)

Target 18. In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technology

Indicators

47. Telephone lines and cellular subscribers per 100 population (ITU)

48. Personal computers in use per 100 population and Internet users per 100 population (ITU)

Annex 2: Key Informant Interviews Guidelines

TOWARDS LIVELIHOODS SECURITY: AN INVESTIGATION OF LIVELIHOODS CHALLENGES AND OPPORTUNITIES IN EMBUI SUB-LOCATION, MACHAKOS DISTRICT, KENYA

Once the subject is seated introduce the study and then invite them to share their opinions on the questions that you will ask them.

Thank you for agreeing to talk with me, and for your participation in this project. I anticipate the interview will last about 30 minutes, and appreciate any information you can provide. This interview is important for the success of this assessment, and it will serve to augment our understanding of the livelihood opportunities and challenges in Embui and recommend some solutions that will improve living standards of the residents.

Your answers are completely confidential and will be coded and recorded without names.

I understand that you are the _____ in the _____

Please focus on Embui in all your responses, and feel free to clarify anything I bring up that's not clear.

1. Common shocks and trends being witnessed and seasonal events that affect the household livelihood security:

2. What are common assets in the community on the following categories?

Natural Assets	
Human assets	
Financial assets	
Social Assets	
Physical Assets	

3. Discuss the various transforming structures that influence livelihood well being in your village.

4. What livelihood strategies are people in your village applying to improve their livelihoods, can they do more?

5. Discuss the trends in the community around

- Household incomes
- Living standards
- Reduced vulnerability
- Food security
- Sustainable use of natural resources

6. What recommendations do you have for improving the lives of residents of Embui?

Some Guidelines to Remember

- Allow the subject as much time and where they respond or veer to another question please do not stop them neither repeat the inquiry
- Allow enough time for responses and be precise in the questioning and seek confirmation that the subject has clearly understood.
- Jot down key responses and not in prose so that you can be sure to cross-check the completeness of the interview

- Do not spend too much time writing as to seem disengaged from the subject.

Annex 3: Focus Group Discussion Guidelines

TOWARDS LIVELIHOODS SECURITY: AN INVESTIGATION OF LIVELIHOODS CHALLENGES AND OPPORTUNITIES IN EMBUI SUB-LOCATION, MACHAKOS DISTRICT, KENYA

Welcome and introductions

Good morning and thanks for coming to talk with us about livelihoods challenges and opportunities in Embui. My name is ……. and these are my data recorders and scribes. We have been contracted by a person doing his studies in the sub-location. Besides his studies information gathered here may be used by development agencies to improve living standards in Embui.

My colleagues will take notes but we're also going to record the discussion so no ideas get missed. Can I just make sure that everyone's OK about that? Also, is everyone here because they want to be? If you've changed your mind it's okay to say so. OK, I'm now going to tell you a little bit about why we're here and what you can expect.

Our focus group discussion should last about an hour and a half. Once we get started we'll ask you questions and we'd like you to share your ideas / opinions. We'll leave it up to you to do most of the talking and we will do a lot of listening. We won't be giving our opinions. Remember we want to learn from you.

Please tell us if the discussion makes you feel uncomfortable at any time, or if you want to say something but don't want it to be recorded.

We'll ask one question at a time and wait for everyone to have a chance to answer. Please be respectful of each other's opinions. There are no right or wrong answers. It's okay to have a different opinion. Don't feel like you have to talk directly to us. Feel free to talk to each other. you can reply to something someone's said. We might ask people by name if they want to speak – just so we can be sure everyone gets a say.

Does anyone have any questions about why we are here or add any other points to our agreement or how the group should be run? *(allow for time to respond)* Before we begin with the first question –we'll go round the group and can everyone say their name.

Please help us to understand:

1. **Common shocks and trends being witnessed and seasonal events that affect the household livelihood security:**

2. What are common assets in the following categories of households in terms of:

Natural Assets	
Human assets	
Financial assets	
Social Assets	
Physical Assets	

3. Discuss the various transforming structures that influence livelihood well being in your village.

4. What livelihood strategies are people in your village applying to improve their livelihoods?

5. Discuss the trends in the community around

- Household incomes
- Living standards
- Reduced vulnerability
- Food security
- Sustainable use of natural resources

6. Do you have any recommendations which would help improve the livelihoods of the residents of Embui?

After a brief oral summary of the key responses received by the facilitator (Ask)

Is this an adequate summary? Have we missed anything?

Thank you for your time and for sharing your ideas with us today and for being so considerate and respectful of one another.

We will compile the results and share with the researcher who hails from this village and we are hopeful that besides the academic qualifications all the information you have provided will be used in design future development programs for the sub-location and beyond.

Thank You.

