

**LIVELIHOOD DIVERSIFICATION AND SUSTAINABILITY: THE CASE
OF FLOOD PRONE AREAS OF BUDALANG'I CONSTITUENCY, BUSIA
COUNTY**

BY

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DECLARATION

This project paper is my original work and has not been submitted for a degree or any other academic qualifications to any other University or institution.

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This project paper has been submitted for examination with our approval as University supervisors.

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DEDICATION

To the people of Budalang'i who have been affected by floods since 1937, may this study lead to a solution to the problems you face as a result of the floods.

To my nephews Willis, Job and Brighton, may this study be an inspiration for you to pursue higher education.

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Special thanks goes to my loving parents; Mzee Domiano Auma and Mama Rispa Makokha. Mzee, despite his sickness and financial huddles, he ensured that I pursue my education. The virtues of hard work and discipline he instilled in me have helped me reach these academic heights. Mama, the objections she faced not to educate her daughters did not prevent her to send me to school. The continued encouragement she gave me made me fulfil this dream. To my brothers John, Kenyatta and sisters Nekesa and Rahab who sacrificed a lot for me and always encouraged me to pursue higher education; I am greatly indebted.

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ABSTRACT

Natural disasters continue to cause deaths, injuries, and economic losses around the world. One such disaster is floods. Flooding in Kenya is experienced perennially and most affected areas are Budalang'i, Nyatike, Kano plains and Lower parts of Tana River. Budalang'i flood plain has experienced floods since 1937 up to 2013. These floods have had effects on the livelihoods of the people in Budalang'i flood plain hence the residents have learnt to survive with the effects by employing several coping strategies. These coping strategies have developed into alternative livelihoods over the years, however, they seem to be unsustainable since there are high rates of absolute poverty and people are always in need of help during floods. This study therefore sought to examine why the livelihoods of households in Budalang'i flood plain remained unsustainable over the years. Specifically, the study sought to address three research objectives: first was to find out the livelihood diversification strategies adopted by households due to the perennial floods; second was to establish the determinants of livelihood diversification strategies employed by the households in Budalang'i and finally to examine the factors influencing the sustainability of the households' livelihood diversification strategies adopted.

The study population comprised of households that were mostly affected by the occurrence of floods and this were mainly in Bunyala Central but some were also in parts of Bunyala West. The study used two methods of data collection which included household survey and key informant interviews. A sample of sixty households were selected for the household survey while eight key informants who included two chiefs of the two locations, four village elders, an official from government and non-governmental organization in the area. The study findings revealed that the respondents still regard crop farming as their major source of livelihoods despite the perennial floods. The respondents are also involved in fishing, small scale business, casual work on the farms and some are employed in low paying jobs.

Livelihood diversification of the household was determined by several factors. The study revealed that age, level of education, social and financial assets determined the alternative livelihood chosen. On sustainability of livelihoods, the study revealed that small farms owned by the respondents produced low yields which could not take them for long period of time. In addition, expenses such as school fees were said to contribute to faster depletion of income.

Overfishing in Lake Victoria has led to reduction in fish stock and as a result affecting the income of fishermen leading to unsustainable livelihoods in the area. Furthermore, the continued disruption of farms, food store and assets by floods has always resulted to unsustainable livelihoods. The view of alternative livelihoods as fall back activities just for survival also made respondents not to invest much in them leading to low returns and eventually unsustainable livelihoods.

The study therefore recommends that the residents of Budalang'i flood plain should be educated on meaningful investment on alternative livelihoods and also be offered grants for the investment so that they can have sustainable livelihoods.

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LIST OF ABBREVIATIONS

AMPATH	Academic Model Providing Access to Healthcare
APHIA	AIDS, Population and Health Integrated Assistance
DFID	Department for International Development
GOK	Government of Kenya
HIV/AIDS	Human Immunodeficiency Virus Infection / Acquired Immunodeficiency Syndrome
UNICEF	United Nations Children's Fund
WCED	World Commission on Environment and Development

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Almost every year, natural disasters around the world cause deaths, injuries to people and animals, and destruction and loss of property, financial and economic resources (Dilley, 2005). These disasters range from droughts, floods, famines and landslides among others. One of the disasters that have the greatest effect is floods. According to Douben (2006), cited in Eakin (2008), flood occurrence in the world continues to rise. This is due to climatic changes, expansion of settlements in flood prone areas and changes in land use (Kundzewicz and Kaczmarek, 2000 cited in Eakin, 2008). This increased frequency of disasters such as floods throughout the world is an indicator of unsustainable development (UN 1994; Burton *et al.* 1993). In Kenya, floods are experienced perennially and are said to take back many years of development since they cost the government lots of resources in reconstruction and recovery (Government of Kenya- GoK, 2006). Generally, river floods affect most areas in the country although Kano plains, Nyatike, Budalang'i, and the lower parts of Tana River experience severe floods (GoK, 2009). In addition, areas of Kilifi, Kwale, Garrisa, Wajir and Ijara also experience floods. People with structures located near rivers in urban centres such as Nairobi, Nakuru and Mombasa among others are also affected (GoK, 2009).

According to Government of Kenya (2009), floods may occur due to natural factors such as accelerated runoff, when a river breaks its banks and due to wave activity from tropical cyclones, tsunamis and storm surges. In addition, manipulation of water sheds, drainage basins and flood plains also lead to the frequency of floods.

River Nzoia which originates from Mt Elgon is the major cause of flooding in Budalang'i (GoK, 2009). The river carries a lot of sediments which flow through the low land regions of Budalang'i to Lake Victoria. The sediments reduce the discharge capacity of the river channel between the levees leading to overtopping causing floods in Budalang'i (GoK, 2009). Other causes attributed to this include; land mismanagement destruction of forests and water sheds in upper catchment areas of river Nzoia over many years which has made the river basin vulnerable to massive soil erosion and siltation resulting in frequent floods. The increasing settlements on

the river basin and the associated industrial development have further worsened the problem (GoK, 2009).

Before the construction of the existing dykes in Budalang'i, river Nzoia flowed to Lake Victoria through natural levee system raised around the surrounding flood plain. The river channel was unstable, changing course frequently and as a result, when high flows occurred the river readily flooded the surrounding areas (GoK, 1981). The first recorded incident of floods was in 1937 although it is possible that this had been happening regularly prior to this point. Government records further show that there were frequent floods on average every two years through the late 1950s and 1960s. This was attributed to heavy rainfall in the upper catchment areas of river Nzoia. In 1961/62 heavy and wide spread rainfall which occurred in November 1961 caused overbank spills which led to flooding. Consequently, the government constructed the existing dykes on the top of the natural levees between 1965 and early 1986 (GoK, 2007), the intervention proved successful in preventing occurrence of floods up to 1997. According to GoK (2009) the Elnino rains in October and November 1997 damaged the dykes extensively leading to heavy flooding and consequently affected about 12,000 people in the area. In addition, flooding continued to be reported in Budalang'i in 2002, 2003, 2007, 2008, 2009, 2011 and 2013 due to heavy rainfall and subsequent breaching of the dykes (GoK, 2009; Daily Nation 2011,2013).

Floods have had both devastating and positive effects on the lives of people in Budalang'i. According to GoK (2009), floods deposit alluvial soils which are very fertile for farming. Fishing is also encouraged in the sense that flood waters come with different species of fish from rivers upstream. As a result fishermen benefit as they are able to harvest them easily and sell.

Amidst the positive effects there are devastating effects of floods in Budalang'i. Floods cause displacement of people with homes swept away or submerged in water, this causes considerable loss of human lives and livestock (GoK, 2009). The displaced people move in with relatives located in the upper areas or end up staying in camps at the health centers, schools and other areas on higher grounds. This leads to breakdown of social organization systems hence subjecting women and children to violence and sexual abuse (GoK, 2006). In addition, roads and

other infrastructure are destroyed and rendered impassable causing interruption in the supply of essential goods and services.

Floods mostly occur when people have cultivated and planted crops in the farms GoK (2006). These crops are washed away or submerged and left to rot. In addition, the farmland becomes waterlogged reducing the potential for continued plant growth. Furthermore, harvested stockpiles in granaries are swept away hence polluting the Lake with organic matter. All these impact the local economy negatively.

Floods pollute water and destroy sanitation facilities hence compromising public health. As a result water is contaminated leading to increased prevalence of water-borne diseases such as malaria, cholera, diarrhoea and typhoid (GoK, 2009; Osbahr and Viner, 2006). These diseases constrain the people's capabilities to make a living.

The major source of livelihood in Budalang'i is crop farming (Bunyala District Development Plan, 2008-2012; GoK 2009)¹. Majority of the households use the flood plain for farming but there has been a decline over the years as the population increases and much of the flood plain remains under water following flood occurrences. Although this flood plain is considered highly productive due to the sediments deposited, the area is not food secure and this is largely attributed to the periodical devastation caused by floods and the fear of flooding that has been instilled in the minds of farmers creating disincentives for investment in farming. Despite all these challenges, people in Budalang'i are not willing to leave their ancestral land for safer places (Opere, 2004). According to Bryceson (1996) and Ellis (1998) the occurrence of risks and threats makes households or individuals to diversify their activities in order to mitigate the threat. This is evident in Budalang'i in that people have survived in this environment over the years by adopting alternative livelihoods such as cattle rearing, casual labour, charcoal burning, brick making, and basketry alongside farming to make a living due to the perennial problem of flooding (Matui, 2009). However, Budalang'i is one of the poorest regions in Kenya with an

¹ Budalang'i constituency covers the same area as Bunyala district

absolute poverty of 68% (Bunyala District Development Plan, 2008-2012). In addition flood damages in Budalang'i have continued to cost the government a lot of money for instance in 2006 Eitel and Ochola indicated that annual flood damages amounted to about US\$4.8 million in Budalang'i, while another study in 2009 by GoK estimated that the annual average cost of floods was US\$800,000 plus a further US\$1,000,000 to provide emergency relief and rehabilitation for around 12,000 people (GoK, 2009). This emergency relief has been said to create a dependency syndrome among the locals. This reality illustrates that the alternative livelihoods adopted by the people of Budalang'i due to the perennial problem of flooding over the years are not sustainable hence calls for the need to understand why they have remained unsustainable.

