

**INFLUENCE OF PARTICIPATION IN NON-FARM ACTIVITIES ON LIVING
STANDARDS OF RURAL HOUSEHOLDS IN CHEBORGE DIVISION, KERICHO
COUNTY, KENYA**

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**A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements
for the Award of Master of Science Degree in Community Studies and Extension of
Egerton University**

EGERTON UNIVERSITY

APRIL, 2014

DECLARATION AND RECOMMENDATION

DECLARATION

I declare that this thesis is my original work, and has not been previously published or presented for the award of a degree or diploma in any university.

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RECOMMENDATION

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DEDICATION

This work is dedicated to my husband Dr. Hillary Bett for his never ending support and encouragement and my children Katelyn and Wayne for their understanding.

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First, I would like to thank the Almighty God for strength and good health during the entire period of the research work. I also wish to express my sincere appreciation to Egerton University's Graduate School and the Department of Applied Community Development Studies for offering me a chance to pursue my postgraduate studies in this institution. Special appreciation goes to my supervisors, Dr. Milcah Mutuku and Dr. Susan Mwaniki for their technical advice, guidance, professional supervision, inspiration and unlimited support in the course of the research work.

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ABSTRACT

The number of people living below the poverty line in Kenya has continued to increase. This is attributable, among other things, to the declining agricultural output due to the rapidly changing climatic conditions and small farm sizes. Rural households have, therefore, diversified their income sources by participating in non-farm activities alongside small-scale agricultural activities (multiple job holding) to get basic needs. However, there is the question as to whether policy should focus more on agricultural activities or on non-farm activities. The key variables studied include non-farm activities levels of participation and living standards. The aim of this study was to determine the influence of participation in non-farm activities on living standards of rural households in Cheborge Division of Kericho County. The study was guided by the Sustainable Livelihood Framework. Cross-sectional survey was adopted. From a population of 5235 households, a sample size of 192 households was selected proportionately using stratified and convenient sampling. An interview schedule was used to collect data from household heads. Content and face validity was done by subjecting the interview schedule to experts from the Department of Applied Community Development Studies and the Faculty of Education and Community Studies. A reliability coefficient of 0.728 was obtained using Cronbach's alpha. Percentages were used to describe the living standards and the non-farm activities that households participate in. The Statistical Package for Social Science (SPSS) was used to compute the data. The t-test and chi-square tests were used to test the hypotheses at $\alpha = 0.05$. The findings show that majority (88%) of households were pushed into non-farm activities while only 12 percent were influenced by pull factors. Trading activities constituted the largest percentage of 52.3% with majority of households having a medium living standard. Findings show that 47.8% of households had low levels of participation while only 21.7% had moderate level of participation in non-farm activities. The χ^2 value of 1.747 is significant at $\alpha=0.05$ ($P>0.05$). Therefore, there was no significant relationship between levels of participation in NFAs and living standards. The calculated mean of living standards of households that participated in NFAs is 13.5 while that for households not participating was 12.98. The living standards of households that participated in NFAs were significantly higher than that of households that did not participate in non-farm activities. The study recommends that policy

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LIST OF ABBREVIATIONS AND ACRONYMS

FAO	Food and Agricultural Organisation
GOK	Government of Kenya
IFAD	International Fund for Agricultural Development
MDGs	Millennium Development Goals
NFAs	Non -Farm Activities
NGOs	Non Governmental Organisations
PRSPs	Poverty Reduction Strategy Papers
RNF	Rural Non-Farm
RNFAs	Rural Non-Farm Activities
RNFE	Rural Non-Farm Economy
RNFI	Rural Non-Farm Income
UN	United Nations
UNDP	United Nations Development Programme

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Despite the rapid process of urbanization observed in most developing and transition countries, poverty still remains a predominantly rural phenomenon (Carletto *et al.* 2007). The majority of Sub-Saharan Africa's population lives in rural areas, where poverty and deprivation are most severe (Diao *et al.*, 2007). Poverty in its various forms has increasingly occupied the attention of the international community during the last decade. Successive Summits have made commitments to reduce drastically the misery from which so many humans suffer throughout their lives. However, extreme poverty remains an alarming problem in the world's developing regions, despite the advances made in the 1990s (FAO, 2006).

In Kenya, high incidence of poverty coupled with stagnating or declining income growth are the two major challenges facing the country today. Close to 46 percent of the total population and nearly half of the rural population live below the poverty line defined as those living under 1 US Dollar per day. These meager incomes are incapable of sustaining any meaningful livelihood (Republic of Kenya, 2007). Increasing numbers of people are unable to access basic social necessities like health, education, clean water and housing due to this.

About 67% of Kenya's population lives in the rural areas and largely derive their livelihood from agriculture (Government of Kenya, 2009). This scenario has not only revived poverty reduction as a central development theme, it has further challenged policy makers to re-assess the viability of intervention points. This has left many questions as to the best strategies that should be used to deal with the problem, spurring numerous research interests and massive donor funds to be used. The fight against poverty, however, remains an elusive goal. Rising poverty levels have prompted the international community to develop and seek consensus on internationally agreed development goals to be pursued by governments. This led to the adoption of the International Development Goals and consequently the United Nations endorsed Millennium Development Goals (MDGs). At the same time, multilateral lending agencies also developed their own version of development goals that focus on poverty alleviation strategies like the Poverty Reduction

Strategy Papers (PRSPs) (GOK, 2005). However, these policies have not clearly addressed the contribution of non-farm activities. This study may be necessary in the design of appropriate poverty reduction strategies.

Agriculture has been the focus of poverty reduction strategies in the rural areas of Kenya where the majority of the population resides (GOK, 2002). However, rapid population growth and subdivision of land along inheritance lines has resulted in very small farm sizes. Furthermore, in densely populated regions, there is now major concern that land may have become too small to make any meaningful contribution to household incomes (Marenja, Oluoch-Kosura, Place & Barrett, 2003). This land scarcity suggests that agricultural activities may not remain the only or even the main source of income and therefore rural households may not climb out of poverty through growth in land productivity alone. Rural households engage in non-farm activities as a way of diversifying their income sources.

There has been an outstanding trend of income diversification in rural areas in developing countries such as Kenya (Demurger, Fournier & Yang, 2010). Rural non-farm earnings accounts for 30% to 45% of rural household income across the developing world (Haggblade, 2005). Income diversification across the developing world has pointed to the increasing role of non-farm incomes in poverty reduction which is found to have an important impact on income, income distribution and welfare across rural households (Block & Webb, 2001). Non-farm activities in rural areas seem to offer a promising solution to many problems by creating local employment opportunities and generating new sources of income for investment (Wang et al. 2011). Income diversification can be considered as an important way to increase overall rural economic activity and employment in many developing countries like Kenya. This also helps in reducing the pressure on the demand for land in rural areas (Bryceson, 1996). Earnings from non-farm activities cannot only significantly increase total household income, but also function as a safety net through diversifying income sources.

Non-farm activities play an increasingly important role in sustainable development and poverty reduction in rural areas of Kenya. The non-farm sector particularly in rural areas has been accorded wide recognition in recent years as a potent instrument for alleviating rural poverty and

providing employment opportunities (Sharad, 2006). Therefore, exploiting these non-farm opportunities could offer a pathway for improving the living standards of the rural poor (Barrett, Reardon & Webb 2001; Food and Agricultural Organization, 1998). Non-farm activities (NFAs) are viewed as containing the mechanisms for achieving several objectives, all of which are integral to the process of rural development: alleviating poverty, reducing rural income inequality, increasing employment, slowing down rural-urban migration, reviving traditional crafts and building small scale industries using local resources (Wegulo, 1997). There are questions as to whether policy should focus more on investments in current portfolio of land based activities such as investments in fertilizers and modern seed or on human capital investments that may expand non-farm earnings. These include entrepreneurial training programs or vocational training, greater access to primary and secondary education and improved health care. However, for this to happen, the domestic environment also needs to improve.

In Kenya and especially in Cheborge, there remains an urgent need to develop appropriate policies, adopt or scale up successful approaches, and invest more and better in non-farm activities in rural areas. This study therefore seeks to provide an understanding of the types of non-farm activities in which rural households engage in to generate incomes and how participation in those activities influences the living standards of rural households in Cheborgei Division.

1.2 Statement of the Problem

Rural households in many developing countries largely obtain their income from agriculture. However, in many rural areas rapid population growth and sub-division of land along inheritance lines has resulted in very small farm sizes. Over the years, policy makers have put more emphasis on agricultural production. Households in Cheborge Division depend on farm activities but this alone cannot sufficiently satisfy their income needs. Rural households are, therefore, involved in non-farm activities as a way of increasing their income. There are questions as to whether policy should focus more on investments in current portfolio of land based activities such as investments in fertilizers and modern seed or on human capital investments that may expand non-farm earnings. Policies in Kenya should also focus on the possible contribution of

non-farm activities rather than only on small-scale agricultural production. It is therefore important to understand the contribution of incomes from rural non-farm activities and how this influences the living standards of rural households. This is because it is not clear whether the standard of living among Kenyans living in the rural areas such as Cheborge Division has been changed by indulgence in NFAs. Rural development policies in Kenya needs to be based on a good understanding of the types of Non Farm Activities (NFAs), factors motivating household participation in NFAs the levels of participation of households in NFAs as well as influence of participation in NFAs on living standards of rural households in rural areas thus the focus of this study.

1.3 Purpose of the Study

This study was designed to determine the influence of participation in non-farm activities on living standards of rural households in Cheborge Division of Kericho County, Kenya.

1.4 Objectives of the Study

These were objectives of the study:

- i. To determine factors that motivate rural households to participate in non-farm activities in Cheborge Division.
- ii. To determine the types of non-farm activities that rural households in Cheborge Division engage in.
- iii. To determine the levels of participation of households in non-farm activities in Cheborge Division.
- iv. To determine the living standards of households in Cheborge Division.
- v. To determine the relationship between levels of participation of households in non-farm activities and living standards of households in Cheborge Division.
- vi. To identify the differences in the living standards of rural households that participate and those that do not participate in non-farm activities in Cheborge Division.

1.5 Research Questions

- i. What are the factors that motivate rural households to participate in non-farm activities in

Cheborge Division?

- ii. What are the types of non-farm activities that rural households in Cheborge Division participate in?
- iii. What are the levels of participation of households in non-farm activities in Cheborge Division?
- iv. What is the living standards of households in Cheborge Division?

1.6 Research Hypotheses

Objectives five and six were hypothesised as follows:

H₀₁: There is no statistically significant relationship between the levels of participation of rural households in non-farm activities and living standards in Cheborge Division.

H₀₂: There is no statistically significant difference between the living standards of rural households that participate and those that do not participate in non-farm activities in Cheborge Division

1.7 Significance of Study

In spite of mounting evidence on importance of non-farm sector to farm households, there has been little systematic study of the rural non-farm activities and their contribution to the income of rural households. Policy-makers are looking to the wider rural economy, to reduce persistent rural poverty and stem rural-urban migration. This study was designed to determine the nature and influence of rural household participation in non-farm activities on living standards. The findings of the study may sensitize policy makers in the government, donor and development agencies on the role of non-farm income generating activities in influencing the living standards of the rural households. This study is important because it may consequently serve to further the harmonious growth of both farm and non-farm activities among rural households. The findings may also sensitise rural household heads in choosing whether to diversify their income sources through non-farm activities or not.

1.8 Scope of the Study

The study focused on non-farm activities such as agro-processing, trading, artisan, extractive and service provision among small-scale farmers. Wages from formal employment were excluded.

The study was conducted in six locations in Cheborge Division namely Cheboin, Kapsogut, Cheborge, Kibugat, Tebesonik and Techoget.

1.9 Limitations of the Study

There were problems of illiteracy but the researcher translated the questions on the interview schedule into Kipsigis language. There was also difficulty locating the household heads for the interview because majority of them were working outside their farms. To overcome this, the researcher made appointments and went repeatedly until the required household heads were interviewed.

1.10 Assumptions of the Study

The study made an assumption that household heads were willing to adequately avail information regarding their households.

1.11 Definition of Terms

This section provides the operational meaning of some of the key words and phrases used in this study.

Household – A household is defined as a family-based co-residential unit that takes care of resource management and the primary needs of its members. The criterion of co-residence does not necessarily imply living under one roof, but the proximity of household members has to be such that they share in, at least a major part of household resources and daily activities (Rudie, 2005). For this study, a household is a group of individuals living together, eating together and contributing to family income.

Income - Refers to the amount of money received during a period of time in exchange for labor or services, from the sale of goods or property, or as a profit from financial investments of a family.

Income Source Diversification - Income source diversification is defined as the number of economic activities an economic unit is involved in and the dispersion of those activities' shares in the total economic activity of the unit (Niehof, 2004). For this study, income source diversification will mean the effort and capacity of the households to carry out other income generating activities alongside farm activities.

Level of Participation in Non-Farm Activities - Participation is the active and physical involvement or attendance of household members in non-farm income generating activities. In the study, the consideration of total time spent on non-farm activities, the number of activities a household participate in and the number of household members who participate in non-farm income generating activities was defined as the level of participation.

Living Standards - Living standard is the ease by which people living in a time or place are able to satisfy their needs and/or wants (Shimoli, 2005). The variables that were measured in this study include access to health care, access to education for dependants, number of meals in a day and the type of housing.

Non-farm Activities - This study defines the non-farm activities, as economic activities other than production of primary agricultural commodities. Examples are kiosks, shoe shining and repair, carpentry, bicycle repair, photography among others.

Pull Factors- The Pull factors or the good reasons for diversification refer to better returns accruing from non-farm activities as compared to the farm sector such that the households are enticed to pursue them as opposed to those that are farm oriented (Bryceson, 1997).

Push Factors- The Push factors are the conditions that are adverse to the households when they try to involve themselves in farm-oriented activities such that they are often driven from the farm to the non-agricultural income generating activities (Barrett *et al.*, 2001).