Annex 4: Household Semi-structured Questionnaires

TOWARDS LIVELIHOODS SECURITY: AN INVESTIGATION OF LIVELIHOODS CHALLENGES AND OPPORTUNITIES IN EMBUI SUB-LOCATION, MACHAKOS DISTRICT, KENYA

A. LIVELIHOOD CAPITALS

i. Human Capital

1. Enumerate the household members					
	Age [years]	M/F	Formal Education	Apprenticeship [if other specify]	Able Bodied [Y/N]
1.1 Household Head					
1.2 other above 25yrs of age					
1.3 other above 25yrs of age					
1.4 Other household member 1					
1.5 Other household member 2					
1.6 Other household member 3					
1.7 Other household member 4					

Level of education of each member in the other given			
Formal Education		Apprenticeship	
Incomplete Primary	1	Trade	1
Primary School	2	Weaving	2
Incomplete Secondary	3	Woodcarving	3
Secondary School	4	Medicine	4
College/University	5	Other	5

ii. Natural Capital

2. Does the household have access to any the following			
	[Y=1, N = 2]	[Acreage/other unit]	[To what use is it put to?]
2.1 Agricultural Land			
2.2 Grazing Land			
2.3 Market Center Plot			
2.4 Other [Specify]			

2.5 Any additional information on natural capital

iii. Financial capital

3. Where does the household get financial support from?			
	[Y=1, N=2]	[Monthly Average – KES]	[Annual Average]
3.1 Formal Employment Income			
3.2 Support by relatives			
3.3 Casual Employment			
3.4 Nonfarm trade profits			
3.5 Sale of farm produce			
3.6 Apprenticeships			
3.7 Loan from Credit/Self help			
3.8 shares or dividends from			
3.9 Other (specify)			

4. In percentages please identify what is the approximate use of your income	
Expense	**Percentage**
4.1 Food	
4.2 Education	
4.3 Clothing	
4.4 Medicine	
4.5 Water	
4.6 Housing	
4.7 Other Specify	

4.8 Additional information on financial capital

iv. Physical Capital

5. Does the household own any of the following and in what quantities		
	[Y=1, N=2]	Numbers
5.1 Cattle		
5.2 Sheep and Goats		
5.3 Iron Sheet Roofed House		
5.4 Water Tank		
5.5 Car		
5.6 Bicycle		
5.7 Motorcycle		
5.8 Chicken		
5.9 Other farm animals		
5.10 Other Specify		

6. Are these facilities are available in the village for communal use/hire?				
	Y=1 , N= 2	Type	Number	Distance from your house to the facility
6.1 Schools				
6.2 Health Facility				
6.3 Boreholes				
6.4 Cattle Dips				
6.5 Tractors for hire				
6.6 Sprayers for crops				
6.7 Other				

Characteristics of Physical Assets		
School		**Health Facility**
Pre-School = [1]	A	Clinic = [1]
Primary School = [2]	B	Dispensary = [2]
Secondary School =[3]	C	Hospital = [3]
Tertiary institution = [4]	D	Referral Hospital = [4]

6.8 Additional information on physical capital

v. Social Capital

7.Does the household head or any member belong to any of the following	(Y=1 , N= 2)	Briefly describe the society and foreseen benefit
7.1 Cooperative Society		
7.2 Savings and loan group		
7.3 Self help group		
7.4 Church group		
7.5 Active Traditional/Village/Clan/structure		
7.6 Other Specify		

7.7 Additional information on Social Capitals

B. Vulnerability Context

8. What is the vulnerability in the community and how does it cope?					
Shock, trend, seasonality	Frequency		Trend [1 increasing, 2 decreasing, 0 no changes	Impact	How does the community deal with the shock?
	Months	Years			
8.1 Drought					
8.2 Flood					
8.3 Animal disease					
8.4 Increase food prices					
8.5 Human diseases - epidemics					
8.6 Insecurity and banditry					
8.7 Other(specify)					

8.8 Any other relevant information volunteered

C: Transforming Structures and Processes

9. Please identify the following and state how they affect your livelihood?			
Structure/Process	Name	Impact [P/N]	How would these best support you
9.1 Institutions			
9.2 Organizations			
9.3 Policies			

9.4 Legislation			

9.5 Any other information volunteered

D. LIVELIHOOD STRATEGIES

10. Livelihood Strategies employed by household	
Activity/choice/approach. List top 3 only	Description – include clarification on what is actually done and how this results in improved livelihood
10.1	
10.2	
10.3	

E: LIVELIHOOD OUTCOMES:

Has the household witnessed changes over the last ten years in :		
Outcome	**Y/N**	**Why?**
11.1 Income levels		
11.2 Increased well being		
11.3 Reduced vulnerability		
11.4 Improved food security		

11.5 More sustainable use of natural resources		

2. Please briefly tell us what you think could be done to improve your livelihood security.

3. Do you have anything else to add?