1.2 Problem Statement

Disasters across the world have always affected people's way of making a living, especially those who live in disaster prone-regions such as floodplains and arid regions. In Budalang'i, the perennial problem of flooding has had devastating effects on people's lives and especially on their livelihoods. Households have learnt to live and survive with these effects by employing several coping strategies in order to make a living hence these coping strategies have developed into alternative livelihoods over the years. However, these alternative livelihoods seem to be unsustainable since there are high rates of absolute poverty and people are always in need of help during floods, prompting the government to put in support in terms of relief and rehabilitation. It was therefore imperative to explore the alternative livelihoods and investigate why they remained unsustainable despite the perennial problem of flooding. The study therefore aimed to find out why livelihoods in flood prone areas of Budalang'i remained unsustainable over the years.

1.3 Research Questions

The overall research question of the study was: **Why have livelihoods in flood prone areas of Budalang'i remained unsustainable over the years?**

This was guided by the following specific research questions:

1. What livelihood diversification strategies have households adopted in response to the perennial floods?

2. What determines the livelihood diversification strategies adopted by households in Budalang'i?
3. What factors influence the sustainability of the households' livelihood diversification strategies adopted?

1.4 Research Objectives

The main objective of the study was: **To understand why livelihoods in flood prone areas of Budalang'i remained unsustainable over the years?**

The specific research objectives include:

1. To find out the livelihood diversification strategies adopted by households due to the perennial floods.
2. To establish the determinants of livelihood diversification strategies employed by the households in Budalang'i.
3. To examine the factors influencing the sustainability of the households' livelihood diversification strategies adopted.

1.5 Study Justification

Due to the effects of floods on the lives of people in Budalang'i, they have developed several ways of making a living but still these ways are not sustainable since there are high rates of absolute poverty and a lot of government support in terms of relief and rehabilitation. Understanding why these livelihoods have remained unsustainable will help in coming up with policies and strategies that target the approach to living with the problem of floods and hence reduction in government spending on emergencies and relief in times of floods.

The knowledge generated by this study will be useful to NGOs, the government and local people in other areas. It will facilitate adoption of appropriate flood management programs in order to mitigate the effects of floods and also enhance sustainable development.

1.6 Study Overview

This report is organized into eight chapters. Chapter one discusses the background of the study, the problem statement, research questions, research objectives and the study justification. Chapter two discusses the literature review and is divided into four sections. Section one has the

theoretical literature, section two has the theoretical framework and section three has the empirical literature. The last section gives the theoretical framework. The research methodology employed by the study is discussed in chapter three in that, it outlines the research design, the description of the study site, population and sampling procedure and the data collection methods and tools.

Chapters four, five, six and seven discusses the study findings. Chapter four gives the findings on the household characteristics in that it looks at the age, gender, marital status and the level of education of the respondent. It also gives the household size. Chapter five gives the study findings of the first research question. The chapter discusses the livelihood activities adopted by households in the study area, the reasons for diversification and the households experience with floods.

The findings of the second research question are highlighted in chapter six in that the determinants of the alternative livelihoods adopted by households in the study area are discussed. The determinants discussed are; the relationship between the age of the respondent and the alternative livelihoods adopted, the relationship between the level of education and alternative livelihoods adopted and the institutions in the study area. Other determinants discussed are the social, financial and physical assets owned by the households.

Chapter seven gives the study findings of the third research question. The chapter looks at the factors influencing the sustainability of the livelihoods in the study area. The factors discussed are; adequacy of the household income, dependence of the respondents on relief aid and the perception of the respondents on their livelihood activities. The chapter also looks at the effects of the livelihood activities on the environment.

Finally, chapter eight gives the summary of the study findings, the conclusions drawn and the recommendations for policy and further research.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

This chapter reviews both the theoretical and empirical literature. The first section reviews the theoretical literature on issues of vulnerability to flooding, livelihood diversification and livelihood outcomes. The second section has the sustainable livelihoods framework and livelihood diversification approach while the third section has the empirical literature on livelihood diversification in flood prone areas, the determinants of those livelihood diversification strategies and the sustainability of those livelihoods.

2.1 Theoretical Literature

This section reviews literature on vulnerability to floods, livelihood diversification and the livelihood outcomes.

2.1.1 Vulnerability to Floods

The concept of vulnerability has diverse definitions and interpretations and is widely used in the natural hazards and food security studies (Chambers 1989; Wisner *et al.* 2004). Vulnerability is a function of physical, social, economic and environmental factors which expose communities to the effects of hazards (Bass *et al.*, 2008). This is also echoed by Opere (2004). Pelling (1999) on the other hand says that it is the socio-political processes by which people are made vulnerable. Pelling (1999) further adds that mitigation strategies towards floods should look into the socio-political factors that lead people to vulnerable situations.

Some of the physical features that determine vulnerability are; surface temperatures, the rise in sea level, changes in precipitation, soil erosion and fluctuations and changes in the course of rivers (Parry *et al.*, 2007). Additionally, changes in the intensity of storms, weather patterns such as droughts, floods and the increased melting of ice-capped mountains also determine vulnerability. Opere (2004) in a study of Lake Victoria basin also identifies high rates of sedimentation, the topography of land, land use practices and deforestation as physical determinants of vulnerability to floods in Lake Victoria basin. The mismanagement of land and destruction of forests in the upper catchment areas of river Nzoia result to soil erosion which lead

to frequent floods in Budalang'i flood plains hence increasing the vulnerability of the residents to floods perennially.

The socio-economic aspect of vulnerability takes into perspective the impact of hazards and disasters on vulnerable groups in society. It also takes into account people's consciousness of risks, their capability to cope and endure, and institutions such as the government and non-governmental organisations that help in managing the effects of hazards (Coburn *et al.* 1991 cited in Inter- American Development Bank 2003). This therefore means that the impact of floods on people living on flood plains will be different for the vulnerable groups such as the children, the disabled, the pregnant women and the elderly hence also affecting their response to floods. Government and non-governmental organisations such as Red Cross and UNICEF have been instrumental in Budalang'i flood plain in that they donate relief aid in form of tents, food and mosquito nets during floods which help the people to cope during floods. Few 2003; Chan and Parker 1996 notes that poverty and vulnerability are interlinked and that the poor live in more flood prone environment than the rich. Davis and Hall (1997) also add that poverty can push people to settle and work in areas located on unstable river banks hence being vulnerable to floods. This view is also echoed by Opere (2004) who mentions that low income levels, lack of human capital and high population expose people to vulnerable situations. However, Baxter *et al.* (2001) differs by arguing that the wealthy can also be affected by floods when there are inappropriate developments on flood plains such as along the coast. The temporary dykes built to contain floods in Budalang'i fail to completely control the floods hence making the residents vulnerable. Additionally, the cultural attachment to land hinders people from relocating to higher grounds and therefore continues to be affected by floods.

Socio-political institutions and cultural dimensions also influence vulnerability to floods (Cardona, 2001). A study by Oluoko (2006) on food security and poverty in Nyando district found out that vulnerability to floods was due to poor flood management policies, lack of adequate preparedness, conflicts, unfocused development plans, population dynamics and overexploitation of natural resources. Cutter *et al.*, (2001) also adds access to information, knowledge, political power, customs and beliefs as other influences to vulnerability. The

continued cultivation of land in Budalang'i flood plain and the building of temporary dykes in the area continue to expose the residents to floods.

2.1.2 Livelihood Diversification

Livelihood encompasses capabilities, assets and activities undertaken by people to make a living (Chambers and Conway, 1991). Capabilities include the education and skills that an individual possesses while assets are the natural, physical, financial and social capital that an individual has access to (Njeru, 2003). On the other hand, Francis (1999) cited in Njeru (2003), state that activities are what the individual or the household is undertaking to make a living. Livelihood diversification is used in this study to imply the pursuit of various livelihood activities in order to meet consumption and economic necessities (Ellis, 1998).

Livelihood diversification exists in three different levels according to Hussein and Nelson (1998). The levels can also be categorized as farm, off farm and non farm income sources (Saith, 1992). Hussein and Nelson (1998) point out that diversification commences when farmers change the composition of their agricultural products such as integrating animals and crops on the farm. This integration helps farmers to access manure, get animal products and also liquid assets (Tiffen *et al.* 1994; Prothero 1957 cited in Hussein and Nelson 1998). The off-farm income sources form the second level of diversification which includes exchange labour on other farms, special labour payments such as harvest share systems and other non wage labour contracts (Saith, 1992 cited in Njeru 2003). People living in disaster prone areas especially in the rural areas will always have farm and off farm alternative activities in order to augment their incomes.