Remittance- Refers to a payment of money sent to a person in another place.

Rural Households - This study adopts a broad definition of rural regions as encompassing both dispersed rural settlements as well as the functionally linked small towns/centres. This is where many agro-processing and ancillary non-farm service and commercial activities congregate to service surrounding agricultural settlements.

Rural Non-Farm Activities- These are agro-processing, trading, artisan, extractive, and service activities located in rural areas and undertaken by farm households away from their farms (Wegulo, 1997). Examples are brick making and grocery shops among others.

Small-scale farmers- These are farmers that operate less than two hectares of land.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature focusing on the concept of income source diversification, non-farm activities among rural households, factors influencing participation in non-farm activities, living standards for rural households and the composition of non-farm activities. The conceptual and theoretical framework used in the study are also discussed.

2.2 The Concept of Income Source Diversification

Africans diversify their livelihood strategies, to mitigate risks inherent in unpredictable agroclimatic and politico-economic circumstances (Liyama, 2006). Many small-scale African farmers derive some income from activities outside primary agriculture. These supplementary activities are commonly referred to as non-farm activities (Delgado & Siamwalla, 1997). Alternative strategies are needed to reduce unemployment and redistribute economic opportunities and benefits among regions and social groups within developing countries (Barrett & Reardon, 2000).

Historically, farming has been considered the principal economic activity of rural households, particularly poor rural households, and the dominant view of development has been the small-farm first paradigm which emphasizes promoting agriculture among smallholder farmers (Ellis & Biggs, 2001). While agricultural related activities still constitute the largest share of total income among rural households, a number of empirical studies show the growing importance of RNF activities in developing and transition countries. Surveys of these studies indicate RNF income represents on average 42% of rural income in Africa, 32% in Asia, 40% in Latin America and 44% in Eastern Europe and the CIS (FAO, 1998). Income source diversification refers to an increase in the number of sources of income. Thus, a household with two or more sources of income would be more diversified than a household with just one source (Minot, Epprecht, Ahn & Trung, 2006).

In Kenya, agriculture has been the focus of poverty reduction strategies in the rural areas (Government of Kenya, 2002). However, rapid population growth and sub-division of land along inheritance lines has resulted in very small farm sizes. Furthermore, in densely populated regions, there is now major concern that land may have become too scarce to make any meaningful contribution to household incomes (Marenya *et al.*, 2003). This land scarcity suggests that agricultural activities may not remain the only or even the main source of income and therefore rural households may not climb out of poverty through growth in land productivity alone.

2.3 Rural Non-Farm Activities

Non-farm activity means activity outside agriculture (own farming plus wage employment in agriculture). The rural non-farm economy (RNFE) may be defined as comprising all those non-farm activities, which generate income to rural households (including income in-kind and remittances) through self-employment carried out in rural areas. The non-farm sector forms part of the family uplift component that offers a range of economic interventions associated with land, livestock and non-agricultural income generating activities (Lanjouw & Lanjouw, 2001). Non-farm income generating activities may form a safety valve for rural households that are negatively affected by the above constraints (Craig & Gordon, 2004). Rural non-farm economy can play a potentially significant role in changing the living standards and numerous studies indicate the importance of non-farm activities to rural incomes (Reardon, 1997).

The RNFAs may be of great importance to the rural economy because of its production linkages and employment effects, while the income it provides to rural households represents a substantial and sometimes growing share of rural incomes (Barrett & Reardon, 2000). Households with greater income diversification were able to buy food and withstand the effects of the drought and tended to have higher overall incomes than those who were not able to supplement their farm incomes with non-agricultural income generating activities. More over, these activities generate income that is often a major source of savings for farm households in poor areas that are often used for food purchase in difficult times (Reardon, 2000).

The traditional vision of rural economies as purely agricultural is clearly obsolete though many rural development policies often continue to ignore, or fail to put sufficient emphasis on, the role of RNFAs. Landless and near-landless households everywhere depend heavily on non-farm income for their survival. Evidence shows that RNF activity in Africa is fairly evenly divided across commerce, manufacturing and services, linked directly or indirectly to local agriculture or small towns, and is largely informal rather than formal (Reardon, 1997). In Kenya, the percentage of households undertaking farming as well as non-farm activities is estimated to be around 90% (Barrett *et al.*, 2004).

Over time, the rural non-farm economy has grown rapidly and little has been known as to whether it is contributing significantly to rural income growth. In spite of this mounting evidence of the importance of the non-farm sector to rural farm households, there has been little systematic study of RNFAs and a systematic review of the nature and determinants of farm household participation in the non-farm sector. Even in PRSPs, policy makers have frequently paid little attention to the RNFAs, probably missing opportunities and maybe RNF development can improve the living standards for rural households, and consequently promote rural growth (Winters, Carletto, Davis, Stamoulis, Zezza & Mimeo, 2006). These strategies have not been successful in improving the living standards especially in third world countries mostly because of declining land sizes, stagnated farming technology, poor infrastructure, the demand for cash money and the ever-expanding population. However, little has been done to know whether it has any significant contribution to the living standards of rural households or not.

2.4 Composition of the Rural Non-Farm Activities

The most basic classification of activities follows the sectoral distinctions of national accounting systems: primary (agriculture, mining, and other extractive), secondary (manufacturing), and tertiary (services) (Barret, Reardon & Webb, 2001). The rural non-farm economy houses a highly heterogeneous collection of trading, agro-processing, extractive, artisan and service activities. Even within the same country, strong differences emerge regionally, because of differing natural resource endowments, labor supply, location, infrastructural investments and culture. The scale of individual rural non-farm businesses likewise varies enormously, from part-

time self-employment in household-based cottage industries to large-scale agro-processing and warehousing facilities operated by large multinational firms. Often highly seasonal, rural non-farm activity fluctuates with the availability of agricultural raw materials and in rhythm with household labor and financial flows between farm and non-farm activities (Wegulo, 1997).

Sectorally, despite many countries' emphasis on promoting rural industries, manufacturing typically accounts for only 20 percent of rural non-farm employment, whereas trade, construction, and other services account for about 80 percent. Spatially, rural areas house small retailers, cottage industries, basic farm equipment repair services, and input supply firms, whereas non-farm activities such as schools, health clinics, barbershops, milling, transport facilities, and government services tend to locate in regional towns. Remittances account for a large share of rural income in some locations (Barrett & Reardon, 2000). In the mining economies of Southern Africa, remittances may account for as much as a half of all rural household income. In most rural settings, however, local business and wage income account for a majority of non-farm earnings, whereas remittances and transfers typically account for 15–20 percent of non-agricultural rural income and 5–10 percent of total rural income (Reardon, 1997).

Agro-processing – the transformation of raw agricultural products by milling, packaging, bulking or transporting – forms a key component of the rural non-farm economy. Examples of agro-processing activities in Cheborge Division include posho milling and beer brewing. This study adopts a broad definition of rural regions as encompassing both dispersed rural settlements as well as the functionally linked rural towns where many agro-processing and ancillary non-farm service and commercial activities congregate to service surrounding agricultural settlements (Haggblade, Hazell & Reardon, 2007).

Most non-farm income generating activities are linked to a household's livelihood (Gordon & Craig, 2001). Barrett, Reardon and Webb (2001), suggest a three way classification of the non-farm income generating activities. This classification is based on the sectoral, functional and spatial components distinguished as primary, secondary and tertiary sector activities. The primary sector involves changing natural resources into primary products. The primary sector of the economy extracts or harvests products from the earth examples are fishing, farming and

mining. The secondary sector converts primary goods into manufacturers' goods. Examples include construction, textile production and processing. The tertiary sector activities make life easy by providing services. Examples are hair cutting and banking. This classification is regardless of where the activity takes place, at what scale, or with what technology. In Cheborge division, the primary sector activities include artisan and extractive activities for example timber sawing, quarrying, carpentry and brick making; the secondary sector activities include agro-processing and trading. These include beer brewing, selling of second hand clothes and retailing. Tertiary sector activities include services like bicycle, radio or shoe repair, *boda boda*, referring to the use of either motorbike or bicycle to transport people (common in most parts of Kenya).

2.5 Factors Influencing Participation in Non-Farm Activities

Rural households have various motives for diversifying their income sources and their income generation patterns instead of concentrating on agriculture with its potential gains from specialization. The first set of motives comprises what are traditionally termed as Push factors. These are the conditions that are adverse to the households when they try to involve themselves in farm-oriented activities such that they are often driven from the farm to the non-agricultural income generating activities. These conditions include:

- i. An inadequate farm output, resulting either from temporary events (like drought) or long term problems (such as land constraints)
- ii. Population Growth
- iii. Increasing scarcity of arable land and decreasing access to fertile land
- iv. Absence or lack of access to rural financial markets (Davis & Pearce, 2000)
- v. An absence of or incomplete crop insurance or consumption credit markets to use as ex post measures for harvest shortfalls.
- vi. The risks of farming, which induce households to manage income and consumption uncertainties by diversifying and undertaking activities with returns that have a low or negative correlation with those of farming. When crops fail or livestock die, households must reallocate labor to other pursuits, whether formal employment off-farm (e.g., wage labour), informal employment off-farm (e.g., hunting), or nonagricultural activities non-farm (e.g., weaving, brewing)

- vii. Lack of access to farm input markets and input credit markets, compelling households to pay for farm inputs with their own cash resources Barrett *et al.*, 2001).

Craig and Gordon (2004), in a study done on rural non-farm activities and poverty alleviation in Sub-Saharan Africa, found that push factors such as external shocks could lead to large numbers of people being drawn into poorly remunerated low-entry-barrier activities.

The second set of conditions are the Pull factors or the good reasons for diversification. These refer to better returns accruing from non-farm activities, as compared to the farm sector. As a result the households are enticed to pursue them as opposed to those that are farm oriented (Bryceson, 1997). These conditions include:

- i. Better returns in the non-farm sector relative to the farm sector or profit maximization
- ii. Income stabilization/Generation of cash in order to meet household objectives
- iii. Specialization according to comparative advantage accorded by superior technologies, skills or endowments (Barrett, Reardon & Webb, 2001).

Poverty is quite evident in Cheborge division, since large parts of land is under tea plantations owned by multinational companies thereby leaving only small parcels of land for subsistence farming. Farming therefore is not enough to sustain the family. Residents are employed as labourers on tea plantations while others are forced to participate in non-farm activities to make a living. The push factors in Cheborge division may include inadequate output from farm activities due to land constraints and the pull factors include income stabilization and profit maximization. There is a need therefore, to explore the possible factors that motivate households in the division to participate in non-farm activities.

2.6 Living Standards of Rural Households

Despite massive progress in reducing poverty in some parts of the world over the past couple of decades – notably in East Asia – there are still about 1.4 billion people living on less than US\$1.25 a day, and close to 1 billion people suffering from hunger. In 2005, more than 40

percent of sub-Saharan Africa's population was estimated to be below the poverty line, and this situation appears to have improved only marginally over the past decade (World Bank, 2006). At least, 70 per cent of the world's very poor people live in rural areas; neither of these facts is likely to change in the immediate future, despite widespread urbanization and demographic changes in all regions. South Asia, with the greatest number of poor rural people, and sub-Saharan Africa, with the highest incidence of rural poverty, are the regions worst affected by poverty and hunger. However, levels of poverty vary considerably, not just across regions and countries, but also within countries (IFAD, 2011).

For the past half-century, African governments and development agencies have experimented with a series of alternative approaches for addressing rural poverty, each giving way to a new paradigm as the persistence of poverty created disillusionment with prevailing approaches (Muyanga, Jayne & Burke, 2010). Despite successive years of five percent growth in real gross domestic product (GDP) in sub-Saharan Africa, in 2004-2007, rural poverty appears to be declining. The most direct and popular measures of living standards are income and consumption. In general terms, income refers to the amount of money received during a period of time in exchange for labour or services, from the sale of goods or property, or as a profit from financial investments. Expenditure is money payments or the incurrence of a liability to obtain goods or services while consumption is the final use of goods and services, excluding the intermediate use of some goods and services in the production of others (Vyas & Kumaranayake, 2006).

Livelihood diversification is the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living (Ellis, 1998). The success of any economy can be measured by its ability to provide for its people, to feed them, to clothe and shelter them and to offer access to good health, education and access to a wide range of consumer goods (Deaton & Case, 1987). In Kenya, poverty manifests itself in the form of hunger, malnutrition, illiteracy, lack of shelter and failure to access essential social services such as basic education, health, water and sanitation. Kenya maintains a mixed economy in which the government is actively involved in development planning motivated by the need to optimize the use of the country's limited resources to meet the

national policy priorities. The fundamental policy priorities identified since independence are poverty, ignorance and poor health. Since then, the goal of economic policy in Kenya has been to mobilize and ensure efficient utilization of resources to achieve high economic growth imperative for the citizens' decent living standards. However, it appears that over the past 30 years, various policies, strategies and programmes have been implemented with the aim of reducing poverty have yielded limited significant positive impact, as a substantial number of Kenyans continue to languish in poverty (Kimani & Kombo, 2010).

The standard of living among Kenyans has fallen drastically with the country now ranked among those with low human development levels. The Human Development Index measures the average achievements in a country based on a long and healthy life as judged by life expectancy at birth, adult literacy rates and the combined gross enrolment for primary, secondary and tertiary schools. Countries are also judged according to their ability to provide a decent standard of living based on the earnings per person per year and how fairly wealth is distributed (Shimoli, 2005). In Cheborge division 47.6% of the total population of the poor are those who do not have adequate income to meet the basic human needs. Those who lack essential human capabilities such as literacy are estimated to be around 11.8% of the total population. Cheborge division is ranked among those with many poor people, with 56% being in absolute poverty due to high rates of unemployment and diminishing land sizes among other factors (GOK, 2002).