Non-agricultural activities comprise also another level of livelihood diversification. These activities, according to Liedholm *et al.*, (1994) provide up to 45% of full time employment and up to 50% of income for rural households. These employments are becoming important in sub-Saharan Africa and are termed by Brysecon (1996) as de-agrarianisation. Other non-farm sources of income include wage employment, self employment, property income such collections from rent and remittance from relatives who have migrated to urban areas and overseas (Ellis, 1998). In flood prone areas of Budalang'i, farming which is the main source of livelihood is always

affected by floods hence some people have migrated to look for jobs, others engage in wage employment while others get remittance from relatives to augment their incomes.

The motivations and causes of diversification vary with time (Reddy *et al.*, 2006). According to Ellis (1999) people diversify their livelihoods in order to spread risks, to smooth their consumption patterns and to cope with shocks such as hazards. Ellis (1999) further adds that diversification can be motivated by economic instability and the need to accumulate wealth. Bryceson (1996) points out that risk is the primary motive of livelihood diversification. This therefore means that when households are faced with risks, they engage in other alternative livelihood activities for survival. This is the case for Budalang'i flood plain because households face the risk of crop failure due to the perennial occurrences of floods and hence are forced to diversify their livelihoods for survival.

Diversification of livelihoods can also be employed as a coping strategy. According to Blaikie *et al.* (1994) cited in Dewi (2007), coping happens when people and organisation use the available resources in anticipation of a situation to achieve various ends. He adds that people equip themselves with ways of coping with shocks or hazards when they are aware that the shocks may occur in the future because they have experienced in the past. In a study on the impacts of floods on natural dependent communities of northern Ghana, Armah *et al.*, (2010) found out that respondents dealt with the effects of floods by fishing, weeding on other people's farms in return for food, small scale trading, harvesting of premature crops and dependence on food from previous harvests. Siggins (1996) also notes that coping is the most important strategy employed by people especially in the rural areas of sub-sahara Africa due to the crisis and seasonal shocks experienced. In Budalang'i flood plain, households have employed coping strategies due to the perennial floods which have developed into alternative livelihoods.

Diversification has also been associated with long term adaptation to economic instability. Hussein and Nelson (1998) note that when there is economic instability, employment opportunities fluctuate and therefore an increase in diversification of livelihood helps to adapt to the unanticipated occurrences. In this view, people are forced to diversify for survival purposes and therefore do not engage in the activities as an attractive alternative and hence viewed as negative (Ghosh and Bharadwaj 1992).

2.1.3 Livelihood Outcomes

Outcomes of livelihoods are the achievement, outputs or goals of livelihoods strategies (Romano *et al.*, 2010). Roman *et al.* (2010) further maintains that these outcomes range from improved income, reduced vulnerability, increased well-being, food security and more sustainable use of natural resources. Frankenberger *et al.* (2000) add that outcomes can be analyzed by looking at the nutritional status which has multiple dimensions such as access to food, healthcare and education. In addition, CARE (2002) also highlights health status, social network participation, physical safety, environmental protection and life skills capacity as livelihood outcome indicators that should be measured. The desired livelihood outcome may be different from the original objectives depending on how successful the respective livelihood strategies turn out (Ellis, 2000). Ellis (2000) further divides livelihood outcomes into livelihood security and environmental sustainability. He says that livelihood security consist of certain income level and income stability, decline of adverse seasonal effects and reduction in the overall risk profile of the income portfolio which in turn makes households less vulnerable to adverse trends or shocks. Rakodi (1999) cited in Robledo *et al.* (2005), notes that people aim at livelihoods that are more secure and less susceptible to shocks and hazards hence sustainable livelihood outcomes. Conway and Chambers (1991), also add that for livelihoods to be sustainable, one has to consider the long term impacts of the activities on the present livelihoods and those in the future. In the context of this study, the analysis of livelihood outcomes will help us understand why livelihood diversification strategies have remained unsustainable.

2.2 Theoretical Framework

The study adopts sustainable livelihoods framework and livelihood diversification approach to help understand the different livelihoods adopted and what influences their sustainability.

2.2.1 Sustainable Livelihoods Framework

The theoretical framework adopted by this study is the sustainable livelihood framework. The sustainable livelihood concept emerged from the Brundtland commission sustainability report (WCED, 1987). It was later developed by Chambers and Conway in 1992 and later by DFID 1999 as well as other international agencies. According to Chambers and Conway (1992) “*a livelihood comprises the capabilities, assets and activities required for a means of living. They*

further add that a livelihood is sustainable when it can cope with and recover from stress and shocks, maintain and enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in short and long term". Lipton (1987) holds that sustainability of livelihoods is a function of how men and women use their assets on short and long term basis. He further says that sustainability also entails engaging in livelihood activities that do not degrade natural resources within a given ecosystem.

The framework gives the interaction between internal and external factors of livelihood which determines household livelihood strategies and outcomes (Koeberlein, 2003). In addition the internal factors are the assets which a household is access to but the access is influenced by the vulnerability context and the rules and regulations of the institutions present. These institutions and the vulnerability context are the external factors. In general the framework encompasses livelihood assets, activities and the outcomes that result from these activities. This relationship of activities, assets and outcomes is enshrined within the society and institutions at play. In this study the vulnerabilities to floods and institutions form parts of the overall context within which households' livelihood activities operate.

Assets which households rely on play a vital role in the framework. The approach is founded on the basis that people require arrange of assets to achieve positive outcomes. Households with more assets can have a wide range of activities to secure livelihoods. These assets are divided into natural, physical, human and social. Natural assets include land, water and wildlife, and physical assets on the other hand are energy, transport and housing among others. Social assets comprises membership to groups, networks and access to institutions while financial capital are the financial resources such as remittances from relatives, salaries, pensions and savings (McLeod, 2001). In the case of floods, households' asset decreases vulnerability and increases ability to withstand the flood impacts and on the other hand the assets may be destroyed due to the impact of floods leading to livelihood insecurity.

The strategies adopted by the households are a combination of activities that people undertake in order to achieve the livelihood outcomes. These include productive activities, investment strategies and reproductive choices (Romano *et al.*, 2010). In addition, Romano *et al.* (2010)

adds that the choice of livelihood activities depends on access to financial, social and physical resources and the institutions and policies in the society. Livelihood strategies are aimed at getting livelihood outcomes. These are the achievements of livelihoods strategies (DFID, 1999). These outcomes can lead to livelihood security or insecurity hence determine whether or not households are successful in pursuing their livelihood strategies. Observing the livelihood outcomes will help this study to determine whether the alternative livelihoods adopted achieve specified livelihood outcomes.

The framework is also based on the premise that people live in vulnerable conditions. Vulnerable context according to Romano *et al.* (2010) include economic trends, natural disasters, fluctuation in prices of commodities due to seasons, health concerns and employment opportunities. Romano *et al.* (2010) adds that these factors can directly affect the asset and the options available for people to pursue livelihood activities. In the context of this study, floods makes people vulnerable since they lose their major source of livelihood and in turn develop alternative source of livelihoods which depend on the assets that are at their disposal. Since the assets of households are also affected by floods it may be the reason why the alternative livelihoods are not sustainable.

The institutional contexts in which people pursue their livelihoods refer to rules and social norms and organizations that facilitate the coordination of human action (Baas *et al.*, 2008). He further adds that the institutions include; government, non-governmental organizations, informal associations in the village, saving groups, markets and financial institutions such banks and microfinance institutions. In addition, socio-cultural settings such as kinship, marriage, inheritance and religion also influence livelihoods. The state offers safety nets and relief food during floods which may have positive or negative effects on the livelihood diversification strategies. Non-governmental organizations on the other hand can help in terms of offering soft loans to people. All these may have effects on alternative livelihood outcomes.

This framework is applied in the study because it helps to analyze the vulnerability context that household operate in and the type of outcome that ensues from the strategies adopted. The different assets of households and their institutional context determine the capacities of these households to cope with floods and eventually determine the alternative livelihoods pursued. The

approach fails to identify specifically the portfolio of activities such as farm off farm and non-farm activities.

2.2.2 Livelihood Diversification Approach

Livelihood diversification is the pursuit of diverse activities in order to meet various consumption patterns for survival (Ellis, 1998). Ellis (1998) further add that the livelihood diversification approach is based on the principle that farming does not provide enough means of survival in rural areas and most households therefore diversify their activities and sources of income for their well being. According to Saith (1992) livelihood diversification strategies have three levels which are farm, off-farm and non- farm. Farm activities include the combination of crops and livestock on the same farm and also intercropping (Hussein and Nelson 1998). Activities such as exchange of labour on other farms, harvest share systems and non wage labour contracts form the off-farm activities which form the second level of diversification (Saith, 1992). Non-agricultural employments such as wage employment, self employment, property income and remittances from relatives are the third level of diversification (Ellis, 1998).

Livelihood diversification is broadly determined by seasonality, risks, coping, economic instability and accumulation (Ellis, 1999). Among the motivations of diversification, risk is the primary motive (Bryceson, 1996). When people anticipate a threat they will always look for alternative livelihoods in order to mitigate the threat. This is the case of Budalang'i flood plain in that households have been faced with the flood menace hence they have resorted to alternative livelihoods to augment their incomes from farming.

Livelihood diversification may lead to surplus generation which eventually improves the living standards of people. Ideally, this is mostly carried out by the rich people in society who engage in various livelihood activities in order to accumulate wealth therefore maintaining their status. Diversification has also been associated with long term economic instability (Hussein and Nelson 1998). Hussein and Nelson (1998) further note that employment opportunities fluctuate when the economy experience instability and therefore an increase in diversification helps to adapt to the shocks. This therefore means that people are pushed to diversify their livelihoods for survival purposes hence it becomes an adaption mechanism rather than an attractive course of action.

Livelihood diversification differ depending on location of the activity, assets owned by people, opportunities and social relations which manifest in different ways hence determining what strategy to be adopted (Reardon, 1997). In this study, the livelihood diversification approach will complement the sustainable livelihoods framework by helping to understand what livelihood strategies whether farm, off farm or non-farm activities have been adopted by the people of Budalang'i due to the perennial problem of flooding. It also helps us to understand what determines the particular strategy or activity that the households are involved in.

2.3 Empirical Literature

2.3.1 Livelihood Diversification Strategies in Flood Prone Areas

Communities that live in disaster prone regions always have alternative livelihoods to cushion them against the effects of disasters on their major livelihoods. In a study done on the impacts of floods on natural dependent communities of northern Ghana (Armah *et al.*, 2010) found out that people coped with the flood by being engaged in various activities. The women were involved in hairdressing, sewing, weaving and petty trade while a large variety of men were involved in casual jobs such as masonry, carpentry, tailoring and fishing. The men were also involved in formal employment and also some got pensions and income from property such as rental houses. Oluoko (2006) in a study on food security and poverty in Nyando district found out that households coped with floods by diversifying their crops, engaging in off-farm employment and cultivating lands on high grounds that are not prone to floods. Nyakundi *et al.*, (2010) in a study of community perception and response to flood risks in Nyando district also noted that households resorted to planting rice because other crops were being swept away by the floods. Nyakundi *et al.*, (2010) further add that some households rented land on higher grounds for farming so as to avoid losses in the future due to the frequent floods while others involved in small scale businesses to augment their income. Although these studies identify the alternative livelihoods adopted by people in flood prone areas, due to the difference in geographical settings, the alternative livelihoods adopted by the people of Budalang'i may be different and hence necessary to undertake the present study. Also the studies do not delve in the sustainability aspect of the livelihoods which was the focus of the present study.

In a study by Matui (2009) on improving the decision making capacity of small-scale farmers in response to future climate impact in the flood prone Budalang'i plains of western Kenya, it was found that due to increased crop failure and unemployment, households engaged in livelihood activities such as rearing of domestic animals such as chickens, pigs and goats which are often sold for quick income. Matui (2009) further add the people engaged in basketry, weaving, brick making and charcoal burning to get their livelihoods. In addition Onywere *et al.*, (2007) notes that fishing is also an alternative livelihood developed by the people of Budalang'i. Although these studies have been done in Budalang'i, the present study sought to find out if these were still the alternative livelihoods or whether others had been developed due to the perennial problem of floods. In addition the present study also sought to find out why the alternative livelihoods had remained unsustainable.

2.3.2 Determinants of Livelihood Diversification Strategies

Diversification of livelihoods depends on the location, asset portfolio, income of people and social capital which manifest under different circumstances (Reardon, 1997; Chandresker, 1993 and Bigsten 1996 cited in Njeru 2003). Blaikie *et al.* (1994) emphasizes that households with greater income diversify their livelihoods and also people who are financially endowed endure when faced with hazards because they can employ mitigating measures for faster recovery compared to those who are not financially endowed. This was also evident in a study of community perceptions and response to flood risks in Nyando district by Nyakundi *et al.* (2010) who found out that coping and recovery from flood impacts demand financial reserves that cushion households. Also Seppala (1996) in a study of rural Tanzania alludes that the success or failure in undertaking diversification strategies was determined by households' management styles such as differences in timing of activities, location of activities and capacity to approximate risks. Additionally, Bigsten and Kayizzi-Mugerwa (1995) cited in Hussein and Nelson (1998) found out that diversification in Ugandan households was determined by the characteristics of the household and the economic variables. From this studies, it is evident that livelihood diversification depends on financial resources, location, asset portfolios of households, management styles and the characteristics of households.

Societal and institutional structures and processes also determine the livelihood diversification strategies adopted. Societal structures such as belief systems and perceptions determine households' ability to generate livelihoods in terms of its access to resources and the ability to use the resources (Magego, 2012). For instance cultural attachment to land in Budalang'i has made people not to leave their farms hence continue being involved in other livelihood activities as they stay on their farms despite the floods (Opere, 2004). According to Scoones (1998), assets are transformed by institutional structures in place hence determining the terms of access to opportunities and production of livelihoods. Atieno (2001) also adds that the government as a regulatory body ensures resource distribution, access and utilization of the resources while non-governmental organization support local programmes through various ways such as credit facilities. She also adds that households can suffer from barriers created by institutions and as a result determining the choice of livelihood activity. World Bank (2001) alludes that there is a tendency for public services to be biased towards more accessible locations, communities and social groups hence this may be a hindrance towards accessing public services. The different geographical locations of these studies means that what determines livelihoods adopted in these regions may be different with those in Budalang'i hence the present study sought to fill this gap.

2.3.3 Sustainability of Livelihood Diversification Strategies

The sustainability of the alternative livelihoods adopted is dependent on several factors. These factors may either hinder or promote the sustenance of the particular alternative livelihoods. According to Ellis (2000), diversification of livelihoods because of distress is bad in that it results to household members undertaking low productive activities with poor projections. Davis and Hossein (1997) add that distress may lead household to adopt a more vulnerable livelihood system than it had previously. Paavola (2004) in a study on climate change adaptation in Morogoro Tanzania says that activities such as charcoal burning, risky agricultural practices and deforestation contributes towards decline of the natural resources base to perform its safety net function hence leading to poverty. Nyakundi *et al.* (2010) found out that poverty and the perennial destruction of assets by floods in Nyando district compromised the ability of people to respond effectively to the frequent floods. Onywere *et al.* (2007) in a study of the intensification of agriculture as the driving force in the degradation of Nzoia River Basin found out that fishing

although adopted as an alternative livelihood, it was is not beneficial to the fishermen because of exploitation by the middlemen. Onywere *et al.* (2010) further highlights that the income from fish is irregular and as a result fishermen are left poor. This view is also highlighted by Matui (2009). Matui (2009) further adds that charcoal burning as an alternative livelihood is dwindling because charcoal burners are finding it difficult to get trees since they are almost exhausted. He also notes that overpopulation and demands for more shelter which requires trees and brick making has also contributed to deforestation of the area. These studies do not highlight all the constraints that make the alternative livelihoods adopted not sustainable for example they do not look at the perception of people on their livelihoods and how this affects sustainability, and social capital among other factors hence the present study sought to fill this gap.

2.4 Conceptual Framework

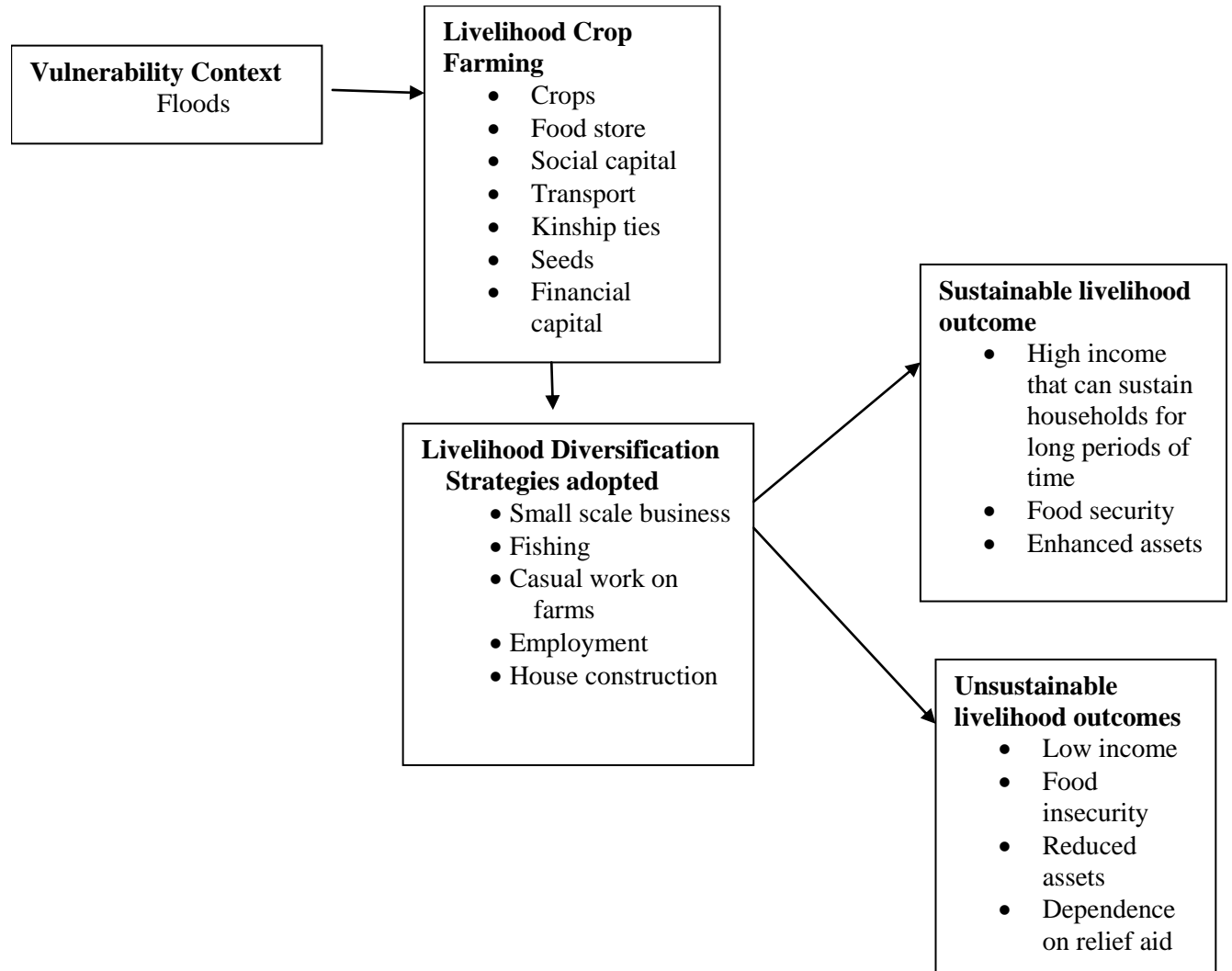
Independent variable: The main independent variable for this study is the livelihood diversification strategies adopted. It is operationalised as the alternative activities that people undertake in order to make a living.