2.7 Theoretical Framework

This study on influence of participation in non-farm activities was guided by the Sustainable Livelihoods Framework by Chambers and Conway (1991). Chambers and Conway proposed the following composite definition of sustainable rural livelihood which is applied most commonly at the household level. They defined livelihood as comprising the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A livelihood is sustainable if it can cope with and recover from stress and shock, maintain and enhance its capabilities and assets and provide sustainable livelihood for the next generation. It also contributes net benefits to the other livelihoods at the local and global levels and in the short and long terms. In their provisional anatomy of a household livelihood, four categories of parts were postulated.

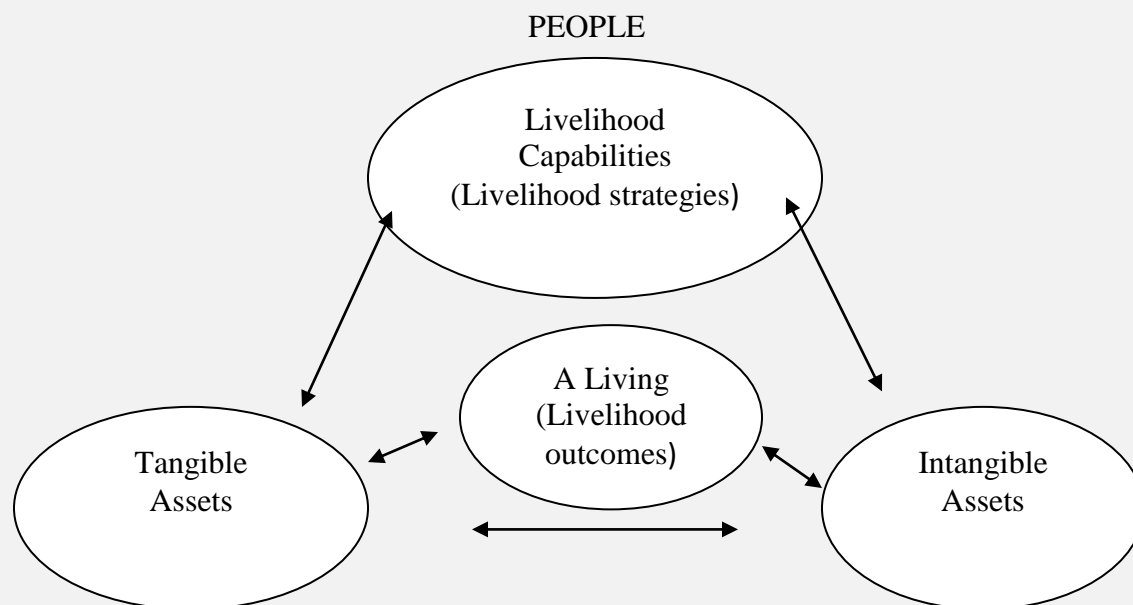
People- Their livelihood capabilities

Activities- What people do

Assets- these are tangible (resources and stores) and intangible (claims and access), which provide material social means

Gains or Outputs- Refers to a living, what they gain from what they do

The core of a livelihood can be expressed as a living and the main components and relationships are presented in Figure 1:



Source: Chambers & Conway (1991): Sustainable Rural Livelihoods

Figure 1: Components of the Sustainable Livelihood Framework

The assets that are generally recognized within the Sustainable livelihoods theory, as summarized by McLeod (2001) and Ellis (1998) are:

- Natural (Environmental) Capital: These are natural resources like land, water, wildlife, trees and forest,
- Physical Capital: Are basic infrastructure such as water supply, sanitation, roads vehicles, communications, housing, technology and equipments of production.

- Human Capital: Health, knowledge, education, and skills acquired information availability and the capacity to work.
- Social Capital: These are the connections and networks (relationships of trust, kinship membership of informal and formal groups)
- Financial Capital: Financial resources available (regular remittances or pensions, wages, savings, credit).

Rural livelihoods comprise one or more activities. These can include cultivation, herding, hunting, gathering, and reciprocal or wage labour, trading or hawking, artisanal work such as weaving and carving and processing. They variously provide food, cash and other goods to satisfy a wide variety of human needs. Some of these outputs are consumed immediately for example food while others go into short or long term stores, like cash, which is to be used later or to be invested in other assets (Chambers & Conway, 1991).

In view of the theory, this study looks at the livelihood capabilities in terms of the households' ability to participate in the various farm and non-farm activities. Human capabilities were seen in terms of skills possessed by the household members for example brick making and masonry. Livelihood capabilities referred to the knowledge, attitude, time, labour and culture required in order to participate in the various non-farm activities. The activities refer to the farm and non-farm activities, and the assets referred to the capital, land and the machinery used in processing and production of goods. A living referred to the livelihood attained from participation in the activities in this case it is the living standard attained by the rural households.

2.8 Conceptual Framework

The conceptual model in Figure 2 shows the interaction between the dependent, independent and moderating variables. The independent variable, which is level of participation in non-farm activities, was described by the number of activities for each household, who participates and the number of hours per day allocated to each activity. Living standards was described by type of shelter, number of meals per day, access to healthcare, kind and the level of education for all dependants. The figure shows that the independent variable influences the dependent variable. Moderating variables include gender, age and marital status of household head, size of land,

family size and education level of household head. The moderating variables affect the relationship between the dependent and independent variables

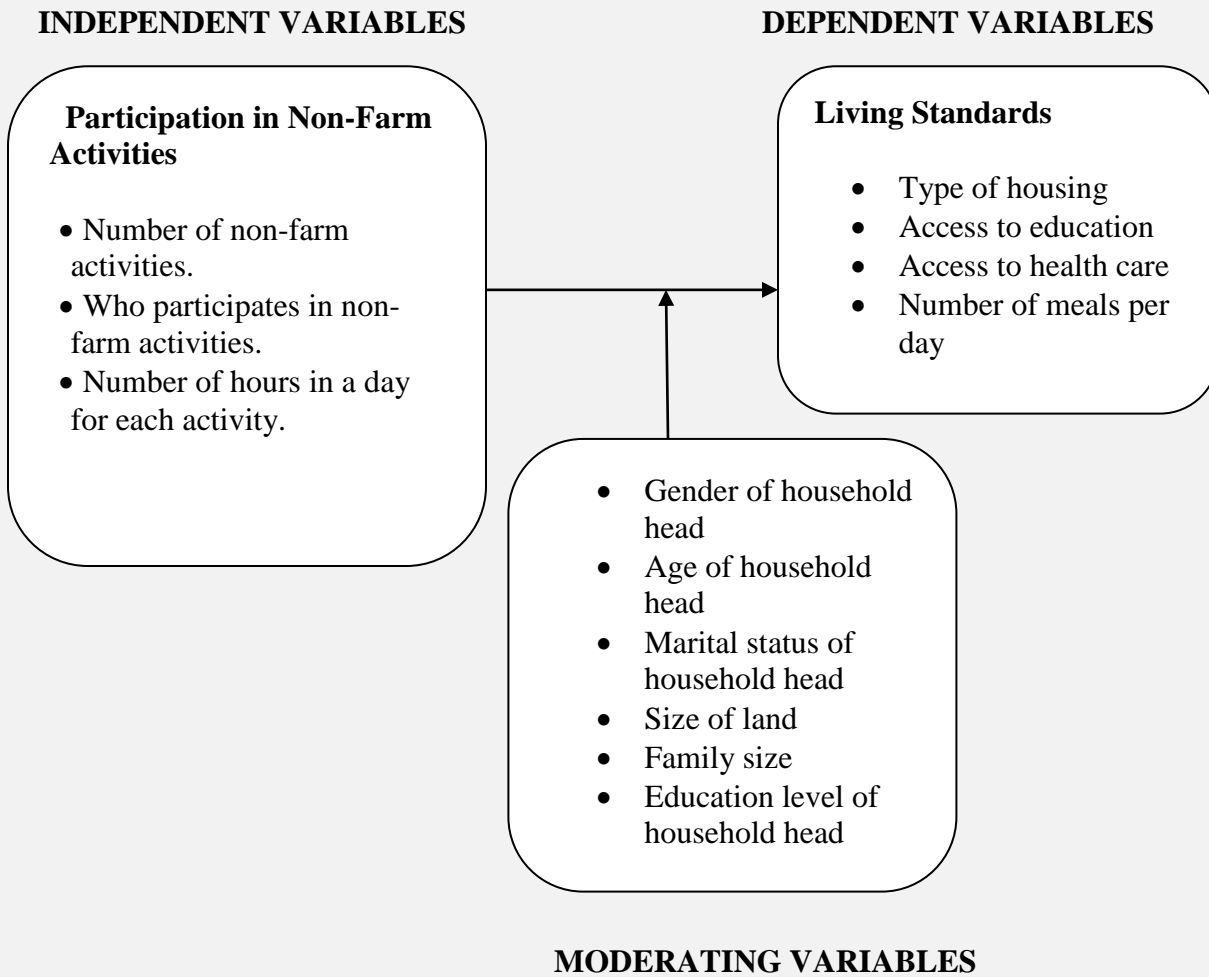


Figure 2: Conceptual Framework Showing Influence of Participation in NFAs on Living Standards of Rural Households in Cheborge Division.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a description of the study site, the population as well as the sample size for the study. The chapter also describes the research design, sampling frame, instrumentation and methods that were used in data collection and analysis.

3.2 Research Design

The study adopted a cross-sectional survey. A cross-sectional survey studies variables at a point in time without any manipulation (Trochim, 2006). In addition, cross sectional survey can involve questions of the past and current and generalize their characteristics to the target population (Nassiuma, 2000).

3.3 Study Location

The study was conducted in Cheborge Division of Bureti District, which is in Kericho County Kenya. The district has a population of 420,782 (Government of Kenya, 2009). Cheborge Division has an area of 158 km square with six locations namely Cheborge, Cheboin, Kapsogut, Kibugat, Tebesonik and Techoget. Cheborge Division is an agriculturally oriented area that receives high rainfall with temperatures of 16-20 degrees Celcius. The climatic conditions are favourable for agricultural activities yet people still participate in non-farm activities. The division was also selected because it represents rural settings of farm households with different livelihood activities.

3.4 Population of the Study

A total of 5235 households in Cheborge Division were targeted. This was only limited to small-scale farmers in the division. The households were selected as the basis for the study because they act as units of both production and consumption of non-farm services and products. The distribution of households is as shown in Table1:

Table 1: Locations and Number of Households in Cheborge Division

Location	Households
Cheborge	780
Cheboin	800
Kapsogut	950
Kibugat	685
Tebesonik	870
Techoget	1150
Total	5235

Source: District Survey Office, Bureti, 2012

Table 1 shows six locations in Cheborge Division and the respective number of households. Techoget has the highest number with 1150 households, while Kibugat has the lowest with 685. The table also gives the total number of households in the division (5235) which is the total population.

3.5 Sampling Procedure and Sample Size

The sampling frame was a list of (5235) households from Bureti District Development Offices for the respective locations in Cheborge Division. Households in each location at the division were selected proportionately using stratified sampling while convenient sampling was used to select those households that participate and those who do not participate in the non-farm activities. Convenient sampling was done because it was not known which households participate in non-farm activities and which ones do not. Therefore, they were identified as data was collected. 100 households were sampled from households that participated in non-farm activities but only 92 household heads responded adequately. From those households that did not participate in non-farm activities, 100 households were sampled. A total of 192 households for the sample were appropriate for the study because the minimum recommended sample size in a survey is 100 (Borg & Gall, 1996). The breakdown of the sample is shown in Table 2:

Table 2: Sample Size for Cheborge Division

Location	Households	Proportion percentage	Sample size
Cheborge	780	14.9	29
Cheboin	800	15.3	31
Kapsogut	950	18.1	34
Kibugat	685	13.1	25
Tebesonik	870	16.6	33
Techoget	1150	22.0	40
Total	5235	100.00	192

Table 2 shows the population and the percentage proportion for each location in Cheborge Division. It also shows the calculated sample size for each of the locations and the total sample size for the study.

3.6 Instrumentation

Data was collected using an interview schedule with both structured and unstructured questions. The items on the interview schedule were developed based on the objectives of the study. The interview schedule had three parts; Part A was used to collect demographic characteristics of the respondents. Part B was used to seek information regarding participation of the households in non-farm activities and part C was used to determine the living standards of the households (See Appendix A for the sample of the interview schedule).

3.6.1 Validity of the Instrument

Validity is the accuracy, soundness or effectiveness with which an instrument measures what it is intended to measure (Wiersma & Jurs, 2005). Face validity involve only a casual, subjective inspection of an instrument to judge whether it covers the content that the test purports to measure (Borg & Gall, 1996). Content and face validity was done by subjecting the instrument to individual experts from the Department of Applied community Development Studies and the Faculty of Education and Community Studies. Comments from the experts were incorporated into the instrument before being used in the field.

3.6.2 Reliability of the Instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Wiersma & Jurs, 2005). To determine the reliability of the instrument, pre-testing was done using 20 households in Sotik Division to check for any deficiencies and ambiguities in the final instrument. Sotik Division was chosen for pre-testing because it has similar rural settlements and the same activities as those of Cheborge Division. After pre-testing, the reliability of the instrument was estimated using the Cronbach's coefficient Alpha. A reliability of 0.728 was obtained. The instrument was gauged fit for data collection because according to Fraenkel and Wallen (2000) a minimum reliability of 0.70 is recommended.

3.7 Data Collection Procedure

An introductory letter was obtained from the university's graduate school which facilitated the acquisition of a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Prior to data collection, a visit to the area was done to obtain permission from the local administration. Chiefs and village elders were contacted to inform the residents. A survey was conducted to collect the required data. It involved visiting of the households and administering the interview schedules to each of the household heads. The researcher moved from one location to another interviewing the household heads until the required number of households from each group was arrived at.