Dependent Variable: The dependent variable in the study was the livelihood outcomes. It is operationalised as the output of the livelihood strategies that are put in place by the household. The outcomes can be improved physical and economic access to food, improved income, reduced vulnerability to floods and reduced dependence on relief food during floods.

This study borrows heavily from sustainable livelihoods framework and the livelihood diversification approach. The sustainable livelihoods framework gives the interaction between internal and external factors of livelihood which determines household livelihood strategies and outcomes (Koeberlein, 2003). The internal factors are the assets which a household is access to but the access is influenced by the external factors. The external factors on the other hand are the vulnerability context and the transforming structures and processes. The framework do not show clearly what sought of livelihood strategies are employed hence the livelihood diversification framework on the other hand fills this gap. It highlights the various activities whether farm, off farm or non-farm.

In this study, the vulnerability to floods is the overall context within which households' livelihood activities operate. Floods affect the household's farms and farm produce which forms part of the asset base of households in Budalang'i. Due to this, the households are forced to diversify their livelihoods by engaging in activities such as fishing, small scale business, casual work on farms, house constructions and employment. These livelihood diversification strategies are determined by the social assets, financial assets, level of education and institutions as identified in the study findings. The livelihood diversification strategies adopted lead to livelihood outcomes. These outcomes can either be sustainable in that households may have enough income, can be food secure and have enhanced assets while the unsustainable outcomes means that the households have low income, are food insecure and depend on government and non- governmental organizations for relief aid in times of floods. Figure 1 gives the graphical presentation of the conceptual framework.

Figure 1: Graphical Presentation of the Conceptual Framework



Source: Author's Conceptualisation

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter is divided into five sections. Section one describes the research design, the second section gives the description of the study site while the third section discusses the sampling procedure used in the study. The fourth section describes data collection process and the fifth section has the processes of data analysis.

3.1 Research Design

The study employed an exploratory research design. The study sought to explore and understand why livelihoods in flood prone areas of Budalang'i remained unsustainable over the years. Specifically the study examined the livelihood diversification strategies adopted, their determinants and their sustainability.

3.2 Study Site Description

The study was carried out in Budalang'i constituency which covers the same geographical area of Bunyala sub-county. Purposive sampling was used to select Budalang'i because it has experienced floods frequently over the years and it is also accessible to the researcher. Specifically the study was carried out in Bunyala Central and Bunyala West locations because they are the most affected when floods occur hence destroying crops which is the major source of livelihood in the area (Bunyala District Development Plan, 2008-2012). Budalang'i covers an area of 306.5 square kilometres out of which 120 square kilometres are under permanent waters of Lake Victoria. The area borders Lake Victoria and Samia sub-county to the North, Uganda to the West, Siaya to the East and Bondo to the south.

The area experiences two rainy seasons. The long rains start in March through May while the short rains season start in late August and continue to October. The driest months are December through to February and June to July. The annual maximum temperatures range from 26°C and 30°C while minimum temperatures vary between 14°C and 18°C. This climate supports crop farming however the area is prone to seasonal flooding during which crops are destroyed.

The area has an estimated population of 72,457 people. It is one of the poorest regions in Kenya, with an absolute poverty rate of 68% (Bunyala District Development Plan, 2008-2012). This is largely attributed to low productivity in agriculture due to the frequent floods.

3.3 Population and Sampling Procedure

The unit of analysis in the study was the household. The study population comprised of households that were mostly affected by the occurrence of floods and these were mainly in Bunyala central location but some were also found in parts of Bunyala west location. Purposive sampling was used in identifying villages in the two locations in that three villages (Bwalwanga, Hakati, Hubuyi) were selected from Bunyala Central while one Village (Mukhunga²) was selected from Bunyala West location. These villages were selected because they were frequently affected by floods and had also been affected in the recent floods³. A sample of sixty households was selected from those four villages. This sample size was chosen because of limited time and financial constraints. Using quota sampling method, the researcher with the help of the village elder in each village generated a sampling frame and selected fifteen households using simple random sampling. Simple random sampling was used because the population is homogeneous in that all the households are affected by floods.

Eight key informants were chosen depending on their knowledge about floods and livelihoods in the area. This included two chiefs of Bunyala west and Bunyala Central locations, four village elders, an official from Western Kenya Community development and flood mitigation project and an official from APHIA Plus organization that deals with livelihoods in the area. The village elders and the chiefs were chosen because they have lived in the area hence understand the livelihoods of people and how they are affected by the floods. An official from the Western Kenya community development and flood mitigation project and an official from the APHIA

² It was the frequently affected village in Bunyala West

³ The recent flood occurred in April and May 2013

Plus informed the study on which projects they were involved in and which targeted the livelihoods of people and how this affected the livelihoods outcomes.

3.4 Data Collection Methods and Tools

The researcher began the process of data collection on 30th May 2013. This involved pretest of the tool in Magombe central sub location which involved administering five questionnaires and conducting one key informant interview with the area assistant chief. This ensured that the data collection tool was revised and ambiguous questions removed. The actual fieldwork commenced on 1st of June to 20th of June 2013. The actual data collection involved use of both qualitative and quantitative techniques. The following criteria were used to collect both secondary and primary data.

3.4.1 Household Survey

The researcher used a semi structured questionnaire to collect data from the household heads. Face to face interviews was employed by the researcher in that data was collected on demographic characteristics of households, households' experience with floods, household assets, capabilities, and livelihood strategies, determinants of livelihood strategies and constraints that hinder sustainability. In addition the researcher also observed the surroundings and noted data that could not be captured by the questionnaire. During the entire data collection from household heads the researcher was accompanied by the village elder to identify the households that had been chosen.

3.4.2 Key Informant Interviews

The researcher also interviewed key informants by use of an interview schedule. The key informants included the two chiefs, four village elders, an official from Western Kenya Community Development and Flood Mitigation project and an official from APHIA plus. The chiefs and the village were interrogated on livelihood strategies adopted and constraints that hindered sustainability of strategies adopted. The officials from the organizations were interviewed on their areas of specializations and how their activities influenced the livelihoods of people in Budalang'i.

Secondary data on the other hand was obtained from books, articles and government reports. The review of such data was important in cross checking the primary data.

3.5 Data Analysis

Analysis of data was done by both qualitative and quantitative techniques. For quantitative data from the structured questions, it was first cleaned and coded then entered into Statistical Package for Social Sciences (SPSS). Simple descriptive statistics and frequencies were the main tools of analysis and have been presented in the form of tables, percentages and cross tabulations to show relationships. On the other hand, qualitative data from key informants and unstructured questions was analyzed by being organized into categories or themes using word tables. These categories were then coded by assigning numbers. The categories were analyzed with the aim of searching for emerging patterns, themes or consistency. The information was evaluated to determine its relevance in answering the research questions and was then summarized into narratives and statements to complement the quantitative information.

CHAPTER FOUR: HOUSEHOLD CHARACTERISTICS

4.0 Introduction

Household characteristics are the individual attributes that make up a family in terms of behaviour and the specific roles undertaken (Hart, 1994). They are the basic components that distinguish and identify one household from the other. These characteristics determine the kind of livelihood a household undertakes hence the outcome of those activities. This chapter describes the characteristics of households in Budalang'i in terms of age, gender, and marital status, number of people in the household and the level of education of the household head. The chapter is divided into five sections.

4.1 Age

The age of the household head may determine the kind of livelihoods the household is involved in. This causes difference in the kind of activities undertaken by different households consequently affecting the sustainability of the livelihood outcomes. According to Magego (2012), elderly people may engage in activities around their homes or villages and this is because they seem tired in terms of movement and pursuing of alternative livelihoods. He further adds that young people enjoy the freedom to transverse and search for opportunities hence they can undertake different livelihood activities away from home and can also engage in heavy activities because of their energy. Age therefore, is a major factor that determines the livelihood diversification options an individual can undertake at a particular time and as a result affecting the livelihood outcomes. Table 4.1 summarizes the age distribution of the household heads in the study site.

Table 4.1: Age of Household Head

Age in years	Frequency	Percent
20-29	9	15.0
30-39	18	30.0
40-49	11	18.3
50 and above	22	36.7
Total	60	100

Source: Field Data, 2013.

From the data, majority of the household heads in the study area are in the age of 50 years and above which represent 36.7%. Those between the ages of 30 to 39 years also occupy a considerable 30% while 18.3% of the respondents are in the ages of between 40 and 49 years. The study further established that 15% of the respondents were between the ages of 20 to 29 years. The findings show that the majority of the people in Budalang'i are the elderly who are above 50 years and this may be because the physically strong and young people in society have migrated to look for jobs in the urban areas. This was also observed from the key informant interviews who mentioned that the strong people especially the men migrated to Lolwe an island in Lake Victoria and to Port Victoria to look for fishing opportunities and also to Mombasa to work in warehouses.

4.2 Gender

The socially constructed roles assigned to males and females vary from one society to another and hence this determines the livelihood diversification strategies chosen by people (Francis, 1998). Gender therefore becomes a very important variable when analyzing rural livelihoods. Madanda (2003) notes that women in rural areas are more likely to undertake various livelihood activities than men but in many contexts men have access to resources hence can engage in many diversification opportunities that are not open to women due to cultural constraints. Livelihood diversification strategies therefore may be related to the gender of the household members in which the household head determines roles within the household (Bryceson, 2000). This therefore means that gender is a determinant in the livelihood options undertaken and consequently affecting the livelihood outcome. Table 4.2 summarizes the gender of the household head in the study area.

Table 4.2: Gender of Household Head

Gender	Frequency	Percent
Male	16	26.7
Female	44	73.3
Total	60	100

Source : Field Data 2013.

From the study findings, 73.3% of the household heads were females⁴ while 26.7% were males. The findings show that more households were headed by women and this may be attributed to migration of the men to look for other livelihood activities since farming was always affected by floods leading to low income. It was established from key informants that most men had migrated to look for fishing opportunities in Lolwe and jobs in warehouses in Mombasa to supplement the low incomes from farming.

4.3 Marital Status

The marital status of the household is important in livelihood diversification studies. The marital status can determine access to resources in the community such as land hence determining the livelihood activities of the people. Widowed household may get assistance from various organizations hence having an effect on their livelihood activities and in return on their livelihood outcomes (Magego, 2012). Table 4.3 below summarizes the findings of the study on the marital status of the households.

Table 4.3: Marital Status of the Household Head

Marital Status	Frequency	Percent
Married	43	71.7
Widowed	15	25.0
Single	1	1.7
Divorced/Separated	1	1.7
Total	60	100

Source: Field Data 2013

Findings from the field data show that 71.7% of the household were married and 25% were widowed. The single and divorced occupied 1.7% each. The findings revealed that there is a considerable 25% of widowed households in the area and this according to the information from key informants is attributed to the high prevalence rates of HIV/AIDS which are as a result of exchange of fish for sex between the fishermen and the women who are involved in fish selling business in the area. This also corresponds with information from Bunyala District Development

⁴ It should be noted that at the time of interview majority of those who were in the homesteads were women.

Plan (2008) which shows that high HIV/AIDS in the area has led to high death rates. It was also noted that there was only one divorced respondent and one single person and this may be because of strict cultural family values.

4.4 Household Size

The number of people in a household determines the livelihood activities chosen and the sustainability of resources available since the consumption patterns also depends on the number of people in the house. According to Magego (2012), a large household size needs more assets to meet the basic necessities for its members and that in ordinary circumstance larger households are likely to engage in more activities to get a means of living. On the other hand, a large household size with more dependants is likely to use a lot of resources generated from the livelihood activities and depleting them leading to unsustainable livelihood outcomes hence poverty. Table 4.4 below shows the household sizes among the sampled households.

Table 4.4: Household Size

Household size	Frequency	Percent
1-5	25	41.7
6-10	34	56.7
11-15	1	1.7
Total	60	100.0

Source: Field Data 2013

From the table, the study established that households with less than five members were 41.7% while 56.7% of the households had six to ten members. The findings further reveal that the smallest household comprised of one member while the largest household had 15 members. The findings corresponds with GoK (2009) report on Assessment of Levee Integrity and Flood plain condition in Budalang'i which showed that the average household size in the flood plain was seven members. The findings show that many households in the study area had six to ten members and this may be the reason why livelihoods got depleted so fast. This is because a larger household translates to a larger demand for resources to meet the needs of each member of the household leading to faster depletion of resources.

4.5 Level of Education

The capabilities of people form part of their livelihoods. Education and skills are some of the capabilities that will enable an individual to choose a certain activity hence coming up with a livelihood option and as a result the livelihood outcome. According to Ellis (2000), lack of education means low human capital and this leave out the individual from activities that require a higher levels of educational or skill attainment for participation. Magego (2012) also adds that people without education are most likely to involve in rudimentary or manual livelihood activities because such jobs require low levels of education. Table 4.5 below summarizes the findings on the level of education.

Table 4.5: Level of Education of the Household Heads

Level of Education	Frequency	Percent
Never went to school	11	18.3
Primary complete	12	20.0
Primary incomplete	27	45
Secondary complete	5	8.3
Secondary incomplete	5	8.3
Total	60	100

Source: Field Data, 2013

The study findings show that 45% of the household heads did not complete primary education, 20% completed primary education and 18.3% never went to school. Those who completed secondary education and those who did not complete secondary education represent 8.3% each. There were no household heads in the study that had college or university education. The low levels of education in the area may also mean that people cannot get lucrative jobs therefore impacting on the livelihood outcomes.

CHAPTER FIVE: LIVELIHOOD ACTIVITIES

5.0 Introduction

This chapter presents the findings of the first research question which sought to explore the livelihoods diversification strategies adopted by households in Budalang'i. The chapter discusses the study findings on the activities that households are engaged in and also the experience of the households with the recent floods. The findings are also corroborated with qualitative data that were obtained from key informants.

5.1 Main Livelihood Activity

Livelihood activities are what an individual or the household undertakes to make a living (Francis, 1999). Therefore, the main livelihood activity a household is involved in is the activity that the household depends on for its major source of earning a living. In this study, a household survey was conducted to establish the livelihood activities engaged by the households in Budalang'i flood plain. The study sought to find out the main livelihood activities of the households and their trends, before the floods, during and after the floods. This helped to establish whether households had changed their main source of livelihoods over the three periods of time or not. Table 5.1 summarizes the main household activities before the floods.

Table 5.1: Main Source of Livelihood

Source of livelihood	Frequency	Percent
Crop farming	58	96.7
Employment	1	1.7
Remittances	1	1.7
Total	60	100

Source: Field Data, 2013

Before the floods, 96.7% of the respondents depended on farming as their major source of livelihood while those who depended on employment and remittance from relatives represented 1.7% each. The findings also indicate that only one household depended on employment for its livelihood and this may be attributed to the low levels of education in the area and the consequent lack of job opportunities. The key informants interviewed also mentioned that crop farming was the main livelihood activity done by households in the area.

Both the respondents and the key informants indicated that crop farming was promising but was disrupted when floods occurred and as a result leading to food insecurity and poverty among the people. They indicated that floods mostly occur just before the harvesting of beans in the area hence they did not anticipate harvesting in 2013 since flooding had destroyed their crops. Majority of the respondents reported that they depended on relief aid and previous harvests during floods. The findings revealed that 55% of the respondents depended on relief aid during floods while 47.6% depended on the small remains from previous harvest. The relief aid was donated by Red Cross and UNICEF. Red Cross provided food such as maize, beans, rice and cooking oil while UNICEF provided utensils such as sufurias, spoons, water jericans and water treatment drugs. The findings further showed that, few people depended on previous harvest and this may be attributed to floods menace which affected the food stores and farms. These findings are also in line with Bunyala District Development Plan (2008) which showed that during floods, majority of the people on the flood plain depend on relief aid. The vulnerability of the people to floods in the study area pushes them to depend on relief aid every time floods occur hence meaning that farming is not sustainable in the area.

After the floods, majority of the respondents reported that their main source of livelihood was from crop farming even though the incomes had reduced significantly as compared to before the floods. Some respondents reported that they depended on little food that had remained from previous harvest that had been rescued from being affected by floods in food stores. In addition, other respondents harvested beans that survived from the floods and also depended on sweet potatoes and vegetables. The sweet potatoes and vegetables were said to be early maturing hence they were normally planted immediately after the floods and were ready after a short period of time. One respondent from Hakati village reiterated that,

“After the floods I wait for the water to subside in the farm and start planting vegetables and sweet potatoes because they mature early therefore save us from hunger since our food stores and other crops have been completely destroyed by floods”

The reduction in income after the floods was attributed to the effects of floods in that food stores got damp leading to rotting of the food. Other food items were stolen in the process of transferring to high grounds and hence after the floods, the incomes always reduced.

The main crops grown were reported to be maize and beans. Other crops grown were millet, sweet potatoes, groundnuts, rice and vegetables. Most of the respondents mentioned that farming was very promising but the only problem they faced was floods. This was emphasized by one respondent from Bwalwang'a village who mentioned that

“Us Banyala⁵ are very hardworking people and when floods do not occur we normally have very high yields hence do not ask for relief food. Our farms are very fertile and therefore we do not use any fertilizers but our only problem that plunge us into food insecurity is floods”.

This means that the respondents attribute the unsustainable livelihoods and food insecurity to the recurrent floods and they were optimistic that when floods are contained, they would cease from asking for relief aid. According to Bunyala District Development Plan (2008), the fertility of the land in the flood plain is attributed to the alluvial deposits brought about by the floods.

These findings reveal that despite the perennial floods experienced in the study area, the respondents still depended on farming as their main source of livelihood. The findings corresponds with GoK (2009) report on Assessment of Levee Integrity and Flood plain condition in Budalang'i which also found out that 90.3% of the household heads were engaged in crop farming. Also Bunyala District Development Plan (2008) reported a similar high proportion of 80% population depended on crop farming as their main source of livelihood. The high dependence on farming and the continued destruction of farms and food stores brought about by perennial floods push people into reliance on relief aid and food insecurity.