3.8 Measurement of Variables

This section shows the measurement of the two major variables; level of participation in non-farm activities and living standards. The variables were assigned scores and indices as shown in Tables 3, 4, 5 and 6:

3.8.1 Indicators of Level of Participation in Non-Farm Activities

The indicators showing level of participation in NFAs were given scores as shown on Table 3 and while the levels are as shown on Table 4:

Table 3: Scores for Level of Participation in NFAs

Time in NFAs Per day	Level of participation indicators			Who participates in NFAs	Scores
	Scores	Number of NFAs	Scores		
0-5 hours	1	One	1	Household head alone	1
6-11 hours	2	Two	2	Household head and spouse	2
12 -18 hours	3	Three	3	Everyone in the household	3
>18 hours	4				

The level of participation in non-farm activities was given by the time that households participate in non-farm activities, the number of non-farm activities and number of household members participating in non-farm activities.

From these scores, a five point index was developed by getting the sum of scores exhibited by the respondent. For instance, the lowest score was obtained by a sum of $1 + 1 + 1 = 3$ while the highest score was obtained by summing up $4 + 3 + 3 = 10$. With this basis, a scale ranging from two to eleven was arrived at to cater for the respondents' scores. These were; very low for a score range of two to three; low for a score range of four to five; moderate for a score of six to seven; high for a score range of eight to nine and finally very high for a score of ten (10) to eleven (11). A household with very low participation implied that it spent less than $\frac{1}{4}$ day, undertook one non-farm income activity and only the household head was involved. On the other hand, a household with a very high participation spent more than 18 hours a day, undertook more than one non-farm activity and everyone in the household was involved.

Table 4: Index and Scores for Level of Participation

Index	score
Very low	3
Low	4-5
Moderate	6-7
High	8-9
Very high	10

Table 4 shows the index and scores for level of participation in non-farm activities. The indices given were very low, low, moderate, high, and very high.

3.8.2 Living Standards Measurement

Living standard is defined as the ease by which people living in a time or place are able to satisfy their needs and/or wants (Shimoli, 2005). The variables measured in the study included access to health care, access to education for dependants, number of meals in a day and the type of housing. Indicators for measuring living standards were assigned scores. The lowest score was obtained by sum of $1+1+1+1+1+1=6$ and the highest score was obtained by a sum of $3+3+3+4+4+4=21$. From these scores three levels were adopted, high, medium and low. A score of six to ten denoted low living standards. Score of eleven to fifteen(15) denoted medium living standards while those with high living standards scored sixteen (16) and above as shown in Tables 5 and 6.

Table 5 shows how the scores for living standards were calculated. Living standards variables given on the table are food (number of meals per day), type of shelter (characteristic of main building), access to education, and access to health care and these variables were also assigned scores. Table 6 shows the scoring index for living standards. Low living standard had a score of six to ten, medium living standard had a score of eleven (11) to fifteen (15) and high living standard had a score of sixteen (16) to twenty one(21).

Table 5: Scores for Living Standards

Food (no .of meals per day)	Type of Shelter (characteristic of building)						Access to education	Score	Access to health	Score	
	Score	Roof	Score	Floor	Score	Wall					
1 meal	1	Grass	1	Dirt	1	Mud	1	Public low cost school	1	Herbalist	1
2 meals	2	Iron sheets	2	Smeared	2	Wood	2	Public low cost school	2	Public health care	2
>2 meals	3	Tiles	3	Cement	3	Brick/stone	3	Private low cost	3	Private high cost	3
								Private high cost	4	Private high cost	4

Table 6: Index and Scores for Living Standards

Index	Scores
Low	6 – 10
Medium	11 – 15
High	16 -21

3.9 Data Analysis

Descriptive and inferential statistics were used in data analysis. Descriptive statistics included frequency distributions and percentages, which were used to describe the types of NFAs, factors motivating households to participate in NFAs, living standards and the levels of participation of households in NFAs. Inferential statistics involved the use of t-test and chi-square. Independent sample t-test was used to analyse the difference in the living standards of those households that participated in non-farm activities and those that did not participate. T-test was used because the means of two unrelated groups of households (those that participated and those that did not participate in NFAs) was obtained. This was also because there was one dependent variable (living standard) and one independent variable which is categorical (participants and non-participants). Chi-square test was used to analyse the relationship between level of participation in non-farm activities and living standards. Chi-square test is suitable for finding an association between two categorical variables. The two categorical variable in this study were levels of participation and living standards. The Statistical Package for Social Science (SPSS) version 17 was used to compute the data collected. The hypotheses were tested at $\alpha = 0.05$ as summarized in Table 7:

Table 7: Summary of Testing Hypotheses

Hypothesis	Independent variable	Dependent variable	Statistical test
<p>Ho1: There is no statistically significant relationship between the levels of participation of rural households in non-farm activities and living standards in Cheborge Division.</p>	<p>Levels of participation in non-farm activities</p> <ul style="list-style-type: none"> • Very low • Low • Moderate • High • Very high 	<p>Living standard</p> <ul style="list-style-type: none"> • Type of shelter • Access to education • Access to health care • Number of meals per day 	Chi-square
<p>Ho2: There is no statistically significant difference between the living standards of rural households that participate in non-farm activities and those that do not participate in non-farm activities.</p>	<p>Participation in non-farm activities.</p> <ul style="list-style-type: none"> • Number of hours in a day for each activity. • Number of non-farm activities. • Number of family members participating in non-farm activities. <p>Non-participation in NFAs</p>	<p>Living standard</p> <ul style="list-style-type: none"> • Type of shelter • Access to education • Access to health care • Number of meals per day 	t-test

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides the results of the study on influence of participation in non-farm activities on living standards of rural households in Cheborge Division. The aspects analyzed and discussed include, factors that motivate households to participate in non-farm activities, the types of non-farm activities that households participate in, levels of participation of household in NFAs, living standards of households and the relationship between level of participation in non-farm activities and living standards of rural households in Cheborge Division. It also gives the difference in living standards of households that participate in non-farm activities and those that do not. Proportionate sampling was used to draw the required respondents according to the proportionate households in each location at the division while convenient sampling was used to select those households that participate and those who do not participate in the non-farm activities.

4.2 Respondents' Characteristics

A summary of rural household characteristics is presented in Tables 8 and 9. The household characteristics analysed include gender, age, marital status of household head, family size, size of farm in acres and the highest level of education completed by the household heads.

4.2.1 Gender of Household heads

Results in Table 8 shows that majority (88.5%) of the sampled household heads were males while the remaining 11.5% were females. Approximately 10% of household heads that did not participate in non-farm activities were females while 90% were males. About 13% of household heads that participated in non-farm activities were females while 87% were males. A study by Niehof, (2004) reveals that female household heads with children carry a double burden of reproductive and productive duties. He adds that while livelihood diversification might be the only option for improving these women's situation, lack of time and lack of access to productive resources stand in their way. Women are also constantly involved in several household chores,

which limit their participation in NFAs. This may explain why female-headed household were less involved in RNFA than male-headed households were.

Table 8: Gender, Age and Marital Status of Household heads

Variable	Non-participants		Participants in NFAs		Total F	Total %
	F	%	F	%		
Gender of household head						
Females	10	10.1	12	13.0	22	11.5
Males	89	88.9	80	87.0	169	88.5
Age of household heads in years						
0-20	0	0	1	5.0	1	0.5
21-40	36	37.5	53	55.0	89	47.9
41-60	49	51	34	37.0	83	44.6
61-80	11	11.5	2	23.0	13	7.0
Marital status						
Single	5	5.0	15	16.5	20	10.5
Married	80	80	69	75.8	149	78.0
Widows	9	9.0	4	4.4	13	6.8
Separated/divorced	6	6	3	3.3	9	4.7

Source: Survey data, 2012

F= Frequency

4.2.2 Age of Household heads

The sampled household heads were aged between 20 and 80 years old as shown in Table 8. Approximately 48% of household heads were aged between 21 and 40 years while about 45% were between 41 and 60 years. In relation to participation in non-farm activities, approximately 59% of those that participated were between 21 and 40 years as opposed to 36% of those that did not participate. This shows that younger household heads are more likely to participate in non-farm activities as compared to older household heads. This corresponds with the views of Smith (2000), who notes that it is generally the younger household members who migrate in search of non-farm, income-earning opportunities. This may be because younger household heads are energetic than older household heads, more willing to take risks and have easy access to resources as compared to older household heads.

4.2.3 Marital Status of Household Heads

More than three quarters (78%) of household heads were married while 10.5% were single. The widowed and those separated had small percentages of 8.5%, and 4.7% respectively. The widows and the separated/divorced that did not participate were 9% and 6% respectively. The widows, widowers and the separated /divorced that participated in NFAs were 4.4% and 3.3% respectively as shown in Table 8.

Table 9: Family Size, Farm Size and Education Level of Household Heads

Variable	Non-participants		Participants in NFAs		Total F	Total %
	F	%	F	%		
Family size(no. of persons)						
1-5	55	54.0	65	65.0	115	60
6-10	42	42.0	31	31.0	73	36.5
11-15	3	4.0	-	-	4	3.0
>15	-	0	1	1.1	1	0.5
Farm size in acres						
0-5	80	79.2	75	80.0	155	80.7
6-10	20	20.8	16	18.0	36	18.8
11-15	-	0	1	2.0	1	0.5
>15	-	0	-	0	0	0.0
Highest level of education completed						
University	5	5.1	6	7.0	11	5.9
College	19	19.2	26	29.0	45	23.9
Secondary	45	45.5	44	47.0	89	47.3
Primary school	21	21.2	13	17.0	18	18.1
No formal schooling	9	9.1	0	0	9	4.8

Source: Survey data, 2012

F= Frequency

This shows higher percentage of widows and the divorced/separated do not participate in non-farm activities. This finding is contrary to a study done by Dary and Kuunibe, (2012) who found that being married decreases the probability of one participating in NFAs. In this study, married household heads participate more in non-farm activities probably because they work together to pull the necessary resources for starting and expanding the NFAs.

4.2.4 Family size

The average family size most prevalent was between 1-5 members which accounted for more than half (60%) of the respondents while those with between 6 and 10 members accounted for 36.5%. These results are shown in Table 9. About 54% of households that did not participate in non-farm activities had a family size of upto five members as compared to 65% of those that participated. The study found that a higher percent of those with six to 15 members did not participate in non-farm activities. This could be because majority of those members are of school going age and may not participate in NFAs. According to Zerai and Gebreegziabber (2011), the family size in number may suggest the level of dependency or the labor force in the household. However, Dermuger *et al.* (2010) found that household composition in number does not have much impact on individual decision to participate in NFAs.

4.2.5 Households' Farm Size

Farm size was divided into categories of 0-5, 6-10, 11-15 and >15acres as shown in Table 9. About 80.7% of households had farm size of up to 5 acres. Another 18.8% of households had farm size of 6-10 while only 0.5% had between 11-15 acres. There were no household with more than 15 acres of land. Approximately 80% of household that participated in non-farm activities had farm size of up to 5 acres as compared to 79.2% of households that did not participate. Of those households with farm size of 6-10 acres, about 18% participated in non-farm activities while 20.8% did not. This finding show that there was no much difference between the farm sizes of households that participated in non-farm activities and those that did not. This is contrary to a study done on rural non-farm incomes in Nicaragua by Corral and Reardon (2001), which found that land scarcity is one of the driving forces in participation in non-farm activities. The results could also be because those households with bigger farms opted to concentrate more in farm activities as opposed to the non-farm activities.

4.2.6 Education Level of Household Heads

According to results in Table 9, about 6% of household heads completed university while 23.9% completed college. Those that completed secondary school and primary school level are approximately 46% and 19% respectively. About 4.8% had no formal schooling at all. There are

differences in the level of education of household heads that participate in non-farm activities and those that do not. Of those that did not participate in non-farm activities, 5.1% completed university level as compared to 6.7% of those that participate. About 19% of households that did not participate in non-farm activities completed college as opposed to 29% that participate. Another 45.5% of those that completed secondary school level do not participate in non-farm activities while 49.4% do participate. From those that completed primary school level, 29% do not participate in non-farm activities while 17% participated as shown in Figure 3:

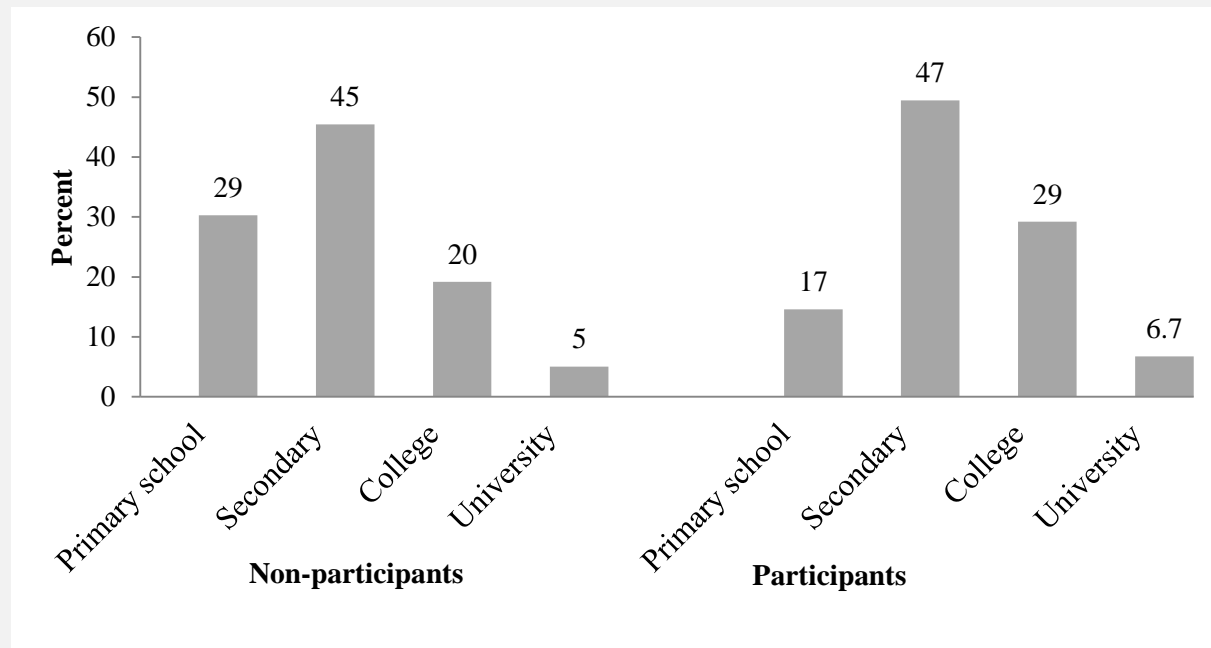


Figure 3: Education Level of Household Heads and Participation in NFAs

The findings show that higher percentages of those that completed university, college and secondary school participated in non-farm activities as compared to those that did not participate. Therefore, the probability of participation in NFAs increases with number of years of schooling, just as reported by Dary and Kuunibe (2012). This could be because formal education increases the ability to understand and respond to information concerning decision making for appropriate choice of investment in non-farm activities (Feder & Slade, 1984). A lack of education creates a barrier to entry in many non-farm activities and education is expected to be particularly important in participation in non-farm activities (Winters *et al.*, 2009). Undergoing some form of education equips the individual with specialist skills to engage in certain non-farm jobs such as

tailoring, repair works (motorbikes, tapes/radio), carpentry, and masonry. Education can increase confidence, establish useful networks or contribute to productive investment - exposure outside the home village, using improved earnings to educate other family members or invest in rural enterprises (ibid).