⁵ This is a sub tribe of the Luhyia that live in Budalang'i

5.2 Alternative Livelihood Activities

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). This means that household will always engage in many different activities to supplement their main source of livelihood. Ellis (2000), says that these alternative activities are fall back activities which household revert to when their main source of livelihood fail or fluctuate. Despite reliance on farming as the main source of livelihood, households in flood prone regions have always diversified their livelihoods because farming is always affected by floods (Armah *et al.*, 2010).

This study sought to find out the alternative livelihoods that households had diversified since crop farming had been affected by floods for a long period of time. A household survey was conducted to find out what alternative livelihoods the households had adopted and how they had changed before, during and after the floods. From the field data, before the floods, 75% of the respondents had alternative livelihoods while 25% did not have alternative livelihoods. This shows that many people had alternative activities of getting a living and this may be attributed to the fluctuations of income from crop farming due the effects of floods. This prompts people to resort to other activities to cushion themselves. Those who did not have alternative activities mentioned that they lacked capital to start any business, some cited old age while others cited that they were not learned hence they could not get any job opportunities. Table 5.2 below summarizes the alternative livelihoods activities done by households before the floods.

Table 5.2: Alternative Livelihoods before Floods

Activity	Frequency	Percentage
Fishing	14	22.2
Casual work on the farm	11	17.5
Employed	6	9.5
Small scale business (selling vegetables, <i>omena</i> (silver cyprinid), cereals, shop keeping, paraffin)	25	39.7
Others (house construction, painting and art work)	7	11.1
Total	63	100

Source: Field Data, 2013.

The study findings show that most alternative livelihood done by the households were small scale business which involved selling vegetables, *omena*, paraffin and shop keeping. The

findings further show that 39.7% of the respondents were involved in the small scale business while 22.2% were involved in fishing. Respondents also involved in casual work on the farms and this represented 17.5% while 9.5% were employed. Other respondents engaged in other activities such as construction of houses, painting and artwork which comprised 11.1%. These findings reveal that many people involved in several activities to make a living and most of them engaged in small scale business to augment their income from farming. Fishing was also a common activity and this may be attributed to the proximity to Lake Victoria where mostly men went to fish so as to augment the incomes from farming. Some 9.5% of the respondents were employed in sectors such as watchmen and cooks in hospitals and the nearby schools.

Floods destroy peoples' ways of living and especially their sources of livelihoods and respondents in the study mentioned that, their food stores, farms and other means of making a living were destroyed. This also led to disruption of the alternative livelihoods in that only 4.8% of the people continued with their businesses compared to before the floods when there were 39.7%. Those who were involved in fishing reduced to 2.9% and this was attributed to the fact that some men who had migrated to Lolwe to fish had returned to help the family relocate to high grounds leading to reduction of people in fishing activities. Those who were involved in casual work on the farms also reduced considerably to 8.7% and this was attributed to destruction of farms by the floods leading to few opportunities for casual work. The percentage may represent only those who were working on the rice schemes which were not affected.

After the floods, most people reported that their alternative activities had been disrupted and some said that they were yet to start again. Only 45% continued with their alternative activities they were doing before the floods and 25% had stopped. The remaining 30% of people did not have any alternative livelihood before the floods and even after the floods. Of the 25% who had stopped engaging in the alternative activities they had before the floods, 8% opted to change their activities and this was because their previous activities had been disrupted by floods. Table 5.3 summarizes the alternative activities done after the floods.

Table 5.3: Alternative Activities after Floods

Activity	Frequency	Percent
Casual work on the farms	10	52.6
Fishing	4	21.1
Small scale business (selling paraffin, vegetables, operating shops and <i>omena</i>)	4	21.1
Other activities (painting, house construction and artwork)	1	5.3
Total	19	100

Source; Field Data 2013

From the findings, only 10 households were still involved in casual work after the floods and this was attributed to destruction of farms therefore there were no available jobs on the farms except on the rice schemes which had not been affected by the floods. Only four people were involved in fishing and small scale business respectively hence this showed that there was a great reduction in the number of people engaging in alternative activities.

The key informants also reported that people involved in various alternative activities which included fishing, small scale businesses, casual work on people's farms and rice schemes nearby, selling of maize from Uganda, masonry and house construction. Others noted that some people had opted to migrate to Port Victoria to look for casual jobs in the fishing area which involved carrying and packing *omena* while others also migrated to Mombasa to work as casuals in the warehouses. They also noted that people had reverted to environmental degradation by cutting down trees to sell firewood and charcoal so as to augment their incomes.

The key informants noted that even though some people had opted to migrate and look for jobs outside the homes, they still came back to crop farming because it was their main source of livelihood. In addition, some people were sending money back home to invest in farming despite the floods. They further added that the number of people who were involved in fishing continued to reduce because of the dwindling stocks of fish in the Lake and as a result, the men who had migrated to go for fishing and being involved in packing and carrying *omena* were slowly returning and turning to crop farming.

These findings are in line with Onywere *et.al* (2007) who found out that people in Budalang'i flood plain carried out fishing as an alternative livelihood activity. However, the findings contradict with those of Matui (2009) who reported that people in Budalang'i flood plain had alternative livelihoods such as basketry, weaving and brick making. Since basketry and weaving use papyrus reeds found along the shores, respondents mentioned that it was not easy to find the reeds since most of it was cut and was not being replenished hence majority of the people had given up and resorted to other livelihood activities.

These findings reveal that livelihood diversification strategies are not sustainable because after the floods, most of the livelihood activities are destroyed and people have to start their lives again. The findings further show that people engage in the alternatives activities as a fall back just for survival hence do not invest in it so much because they still perceive crop farming as their major source of livelihood and hence always want to go back to farming.

From the findings, alternative livelihoods adopted by households are also disrupted by floods resulting to minimal returns therefore affecting the sustainability of livelihoods. In addition, the view of alternative livelihoods as a last resort rather than an attractive livelihood source may lead to lack of investments in the alternative livelihoods leading to low returns hence may be the reason why they are unsustainable. Furthermore, as much as the respondents have alternative livelihoods to augment their incomes, they still practice crop farming and with the continued flood destructions, the crops are swept away resulting to food insecurity and poverty making livelihoods unsustainable.

5.2.1 Reasons for Livelihood Diversification

Livelihood diversification is the process by which rural families pursue diverse activities and social support capabilities for survival and also to improve their standards of living (Ellis, 1998). It involves changes in activities that earn income or meet domestic requirements of a household. Ellis (1998), further adds that the causes and motivations of diversification vary according to time. He further points out that the causes of diversification include coping, credit and accumulation, economic instability and risks. In the study, household interviews were conducted in order to identify the motivations that made households to diversify their livelihoods. The findings are summarized in the table 5.4.

Table 5.4: Reasons for Diversification

Reason	Frequency	Percent
Expand income sources	10	16.7
Meet subsistence needs	25	41.7
Ready markets for vegetables, <i>omena</i> , paraffin	16	26.7
Easy to start fishing	9	15
Total	60	100

Source: Field Data, 2013.

The findings show that, 25 respondents diversified their livelihoods because they wanted to meet their subsistence needs and this may be attributed to low incomes from farming. The respondents mentioned that farming was not profitable because it was always disrupted by floods hence they had to look for other alternatives to meet their subsistence needs. Some other 16 respondents mentioned that they diversified their livelihoods because there was high demand for vegetables, onions and *omena*. This was attributed to ready supply of vegetables because people were planting them after the floods hence they sold to those who did not have. *Omenas* were also on demand because they were the only fish easily got from Lake Victoria. One key informant from Bwalwang'a mentioned that

“In the past we used to get varieties of fish such as mbuta (nile perch), ngege (tilapia), mud fish and omena among others but today due to overfishing one can only get omenas easily but the other types of fish are few.”

The easy availability of only one type of fish (*omena*) in the lake may show the dwindling stocks of fish.

Diversification has also been associated with accumulation and expansion of income (Ellis, 1998). From the findings this was also evident in that 10 respondents said that they diversified their livelihoods because they wanted to expand their income sources. This was attributed to the fact the respondents wanted to have enough income to enable them be self sufficient. This is also evident from empirical study by Reardon *et al.* (1992) in West Africa who found out that diversification was used to get higher incomes and food consumption over the year.

Nine respondents who were involved in fishing mentioned that it did not require capital to start fishing and a person required the traditional fishing gears and the skills only to start fishing. The key informants also said that fishing was easy to start because one did not need a lot of capital and also the proximity to Lake Victoria motivated people to get involved in it. The respondents added that the fish stocks in the Lake were reducing due to overfishing of immature fish hence as much as it was easy to start, it was not beneficial. Some key informants also added that people feared taking loans to invest in other business and this made them resort to fishing because it does not need capital to start hence it was the only other alternative opportunity to engage in.

From the findings, it can be concluded that most of the respondents involved in alternative livelihoods to meet their subsistence needs since farming which is the main source of livelihood was always affected by floods. The findings also show that majority of the people who engaged in fishing had no other options for alternative livelihoods and since fishing was easy to start then it was the last resort. This may be the reason why the alternative activities are not sustainable in that people are pushed to engage in alternative activities as a last resort rather than as an attractive venture.