4.3 Factors Motivating Households to Participate in Non-farm Activities

The capacity of households or individuals to participate in the rural non-farm sector is not uniform (Natural Resource Institute, 2000). Furthermore, Ellis (2000), in a study done on rural livelihoods and diversity in developing countries points out that the reasons for households to diversify tend to range between choice and necessity, also known as the pull and push factors. Push scenario happens when participation in non-farm activities is driven by inability to earn enough from agricultural activities. A pull scenario means that participation in non-farm activities is driven by higher payoffs or lower risk in the non-farm sector compared to agriculture (Atamanov & Marrit, 2011). This is also a situation where rural people are able to respond to new opportunities. Reardon *et al.* (1998), further suggest that when relative returns are higher to the NFAs than to farming, and returns to farming are relatively more risky, pull factors are at work. On the other hand, when farm output is inadequate and opportunities for consumption smoothing such as credit and crop insurance are missing, or when input markets are absent and the household needs cash to pay for farm inputs, push factors are at work.

The findings indicate that 88% of households were influenced by push factors while only about 12% were influenced by pull factors. A study by Gordon and Craig (2001), reveals that when households are pushed into non-farm activities large numbers may be drawn into poorly remunerated low entry barrier activities, while those that are pulled are more likely to offer a route to improved livelihoods. The distribution of pull and push factors motivating household participation is presented in Figure 4:

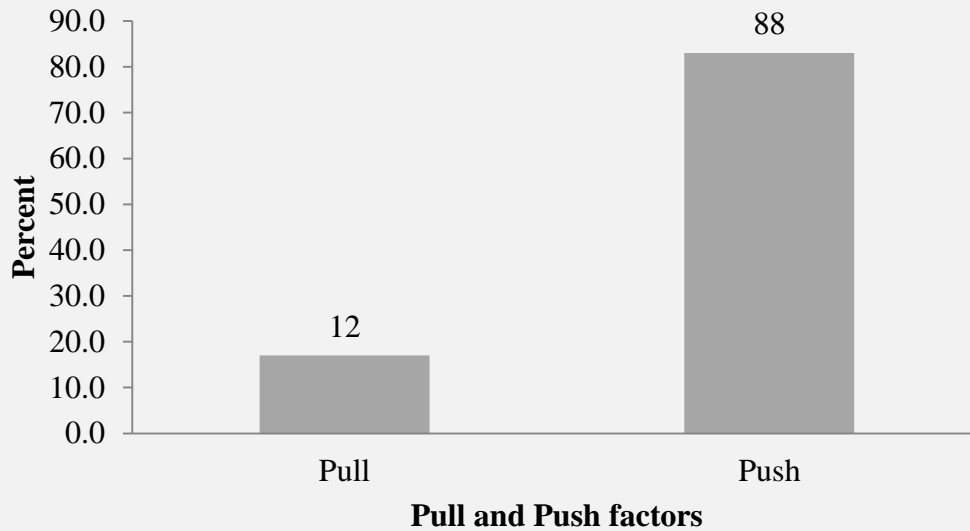


Figure 4: Distribution of Pull and Push Factors that Motivates Household Participation in NFAs

The reasons for household participation in non-farm activities are shown in Table 10. The push factors were a lack of market for agricultural products, income stabilization and small farm sizes. The pull factor was profit maximization. This study found that approximately 47.8% of households were pushed into non-farm activities to stabilize or increase income flows. The finding is consistent with findings by Haggblade, Hazel & Brown (1989), who found that non-farm earnings help stabilize household income over the calendar year. Households that are pushed into non-farm activities, participate as a means of obtaining more income and improving the current living conditions (Lanjouw & Lanjouw, 2001). Many of the respondents considered non-farm activities a source of constant and instant cash.

Another considerable proportion of respondents (34.8%) participated in NFAs because they had small farm sizes, which they said did not produce enough to sustain them. As discussed earlier, 81% of households that participated in non-farm activities had land size of up to five acres. This shows that land scarcity is largely a problem in the area. A study by Karugia (2006), reveals that the declining farm sizes makes it impossible for rural households to depend on agriculture alone so they turn to non-farm activities in order to supplement income from agriculture. Land subdivision has resulted in individual family members having very small pieces therefore, constraints on agriculture has pushed farm households to diversify sources of income.

Table 10: Factors Motivating Households to Participate in Non-Farm Activities

	Factors	Frequency	Percentage
Push {	Increase or stabilize income	44	47.8
	Small farm size	32	34.8
	Lack of market for agricultural produce	5	5.4
Pull —	Profit maximization	11	12.0
Total		92	100.0

Source: Survey data, 2012

About 5.4% of households were pushed into non-farm activities because they lacked market for agricultural products. Examples of these agricultural products are maize, beans and green vegetables. Weaknesses in rural markets tend to encourage household diversification since a lack of market drives households to self-insure and self-fund input purchases (Reardon *et al.*, 2006). A household that is primarily dependent on agriculture would participate in non-farm activities in order to finance agricultural inputs and assets. These are, for example, fertilizer and seeds for the next season, if they lack market for their produce. Households choose to diversify into non-farm activities as a safety net against shocks such as inadequate farm output, resulting either from temporary events like drought and absence of crop insurance. Other shocks include lack of access to farm input markets and input credit markets and death of livestock or crop failure, compelling households to pay for farm inputs with their own cash resources (Barrett *et al.*, 2001).

Out of all households that participated in NFAs, only 17% were pulled into non-farm activities in order to maximize profits. Some households make a positive choice to take advantage of opportunities in the rural non-farm economy, taking into consideration the wage profit differential between the on-farm and non-farm sectors. Households may also diversify into the non-farm sector to enhance their assets (Davis & Pearce 2000).

4.4 Types of Non-farm Activities in Cheborge Division

In Cheborge Division, households engage in a variety of non-farm activities such as *boda boda* transport, brick making, barber shops and saloons, kiosks, and welding among others. All the locations in the division showed participation in almost the same type of non-farm activities. These non-farm activities were classified as trading, agro-processing, artisan, extractive and service (Wegulo ,1997). The results are shown in Table 11:

The most common trading activities were shops or kiosks and groceries. Under the trading activities, households with a kiosk and / or retail shop were leading with 23.9%. Those with a groceries shop accounted for 10%. The most common services were saloons/barber shops (11.5%) and *bodaboda* operations (7.96%). This finding is consistent with a study done in Africa by Winters *et al.* (2006), which found that general service and commerce or trading represent a greater share of rural non-farm activities. This may be because the types of trading activities practiced require less skill, little machinery or equipment and probably low capital to run and or operate. Artisan and agro-processing activities are classified as secondary sector activities (Ibid).

In Cheborge Division, majority of the household heads, as discussed earlier, have primary and secondary education. Non-farm trading activities require basic knowledge to compute for profits made. This is provided by basic education, which most households heads had and therefore, participation in these category of activities was high. Trading and service activities, which are classified as tertiary activities, involve only re-packaging or mere distribution of products, therefore, attracting more household heads as compared to primary and secondary sector activities.

Table 11: Types of Non-Farm Activities at Household Level

Type of non-farm activities	Total Frequency	Total %
Trading		
Shop/kiosk/agrovet	26	23.9
Boutique	4	3.7
Grocery	11	10.1
Cows	2	1.8
Tea	2	1.8
Milk	1	0.9
Timber selling	1	0.9
Hotel operators	8	7.3
Beer	2	1.8
Subtotal	57	52.3
Agro processing		
Poshomill	10	9.2
Subtotal	10	9.2
Artisan		
Juakali	2	1.8
Mat weaving	1	0.9
Tailoring	3	2.8
Brick making	3	2.8
Welding	2	1.8
Carpentry	1	0.9
Plumbing	1	0.9
Subtotal	13	11.9
Extractive		
Timber cutting	1	0.9
Masonry	3	2.8
Subtotal	4	3.7
Service		
Pool table	1	0.9
Bodaboda	9	8.3
Saloon/barber	10	9.2
Shoe shining /cobbler	3	2.8
Painting	1	0.9
Matatu operator	1	0.9
Subtotal	25	22.9
Total	109	100.0

Source: Survey data, Cheborge Division, 2012

Artisan activities constituted 11.9% while agro processing and extractive constituted 9.2% and 3.7% respectively. Extractive activities are classified as the primary sector activities. Artisan and extractive based activities require specialised skills and this limits the participation of most people. This may account for the considerable low number of households engaging in such activities. The distributions of participation in the five categories of non-farm activities are presented in Figure 5:

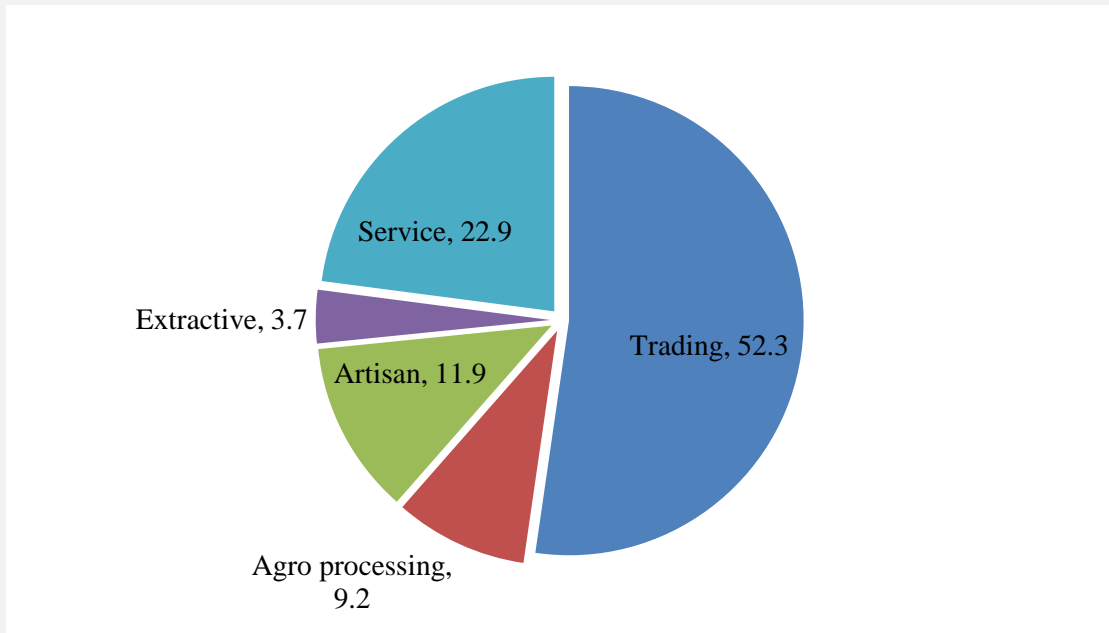


Figure 5: Distribution of Participation in Non-farm Activities

4.5 Level of Participation in Non-farm Activities

To gauge the level of participation in non-farm activities three variables were used; the number of non-farm activities (one, two, three, more than three), who participates in non-farm activities (household head alone, household head and spouse, everyone in the household) and the time spent on those activities (0-5hrs, 6-11 hrs, ≥ 12 hours per day).

4.5.1 Number of Non-farm Activities Undertaken by Households

In gauging the level of participation in non-farm activities, the number of NFAs undertaken by a household was considered. Households in this study were reported to have one, two or three non-farm activities as shown in Table 12. The findings indicate that 69.5% of households undertook

only one non-farm activity, 24.2% had two activities while 6.3% had three activities. There were no households with more than three activities. Households with only one activity were more than double those with two and three activities. This may be because households in Cheborge division are resource poor (GoK, 2002).

Table 12: Number of NFAs that Households Participate in

Number of NFAs	Frequency	Percentage
One	63	69.5
Two	23	24.2
Three	6	6.3
Total	92	100

Source: Survey data, 2012

Winters *et al.* (2006) assert that a household's asset endowment plays an important role in determining the participation in activities as well as the intensity of involvement. Households with more resources would opt to diversify in more than one activity as opposed to those with lesser resources (Reardon *et al.*, 2001). Non-farm activities require both tangible and intangible assets and resources to start and expand. The intangible assets include money and credit for buying stock, education, health and skills. Tangible resources include land and equipment.

A household's alternative of the number of activities is seen as depending on the context in which the household operates as well as preferences. Context includes prices of inputs, market orientation and infrastructure (Hamza, 2007). Some of the respondents in Cheborge Division complained of a lack of market for their products, which hinders participation in more NFAs. Further analysis on the number of activities that a household undertakes in relation to farm and family size of households shows that majority (83%) of households with only one activity had upto five acres of land. Another 33.3% of those with three activities had 6-10 acres of land as opposed to 66.7% who have 0-5 acres. This means that those with slightly bigger farms participated less in non-farm activities as shown in Table 13. This further shows that land scarcity is push factor for participation in RNFAs

Table 13: Number of NFAs in Relation to Farm and Family size of Households

	Number of activities a household undertakes		
	One activity	Two activities	Three activities
Farm size			
0-5	83%	78.3%	66.7%
6-10	14.4%	21.%	33.3%
11-15	1.6%	0%	0%
>15	0%	0%	0%
Family size			
1-5	44.7%	60.9%	33.3%
6-10	18.1%	39.1%	66.7%
11-15	0%	0%	0%
>15	0%	0%	0%

Source: survey data, 2012

Results also show that majority (66.7%) of households with 6-10 family members participated in three activities while only 18.1% participated in one activity. This means that the larger the family sizes the more the activities a household participated in. This could be because more family members place a higher financial burden on family resources but they also provide necessary labour and skills to run the NFAs.

According to Figure 6, further analysis of the types of NFAs in relation to the number of activities shows that there were more trading and service activities among households with only one activity. Agro-processing, with 6.5% and extractive, with only 1.6% of the activities were the least prevalent among households with one activity. Households with three activities preferred trading, agro-processing and service activities with 33.3%, 50% and 16.7% respectively. There were no extractive and artisanal activities in households with more than two activities unlike households with one activity where all the five categories were present.

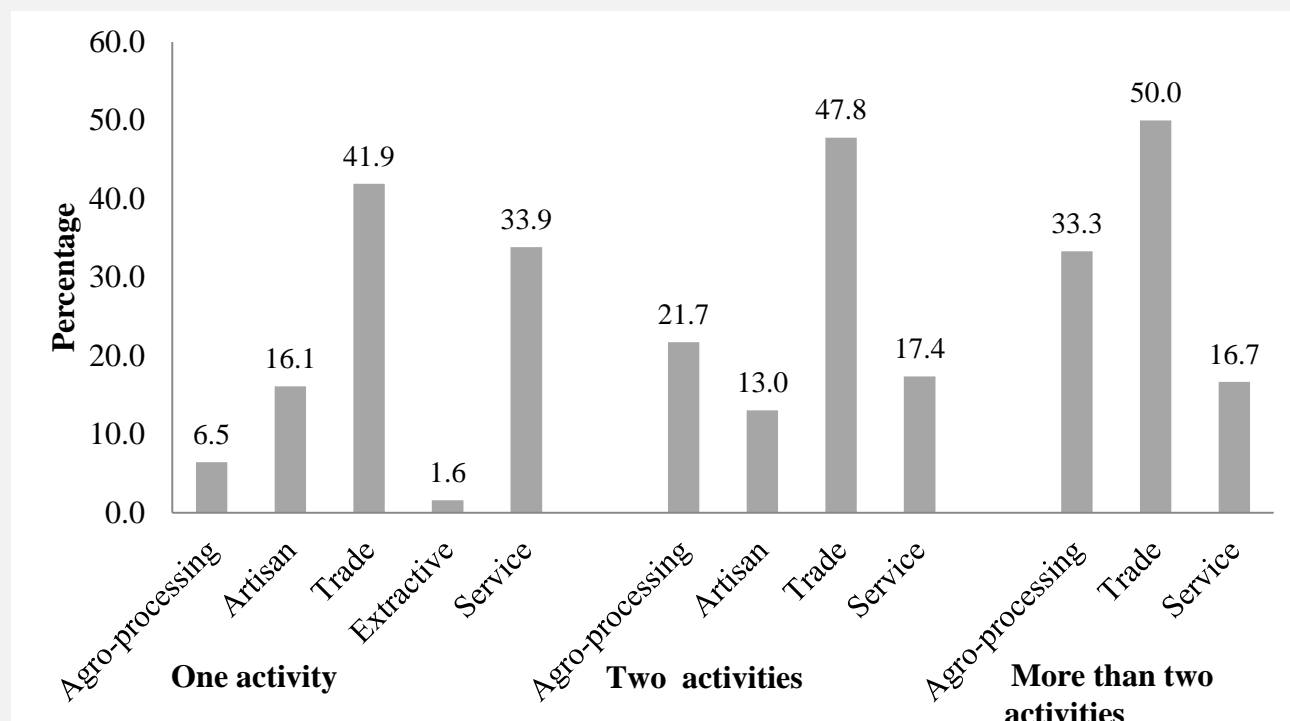


Figure 6: Distribution of the Types and Number of NFAs Undertaken by Households

4.5.2 Number of Individuals in the Household Participating in Non-farm Activities

A household would have the household head alone, the household head and spouse or everyone in the household participating in non-farm activities. The distribution of the household members participating in non-farm activities is shown in Table 14:

Table 14: Individuals in the Households Participating in NFAs

Who participates in NFAs	Frequency	Percentage
Household head alone	56	60.9
Household head and spouse	20	21.7
Everyone in the household	16	17.4
Total	92	100

Source: Survey data, 2012

About 60.9% of households had only the household head participating in non-farm activities. Households where the household head and spouse participated in non-farm activities constituted 21.7% while those where everyone in the household is involved constituted 17.4%. This could be because most children are school going and therefore are not available to participate in the activities. Another reason could be the high involvement of women doing household chores therefore leaving only household heads of which 90% were men to move into non-farm activities. This could also explain why there was a low level of participation by household head and spouse.

According to results presented in Figure 7, households where the head alone participated in non-farm activities preferred trading (32.1%) and service (41.1%) activities. Considerable percentages of participation in agro-processing and artisanal activities were also noted with 8.9% and 17.9% respectively.

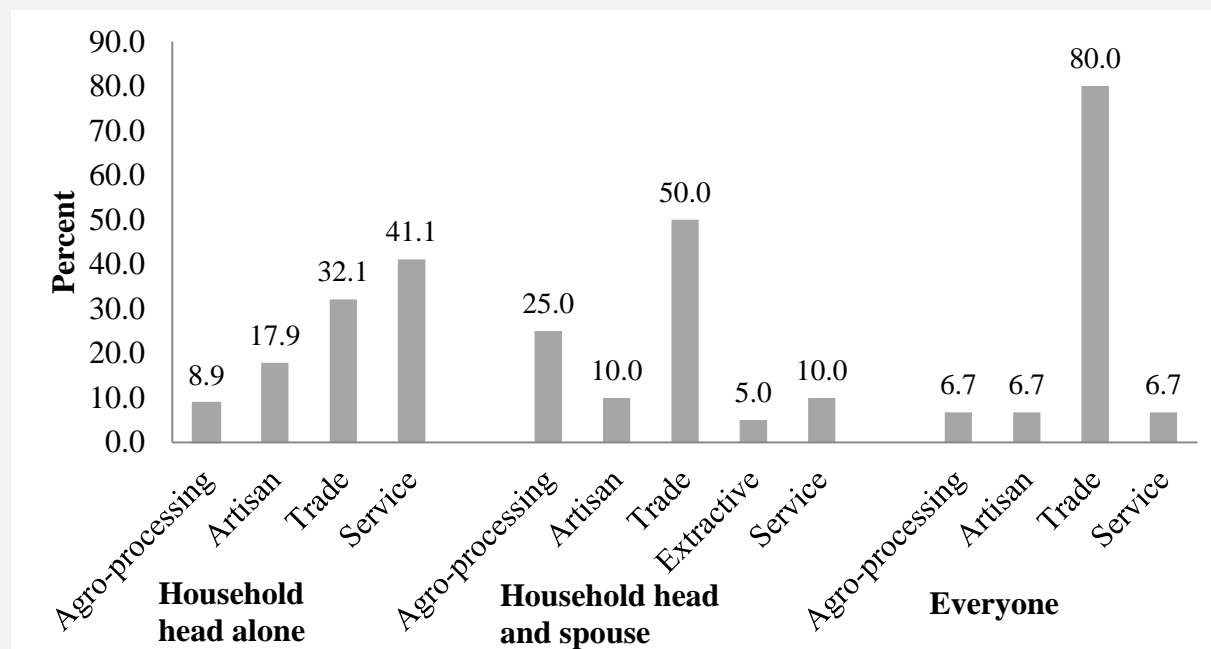


Figure 7: Distribution of Types of NFAs and Participation

A higher percentage of households (80%) where everyone participated preferred trading activities. Agro-processing, artisan and service activities was least preferred by these households with only 6.7% each. There were no extractive activities in both households where the household head alone and everyone participated. In the case of households where everyone participated, it is agreeable considering the fact that some non-farm activities require specific skills that a few

members of the households may have. On specific occasions when the household head was absent or involved in a concurrent family activity, the spouse or children ran the non-farm trading activities which requires less skills.

4.5.3 Time Spent on Non-Farm Activities

The time spent per day on non-farm activities was assigned categories of 0-5, 6-11 and more than 11 hours. Approximately, 15.4% of the households spent an average of 0-5 hours in a day while 70.3% spent an average of 6-11 hours. In contrast, 14.3% of the households spent an average of over 11 hours. The distribution of time spent on non-farm activities is shown in Table 15:

Table 15: Amount of Time Spent on NFAs

Time in hours	Frequency	Percentage
0-5	14	15.4
6-11	65	70.3
>11	13	14.3
Total	92	100.0

Source: Survey data, 2012

There were few households spending over 11 hours a day on non-farm activities. According Zerai and Gebreegziabher (2011), a household allocates its total time endowment, among farm work, market work, non-farm activities and even leisure. Most households in Cheborge Division are primarily dependent on agriculture and therefore, most available labour and time is shared among farm and non-farm participation. Most of the respondents worked in the farms then later in the day moved to the non-farm activities. This explains why they did not spend so much time in the non-farm activities.

Further analysis of types of NFAs and amount of time spent by households in Figure 8, shows that there is more prevalence in trading (42.9%) and service (28.6%) activities among households spending upto five hours a day. Households spending over 11 hours a day mostly preferred artisan and trading activities. Households spending upto five hours a day did not prefer

extractive activities. This is because artisan and trading activities require a lot of time as opposed to trading and service activities.

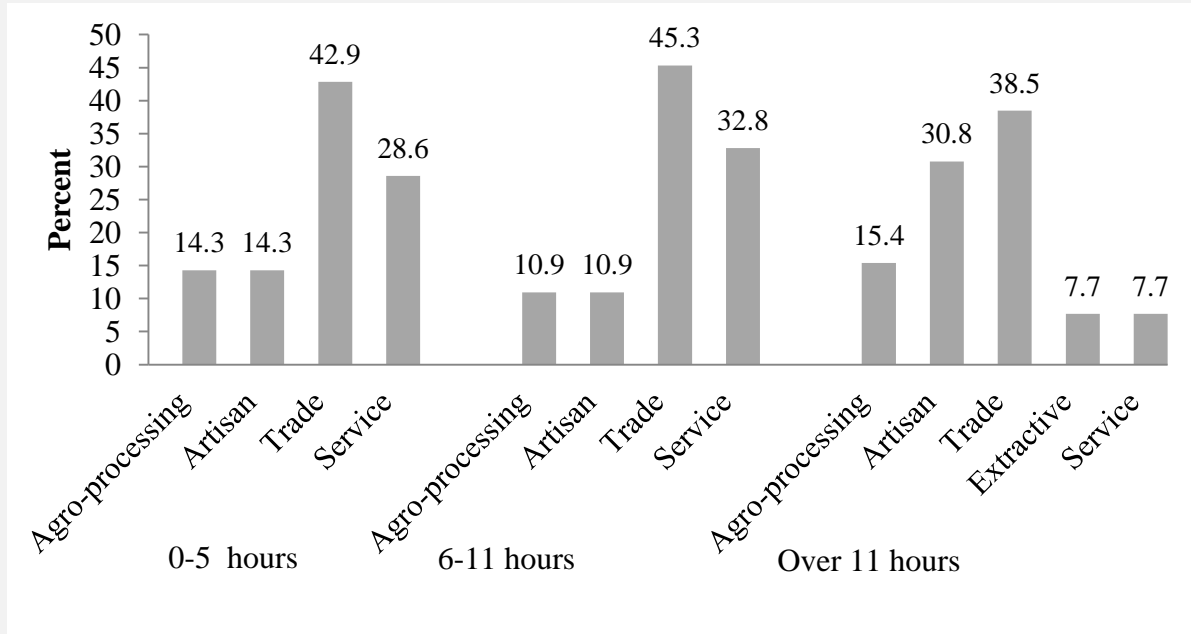


Figure 8: Distribution of Types of NFAs Undertaken by Households and Time Spent

Scores were assigned to each of the variables (number of NFAs, who participates and time spent in NFAs). Five levels were then developed by getting the sum of scores exhibited by the respondents. The level of participation results are shown in Table 16. Three was the lowest possible score while 11 was the highest possible score. With this basis, a scale ranging from two to 11 was arrived at to cater for the respondents’ scores. The indices and scores used in this study were:

- Very low 3
- Low 4-5
- Moderate 6-7
- High 8-9
- Very high 10

Table 16: Levels of Participation of Households in NFAs

Levels	Frequency	Percentage
Very low	44	47.8
Low	28	30.4
Moderate	20	21.7
High	0	0
Very high	0	0
Total	92	100

Source: Survey data, 2012

According to Table 16, the findings of this study show that nearly half (47.8%) of the households had very low participation while about 30.4% were those with low participation. In contrast, only 21.7% of the households had a moderate participation in non-farm activities. No households in the division recorded a high or very high participation. A lack of high or very high participation in NFAs could be because the respondents complained of poor infrastructure (electricity, roads) high taxes and a lack of capital to expand. Bad roads that hinder easy transport to the interior parts of the division characterize Cheborge Division. Additionally high taxes imposed on small businesses also affect easy venture into the non-farm activities. A lack of capital to start and expand the non-farm activities also limits households' participation in NFAs. Evidence from a multicountry analysis on assets, activities and income generation in developing countries (Ghana, Panama, Bangladesh and Vietnam among others) reveals that access to infrastructure and population centers is likely to increase opportunities in non-farm activities (Winters *et al.*, 2009). Infrastructure such as electricity is a useful input for certain self-employment activities such as welding.

4.6 Indicators of Living Standards of Households in Cheborge Division

The variables indicating living standards included the type of housing (characteristic of main house or shelter), number of meals in a day, access to education for dependants and access to health care. Indicators for measuring living standards were assigned scores and three levels were developed for the scores (high, medium and low).

The levels and scores used were:

Low	6-10
Medium	11-15
High	16-20

A household with low living standards implied that they had one meal a day, the roofs of their houses were grass thatched, the floor was just dirt or smeared and the walls were made of mud. In addition, their children attended public schools and got medical attention from public health facilities. A household with medium living standards implied that they had two meals a day, roofs were made of iron sheets, with smeared or cemented floors and wooden or brick and stone walls. In addition, their children attended public schools or private low cost schools and they got medical attention from public health facilities or even private low cost health facilities. An example of household with high living standards is one with more than two meals a day, roofs were tiled and cemented floors while walls were made of bricks or stones. Additionally, children attended private high cost schools and they got medical attention from private high cost health facilities.

4.6.1 Type of Shelter

In gauging the type of shelter, the characteristics of main or family house were considered. These were materials used on walls, which were mud, wood, bricks or stone. Floors were either dirt, smeared or cemented. Roofing materials were either grass thatched, iron sheets or tin and tiles. Close to 40% of houses had the walls made of mud with 24.9% made of brick or stone. More than half of the houses (60%) were smeared on the floor and nearly 40% were cemented. Majority of roofs in the houses (93.8%) were made of iron sheets with only 1.6% made of tiles as presented in Table 17:

Table 17: Characteristics of Main or Family House

Characteristic of main or family house	Frequency	Percentage
Wall		
mud	77	39.9
wood	68	35.2
brick/stone	48	24.9
Total	192	100.0
Floor		
smearred	116	60.1
cement	75	39.9
dirt	0	0
Total	192	100.0
Roof		
Grass	9	4.7
Iron sheets/tin	180	93.8
Tiles	3	1.6
Total	192	100.0

Source: Survey data, 2012

4.6.2 Number of Meals per Day

Household members would either have one, two or more than two meals per day. Majority (87%) of household members had more than two meals per day as shown in Table 18. This finding is contrary to a study done by IFAD (2009), that in Kenya, most households limit their food intake to one or two meals a day.

Table 18: Number of Meals per Day in a Household

Number of meals	Frequency	Percentage
1meal	2	1.0
2 meals	23	12.0
>2 meals	167	87.0
Total	192	100.0

Source: Survey data 2012

According to Figure 9, further analysis of participation in NFAs and number of meals per day shows that majority (92.4%) eat more than two meals a day for participants compared to 83.2% of non-participants.

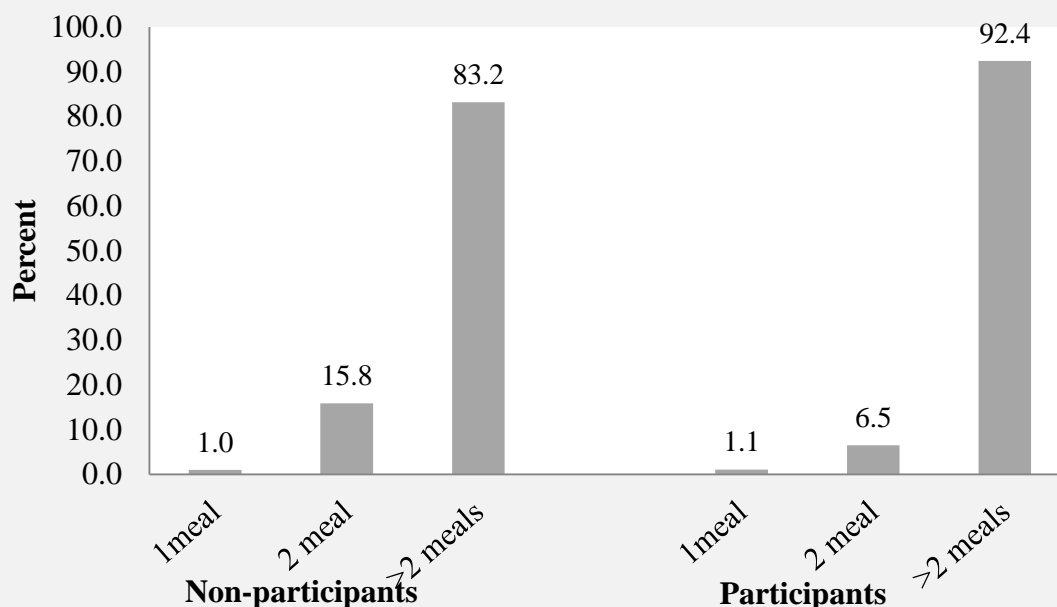


Figure 9: Number of Meals per Day and Household's Participation in Non-Farm Activities

4.6.3 Access to Education for Dependents

The respondents were asked whether their children were in school or not and the schools attended by their children. The schools were categorized into public, private low cost or private high cost schools. Results in Table 19 show that three quarters (75%) attended public schools while only 2.1% attended private high cost schools.

Table 19: Access to Education

Schooling for Children	Frequency	Percentage
Public school	144	75.0
Private low cost	44	22.9
Private high cost	4	2.1
Total	192	100

Source: survey data, 2012

According to results in Figure 10, access to education among participants and non-participants in NFAs is different. Majority (85.1%) of children from those households that do not participate in NFAs attend public schools while only 12.9% attend private low cost schools.

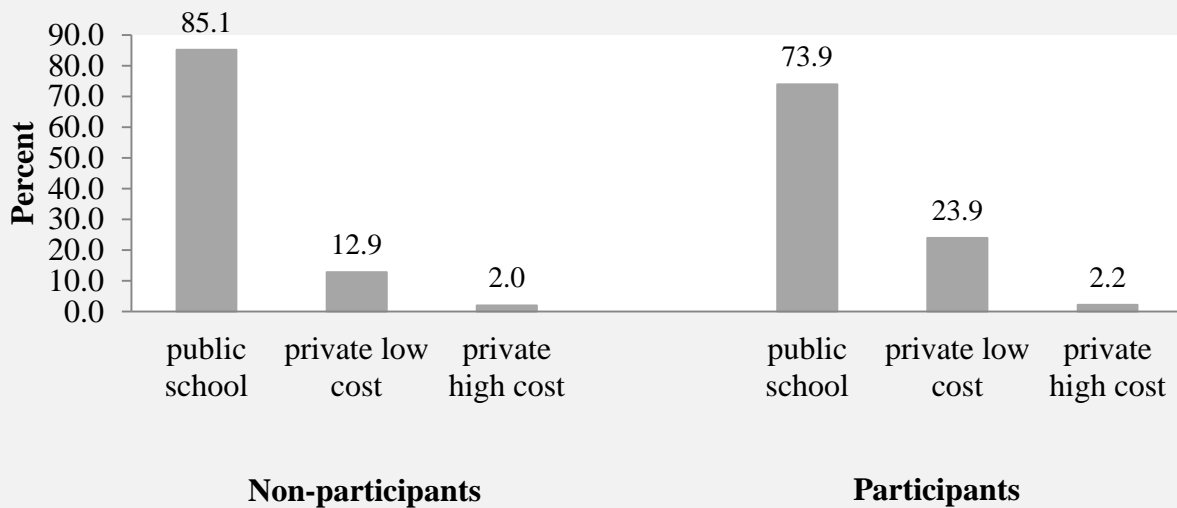


Figure 10: Access to Education and Household’s Participation in Non-Farm Activities

4.6.4 Access to Health care

Respondents were asked whether they got their medical attention from public or private hospitals or from traditional doctors. As shown in Table 20, households that got medical care from public hospitals were 94.3% with only 3.1% getting private health care. About 98.4% said that their medical services were affordable. The Government of Kenya, through the Ministry of Public Health and Sanitation has opened dispensaries and health sectors across the country (GOK, 2011). All Kenyans including households in Cheborge are entitled to health care provided through government facilities if they can pay user fees. Through tax revenue, the government subsidises all services provided in public health facilities and meets the costs of waivers and exemptions for specific groups of the population for example, children under five are exempted from any user fees, antenatal services and specific health conditions (Chuma & Okungu, 2011). This is because the achievement of the physical and mental well being of the people is critical to the development of human resources. Though private health facilities are available in Cheborge Division majority of residents preferred public facilities because they are more affordable.

Table 20: Access to Health care

	Frequency	Percentage
Easy access to affordable medical services		
No	3	1.6
Yes	189	98.4
Total	192	100.0
Where to seek medical attention		
Traditional doctor	5	2.6
Public hospital	181	94.3
Private health care	6	3.1
Total	192	100.0

Source: survey data, 2012

The variables indicating the standards of living measured in the study were the type of shelter, number of meals in a day, access to education for dependants and access to health care. These indicators discussed in sections 4.6.1 to 4.6.4 were assigned scores. The lowest possible score was 6 and the highest possible score was 21. From these scores, a three level index was adopted, high, medium and low. A score of six to ten denoted low living standards. scores of 11 to 15 denoted medium living standards while those with high living standards scored 16 and above.

From the calculated scores, 3.1% of households had low living standards while 90.7% had medium living standards as shown in Table 21. Another 6.2% of households had high living standards.

Table 21: Standards of Living

Level of Living Standards	Frequency	Percentage	Mean
Low	6	3.1	9.8
Medium	175	90.7	13.1
High	11	6.2	16.2
Total	192	100	13.2

Source: Survey data, 2012

Considering participation in NFAs, 66.7% of households with low living standards did not participate in NFAs as opposed to 33.3% of those that participated. Only 25% of households with high living standard did not participate in NFAs while 75% participated. This means that households that participated in NFAs had better living standards as compared to those that did

not participate (Table 22). Households that participate in NFAs get more income and are able to pay school fees, buy food, build better houses and pay for medical services.

Table 22: Living Standards of Households that Participated in NFAs and those that did not

Household participation in NFAs	Living standards index		
	Low	Medium	High
No	66.7%	53.7%	25%
Yes	33.3%	46.3%	75%
Total	100%	100%	100%

Source: survey data, 2012

According to Table 23, majority (83.3%) of households with low living standard had between one to five family members while no household with high living standard had more than 15 members. All the households with low living standard had farm sizes of less than five acres as compared to 80.6% of those with medium living standard. This is probably because households with bigger farms can sell their farm produce to get more money, which is used to obtain family needs.

Table 23: Characterization of Households Exhibiting Low Medium and High Living Standards

Household characteristic	Living standards index		
	Low	Medium	High
Family size			
1-5	83.3%	58.3%	66.7%
6-10	16.7%	38.9%	33.3%
11-15	0.00%	2.3%	0.00%
>15	0.00%	0.5%	0.00%
Farm size(acres)			
0.1-5	100%	80.6%	66.7%
6-10	0%	18.9%	33.3%
11-15	0%	0.6%	0%
>15	0%	0%	0%

Source: survey data, 2012

4.7 Relationship between Levels of Participation in NFAs and Living Standards

The hypothesis tested stated that there is no significant relationship between levels of participation of households in non-farm activities and living standards. The levels of participation as earlier mentioned were very low, low, moderate, high and very high and the standard of living indexes were low, medium and high. There were approximately 2.3% of households with low living standards having very low participation in NFAs while 2.8% of households with low level of participation had low living standards. No household with low living standards had a moderate participation. Another 84% of households with very low participation had medium living standards while 91.4% of those households with low level of participation had medium living standards. The findings show a negative trend in relationship between levels of participation in NFAs and living standards. However, findings by Carleto *et al.* (2007) show a positive trend between household welfare status and participation in NFAs. A study done by (DFID, 2002) shows that non-farm activities may provide incomes that are too low or inadequate for basic human needs. This may be because some of the NFAs require the expertise, machinery and infrastructure to operate which some of the household heads do not have.

A Chi-square test was used to determine whether there is a relationship between levels of participation in NFAs and living standards of rural households. The hypothesis was tested at 5% level of significance. No significant relationship was found to exist. The null hypothesis was not rejected because χ^2 value of 1.747 is not significant at $\alpha=0.05$ ($P>0.05$). The chi-square test results are shown in Table 24:

Table 24: Cross Tabulation of Relationship Between Level of Participation and Living Standards

Living Standards index	Level of Participation Index			
	Very low	Low	Moderate	Total
Low	2.3%	2.9%	0.0%	2.2%
Medium	84.1%	91.4%	91.7%	87.9%
High	13.6%	5.7%	8.3%	9.9%
Total	100%	100%	100%	100%

$\chi^2 = 1.747$, $df = 4$, $P = 0.782$

significance level = 0.05

Source: Survey data, 2012

Majority (88%) of households in Cheborge Division participated in non-farm activities because of push factors. When households are pushed into non-farm activities, they end up in unskilled low return wage or income activities (Gordon and Craig, 2001). Barrett *et al.* (2001), adds that, rural households adjust their activities either to exploit new opportunities created by market liberalization or to cope with livelihood risks. Furthermore, Ellis (1998) adds that rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival. This therefore means that households end up in survival-led and low return activities and may not be able to have a potential economic gain from the activities. This trend in participation may explain why there is no significant relationship between levels of participation in non-farm activities and standards of living in Cheborge Division.

4.8 Difference in Living Standards of Households that Participated in NFAs and those that did not

An independent-samples T-test was used to compare the living standards of households that participated in NFAs and those that did not. The tested hypothesis stated that there is no significant difference in the living standards of households that participated in non-farm activities and those that did not. The results are shown in Table 25:

Table 25: Living Standards of Participants and Non-Participants in NFAs

	Participants	Non-participants	t	df
Living standards	13.5	12.98	-1.951	191
SD	1.41	1.51		

t (191) = 1.951, p= 0.015 significance level = 0.05 SD=Standard Deviations

Source: Survey data, 2012

The calculated mean of living standards of households that participated in NFAs is 13.5 with a SD of 1.41 while that for households not participating was 12.98 with a SD of 1.51. Since calculated p is less than 0.05 level of significance, the null hypothesis is not accepted therefore, there is a significant difference between the living standards of households that participated in non-farm activities and those that did not. The living standard indices were low, medium and high. Reardon (2000), found that households with greater income diversification were able to buy food and withstand the effects of the drought and tended to have higher overall incomes than those who were not able to supplement their farm incomes with non-farm income generating activities. Additionally, these activities generate income that is often a major source of savings for farm households that are often used for food purchase in difficult times (Gordon & Craig 2001).

While the nature of the diversification response will vary by a given household in each country, overall greater reliance on non-farm sources of income is associated with greater wealth (Davis, 2004). This corresponds to the findings from Cheborge Division, which shows that households that participate in NFAs have better living standards than those that do not. Majority (85.1%) of children from those households that do not participate in NFAs attended public schools while only 12.9% attended private low cost schools. About 12.9% of children from those households that participated in non-farm activities attended private low cost schools while 23.9% are from households that participate in NFAs. Households in Cheborge Division that participated in non-farm activities had better living standards. This could probably be because money obtained from

the NFAs is used to pay for school fees, food and other general family expenses resulting in better living standards.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a summary of the study findings and consequently presents conclusions and recommendations based on the study findings. The chapter also presents suggestions for further research. Rural households have turned to non-farm activities as a means of diversifying their livelihood income sources. The study was motivated by an interest in the need to determine the influence of participation in non-farm activities on the living standards of rural households in Cheborge division. This study provides evidence from 192 rural households in Cheborge division.

5.2 Summary of Findings

The summary of findings in this study was based on the households' characteristics and objectives of the study. The objectives were to determine; factors that motivate households to participate in non-farm activities, the types of non-farm activities that households in Cheborge Division participated in, levels of participation of households in NFAs and the living standards of households in Cheborge Division. The study also determined the relationship between level of participation and living standards and the difference in the living standard of households that participated in non-farm activities and those that did not.

5.2.1 Summary of Household Characteristics in Cheborge Division

The household characteristics studied were age, gender, marital status, household size, farm size and the highest level of education completed by the household head. Majority (88.5%) of household heads were male headed while 11.5% were female-headed. The youngest household head interviewed was aged 20, while the oldest was 80 years old. More than three quarters of household heads were married while 10.5% were single. The average family size most prevalent was between 1-5 members which accounted for 60% of the respondents while those with 6 - 10 members accounted for 37.8%. Findings show that households with farm size of 0-5 acres constituted the largest percentage. However, none of the households had more than 15 acres of

land. About 5.9% of household heads completed university while 23.9% completed college. Those that completed secondary school level were approximately 47.3%. Approximately, 18.1% completed primary school level while 4.8% had no schooling at all.

5.2.2 Factors Motivating Households to Participate in NFAs in Cheborge Division

Factors motivating households to participate were divided into pull and push factors. The push factors were income stabilization, small farm sizes and lack of market for agricultural produce. Pull factor was profit maximization. A higher percentage (88%) of households were pushed into non-farm activities while only 12% participated in non-farm activities because of pull factors.

5.2.3 Types of NFAs in Cheborge Division

Types of NFAs were divided into trading, agro-processing, artisan, extractive and service activities. Trading activities by far constituted the largest portion of 52.3% followed by services with 22.9%. Agro processing, artisan and extractive constituted small percentages of 9.2%, 11.9%, and 3.7% respectively. There were more trading and service activities among households with only one activity. Agro-processing and extractive types of activities were the least preferred among households with one activity. Households with more than two activities preferred trading, agro-processing and service activities. Households spending over 11 hours a day mostly preferred artisan and trading activities while households spending upto five hours a day did not prefer extractive activities.

5.2.4 Levels of Participation of Households in NFAs

To obtain the levels of participation of households in non-farm activities three variables were used; the number of non-farm activities (one, two, three) who participates in non-farm activities (household head alone, household head and spouse, everyone in the household) and the time spent on those activities (0-5hrs, 6-11 hrs, 12-18 and >18 hours per day). Levels of participation were categorized as very low, low, moderate, high and very high.

Findings of this study show that there were 47.8% households with very low participation, 30.4% with low participation and 21.7% with moderate participation. No households recorded

high or very high participation in NFAs.

5.2.5 Living Standards of Households in Cheborge Division

The variables indicating living standards included the type of housing (characteristic of main house or shelter), number of meals in a day, access to education for dependants and access to health care. Findings in this study show that about 3.1% of households had low living standards while 90.7% had medium living standards. Close to 40% of houses had the walls made of mud with a few made of bricks or stone. More than half of the houses (60%) were smeared on the floor and nearly 40% were cemented.

Majority of roofs in the houses were made of iron sheets with only 1.6% made of tiles. Majority of household members had more than two meals per day. About 75% of their children attended public schools. While 98.4% obtained their medical attention from public health facilities and said that, their medical services were affordable. About 66.7% of household with low living standards did not participate in NFAs as opposed to 33.3% of those that participated. Majority of household with high living standard participated in non-farm activities.

5.2.6 Relationship between Levels of Participation in NFAs and Living Standards

The living standard indices were low, medium and high while those for participation in NFAs were very low, low, moderate, high and very high. A Chi-square test was used to determine whether there is a relationship between levels of participation in NFAs and living standards of rural households. No significant relationship was observed. The hypothesis was tested at 5% level of significance. No significant relationship was observed. The null hypothesis was not rejected because χ^2 value of 1.747 is not significant at $\alpha=0.05$ ($P>0.05$).

5.2.7 Difference in Living Standards of Households that Participate in NFAs and those that do not.

An independent-samples T-test was used to compare the living standards of households that participated in NFAs and those that did not. The calculated mean of living standards of households that participated in NFAs is 13.5 while that for households not participating was

12.98. The findings of this study show a significant difference in the living standards of households that participated in non-farm activities and those that do not.

5.3 Conclusions of the Study

The following conclusions were derived from the findings of this study:

Majority of households were pushed into participation in non-farm activities while only a few were pulled into the activities. When households are pulled into non-farm activities, they end up in low return, wage activities. The most preferred types of activities were trading and service activities while artisan, agro-processing and extractive were the least preferred types of non-farm activities. Trading and service activities do not require specialized skills to operate and low capital is required to start.

Households in Cheborge Division had varying levels of participation in non-farm activities. Nearly half of the households recorded very low levels of participation in NFAs with none having high or very high participation. Despite the efforts being made by households to attain better living standards through participation in non-farm activities, some of them still remained in poor conditions. Majority of households had medium living standards with others having low and high living standards.

No significant relationship between levels of participation in non-farm activities and living standards was observed. This is because households have undertaken the various non-farm activities without proper expertise and resources to realize quality returns to enhance their living standards. The results are a confirmation of the previous findings that there are statistically significant differences between living standards of households that participated in non-farm activities and those that did not. Households that participated in non-farm activities have better living standards than those that did not participate.

5.4 Recommendations of the Study

On the basis of the findings of this study, the following recommendations were made:

Policies that are geared towards strengthening the rural non-farm sector should target the young rural population by improving their capacity since they are more likely to take up opportunities

in the rural non-farm sector. Advancing individual capabilities needs far more attention in the rural development agenda. Rural women, men, youth and children all need to develop the skills and knowledge to take advantage of new economic opportunities in the rural non-farm economy, or in the job market beyond the rural areas. Government's investment is particularly needed in post-primary education, technical and vocational skills development,

Policy makers in the Government together with those in the non-governmental organizations should intensify education to permit rural dwellers to participate in non-farm activities. There is need, therefore, for educational curricula that emphasize knowledge and skills relevant to living and working in rural areas. There should be better promotion of RNFAs since they have the potential to improve the living standards of rural households. This will also help the harmonious growth of farm and non-farm activities since cash obtained from NFAs can be invested in the farm.

Household heads should be encouraged to participate in non-farm activities in order to attain better living standards. Policy makers in the government, donor and development agencies should open up markets to target trading and service activities since most households prefer. This should be done by making financial services widely available to rural communities to enable growth of the non-farm activities.

5.5 Suggestions for Further Research

- 1) Further research needs to be done in the same area of non-farm activities with special emphasis on sustainability of the non-farm activities that households engage in.
- 2) Research in the future needs to focus on how assets in a household may determine the levels of participation in non-farm activities.
- 3) Research in future needs to find out why there is no significant relationship between the levels of participation of households in non-farm activities and living standards.

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Serial No: _____

APPENDIX A: INTERVIEW SCHEDULE FOR HOUSEHOLD HEADS

PART (A): DEMOGRAPHIC INFORMATION

It is a pleasure to notify you that this study is intended to determine influence of participation in non-farm activities on living standards of rural households in your division. Your responses will be treated as confidential and for research purposes only.

1. Household heads name (optional).....
2. Gender Male [] Female []
3. Age of household head.....years
4. Marital status a) Single [] b) Married [] c) Widow [] d) Widower []
e) Separated []
5. What is the size of your household (number of family members)

a) 1-5 [] b) 6-10 [] c) 10-15 [] d) >15 []
7. (a) What is the size of your farm in acres?
a) 0.1-5 [] b) 6-10 [] c) 11-15 [] d) >15 []

(b). Do you utilize all your farmland Yes [] No [] Give reasons

PART B: PARTICIPATION IN NON-FARM ACTIVITIES

8. Does your household participate in non-farm activities? Yes [] No [] Give reasons
(If No skip to 21)

-
9. If answer above is yes, who in your household participates in non-farm income generating activities?
a) The household head alone []
b) The household head and spouse []
c) Everyone in the household []

10. Which non-farm income generating activities do you participate in as a household? (List activities for all household members)

Agro-processing _____

Artisan _____

Trade _____

Extractive _____

Service _____

11. How many activities do you participate in as a household? Include activities for all members.

a) 1 [] b) 2 [] c) >2 []

12. How much time does your family allocate to non-farm activities in a day?

a) 0 to 5 hrs [] b) 6 to 11 hrs [] c) 12 to 18 hrs [] d) >18 hrs []

13. State reasons for your participation in the non-farm income generating activities. _____

14. Does the location of your farm affect your participation in non-farm activities? Give reasons for your answer _____

15. What is your average household income from non-farm activities per week?

0-500 []

501-1000 []

1001-2000 []

2001-3000 []

3001 and above []

(ii) Does this vary from season to season? [] YES [] NO

If yes how and why?

16. How would you rate your household's participation in non-farm activities?

- a) Very high
- b) High
- c) Moderate
- d) Low
- e) Very low

17. If production on your farm improved to give enough food for the family, would you continue with your non-farm activity? Yes No

Give reasons _____

18. What benefits do the household derive from participation in non-farm activities?

19. What do you think should be done to improve your participation in non-farm activities?

20. What do you think should be done to improve your living standards?

PART (C): LIVING STANDARDS OF HOUSEHOLDS

21. On average how many meals do household members eat in a day? Circle one

- a) 1
- b) 2
- c) 3

22. Where does the food come from?

- a) Own farm
- b) Market
- c) Donations
- d) Other (specify) _____

23. What is the average family expenditure (in KSH) on food per week?

0- 500 []

501-1000 []

1001-2000 []

2001-3000 []

3001and above []

24. What are the characteristic of your main/ family house?

(a) Walls are Wood [] Mud [] Brick / stone []

(b) Floor is Smeared [] Cement [] Dirt []

(c) Roof is Grass thatched [] Iron sheets (tin) [] Tiles []

(d) Condition of home is Excellent [] Good [] Fair [] Poor []

25. What is the highest year of school you completed?

Primary school []

Secondary school []

College []

University []

No schooling []

26. (a) Are your children in school? Yes [] No []

(b) If yes circle for all school going children (indicate the no. of children inside the box)

Pre unit/nursery []

Primary school []

Secondary school []

College / University []

27. If question 26 above is Yes, which school do your children go?

[] a) Public low cost school [] b) Public high cost school c) Private low cost school []

c) Private high cost school []

28. Have you undergone any vocational training? Yes [] No []. If yes

a) State what skills you have.

Carpentry []

Tailoring []

Masonry []

Driving []

Other (Specify)_____

State the level of training in the skill(s)

a) No certification []

a). Certificate []

b). Diploma []

c). Degree []

29. Are medical services affordable to you? Yes [] No []

30. Are medical services accessible to you? Yes [] No []

31. Where do you seek medical attention?

a) Traditional doctor [] b) public health care [] c) Private health care []

32. Give reasons for your answer above

Thank you for your cooperation

APPENDIX B: RESEARCH PERMIT

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
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Website: www.ncst.go.ke

Our Ref:

NCST/RCD/10/013/9

Date:

8th March, 2013

Winfred Chepkoech
Egerton University
P.O.Box 536
Egerton.

RE: RESEARCH AUTHORIZATION

Following your application dated *11th February, 2013* for authority to carry out research on "*Influence of participation in non-farm activities on living standards of rural households in Cheborgei Division, Bureti District, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Bureti District** for a period ending **30th April, 2013**.

You are advised to report to **the District Commissioner and the District Education Officer, Bureti District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR M.K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner
The District Education Officer
Bureti District.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development"