5.3 Experience with Floods

As discussed in chapter one, floods in Budalang'i is a perennial problem in that it has affected people since 1937 up to 2013. This study sought to find out the experiences of the people with floods and how they managed to get their livelihoods. A household survey was conducted to find out how floods affected people, how they were getting their livelihoods and how they regained their usual life after the floods. The study findings show that 100% of the respondents were affected by the last floods and this was because most of the people either lived on the lowlands of the floodplains or their farms were on the lowlands. The key informants indicated that the recent floods were caused by the heavy rains on the floodplain and the overtopping of river Nzoia which was caused by heavy rains in the upper catchment areas of Mt. Elgon and Cherangani hills. The respondents indicated that farms, household assets, houses, livestock, food store, transport, education and business had been destroyed by floods.

The study findings revealed that households who lived on the lowland of the floodplains reported their houses had been completely submerged in water and hence they had to relocate to higher grounds. Table 5.5 below summarizes the study findings.

Table 5.5: Relocation to High Grounds

	Frequency	Percent
Yes	55	91.7
No	5	8.3
Total	60	100

Source: Field Data, 2013.

The findings show that 91.7% of the respondents were displaced with floods hence they relocated to the high grounds on the dykes and nearby institutions such as schools and hospitals. Only 8.3% did not relocate and this was because floods did not reach their houses. Those who relocated stayed in tents and nearby schools. The tents were donated by UNICEF and others used the tents they had been given during previous floods in 2011. Table 5.6 shows the number of days spent by the respondents on high grounds.

Table 5.6: Days Spent on High Grounds

Days	Frequency	Percent
1-7	20	36.4
8-14	13	23.6
15-21	15	27.3
22 and above	7	12.7
Total	55	100.0

Source: Field Data, 2013.

From the study findings, 36.4% of the respondents were displaced between one and seven days while 27.3% were displaced for about eight to fourteen days and 23.6% stayed for between two to three weeks on the high grounds. The findings show that most of the people were displaced for about one and three weeks. The key informants mentioned that the displacement led to family members separating because they ended up securing shelter in different places. The respondents mentioned that they relocated because their houses got damp and some developed cracks on the walls. From the researcher's observations, most of the temporary houses (mud walled) looked weak and developed bends hence posed a health hazard. The permanent houses had cracks on both the walls and floor and were also very damp. The dampness of the house also caused the

doors not to open and shut properly due to the warping of the wood and therefore the doors had to be replaced after the floods. The respondents especially those with temporary and semi permanent houses reported that after every flood occurrence they always built new houses because the old ones were always destroyed hence costing them a lot of their income which led them to poverty. In addition, they reported that pit latrines were also swept away by the floods leading to contamination of water. Consequently the contaminated water led to increase of diarrhoea cases in the area. Other diseases such as malaria, flu and pneumonia were also mentioned to be rampant and were attributed to dampness of the houses and stagnant water which inhabited mosquitoes in the surrounding.

Household assets were also destroyed during the floods. It was mentioned that furniture especially those made of wood absorbed water and broke down leading to losses. Other things such as beddings, utensils, electronic equipments and *jembes* among other assets got damp and others that were left on the floor were easily swept away by the floods. Most of the food which had been stored also got damp and ended up rotting. In addition, the food also spilled in the flood water as people ran to relocate on high grounds leading to losses and food insecurity. It was also mentioned that as people were displaced and relocated to high grounds, the houses were always left open to prevent the doors from warping hence not opening after the floods. This made the houses prone to thieves who came around with boats at night to steal the assets and properties left in the house.

Livestock were not spared either because of the floods. The respondents who had livestock reported that cows, goats, pigs and chicken were always swept away by the floods hence the animals sometimes died and others stolen during relocation to the high grounds. It was also mentioned that pastures were always submerged in water hence the livestock lacked where to graze during the floods. The respondents added that after the floods, the surviving livestock were prone to diseases which they attributed to have been brought by the flood waters hence some people resorted to selling them at cheaper prices while others suffered the losses due to the deaths of the livestock.

One of the devastating effects of floods is the destruction of farms and crops. Findings from the study show that crops were always submerged in water and ended up rotting. Most of the

respondents expressed fears that they would not harvest since the crops had been submerged hence exposing them to food insecurity. In addition, they reiterated that farmland became waterlogged reducing the potential for planting, therefore, they had to wait for sometimes before preparing to plant sweet potatoes and vegetables for their livelihoods.

Floods affect all spheres of the economy and surrounding. In the study, respondents reported that floods affected their business in that the kiosks and stalls were swept away hence they had nowhere to sell their goods. Markets were submerged in water and people could not access them. Transportation was also affected and as a result the supply of goods was disrupted making it hard for people to get commodities. Those who were casually employed on people's farms lost their livelihoods because the farms were submerged in water making it impossible to work. Education was not spared either by the effects of floods in that as people were affected and displaced they moved to the nearby schools hence they were closed for a period of about two weeks as a result affecting the children's education. The nearby schools were also submerged in water making it hard for learning to take place.

The effects of the floods were devastating and respondents mentioned that they were always reduced to poverty after every occurrence. They added that while on the high grounds they lacked clean drinking water, firewood and place to cook because the area was wet. They reported that they depended on relief aid, food from previous harvest that they managed to ferry to the high grounds and remittances from relatives and some had to do casual work to survive. They reiterated that they did not like receiving relief aid every time because they were hard working people hence they urged that dykes should be made permanent so that their livelihood activities are not disrupted.

When asked how they regained their normal life after the floods, they reported that they started repairing and rebuilding their houses while still on the high grounds and after about three days they started transferring their properties from the high grounds back to their homes. They also rearranged their properties back in place and cleaned the homes by cutting down long grass and opening terraces to make way for the stagnant water to flow. The houses were also warmed by lighting fire so that they dry up quickly. In addition, they also mentioned that they waited for water to subside in the farms so that they could prepare to cultivate and plant sweet potatoes and

vegetables because they are early maturing hence being their source of livelihood after the floods. These findings correspond with the GoK (2009) and those of Armaha *et al.* (2010) in Ghana which found out the properties of people who lived on flood plains were always affected by floods.

These findings show that, floods affect all the spheres of the economy and people's livelihoods making them vulnerable and dependant on relief aid every time they occur. The findings further explain the high absolute poverty of 68% (GoK, 2008) in that as much as people diversify, the livelihood activities are always affected by floods pushing them to poverty.

CHAPTER SIX: DETERMINANTS OF ALTERNATIVE LIVELIHOODS

6.0 Introduction

This chapter presents the study findings of the determinants of livelihood diversification strategies adopted by households in Budalang'i. The chapter looks at factors such as the relationship between the age of the household head and alternative livelihood, the level of education and alternative livelihood and the social and financial assets of the household.

6.1 Age and Alternative Livelihood

The age of the household head may determine the kind of alternative livelihood chosen by the household. Young people may be involved in strenuous work unlike the elderly. They may also be involved in jobs that are majorly out of the home while the elderly may prefer activities that are home based (Magego, 2012). This study investigated the relationship between the age of the household head and the alternative livelihood chosen. Table 6.1 below summarizes the study findings.

Table 6.1: Relationship between the Age of the Household Head and Alternative Livelihood Activity Chosen

Age in years	Alternative Livelihoods Activity (%)					Total
	Fishing	Casual work on farms	Employed	Business (selling <i>omena</i> , vegetables, paraffin, operating a shop)	Others	
20-29	42.9	21.4	0	28.6	7.1	100
30-45	18.1	12.1	9.1	45.5	15.2	100
46 and above	12.5	25	18.8	37.5	6.2	100

Source: Field Data, 2013.

The findings show that people aged between 20 and 29 years were mainly involved in fishing in that they occupied 42.9%. Majority of those who were involved in business were between the age of 30 and 45 years in that they represented 45.5% and they also involved in other activities like painting and house construction while those who were involved in casual work on people's farms were majorly the elderly who represented 25%. The findings reveal that fishing was mainly done by the young people and this may be attributed to their energy and also ease of travel to Lolwe and Lake Victoria to fish. The middle aged people of between 30 to 45 years

were actively engaged in most activities and majority of them were doing business in order to augment their income from farming. The household heads of above 46 years were the most who engaged in casual work on farm and this may be because of their advanced age hence they find it convenient to engage in farm work activities near the home. It came out clearly in the field study that all the age groups were actively involved in business of selling *omona*, vegetable, shop keeping and paraffin.

During and after the floods this trend did not change much even though many people were not involved in the activities because they had been disrupted by floods. Many elderly people who were involved in casual work on people's farm reported that they were not working during and after the floods because most farms had been disrupted hence they had lost their alternative livelihood. The young people who had gone fishing also had returned at home to help in relocation but they mentioned that they would still go back to fishing even though the fish stocks were diminishing in Lake Victoria. Majority of the people who were in business mentioned that after the floods no much activity was taking place hence they had to wait for some time before they resume their business.

These findings show that age was a determinant of alternative livelihood chosen in that fishing was mainly done by the young people, casual work on peoples farm was mainly done by the elderly and small scale business majorly done by the middle aged people. The engagement of most young people in fishing despite the diminishing stocks of fish in Lake Victoria may mean that it is the only available alternative activity that young people can easily engage in since it does not require a lot of capital. The elderly may lack capital to invest in business activities hence can only engage in casual work while the middle aged people were involved in small scale business since majority of them may have belonged to groups (*chama*) where they got capital through credits hence invest in the business. This therefore means that age of the household head determined the alternative activities chosen hence also influencing the livelihood outcomes.

6.2 Level of Education and Alternative Livelihood

The level of education of an individual determines the kind of livelihoods undertaken. According to Magego (2012), educated individuals prefer salaried employments while Kabeer (2002) on the other hand adds that, the uneducated or those with low levels of education are usually absorbed

in wage labour which involves manual work or physical energy. This therefore means that one's education will determine their livelihoods. The study examined the link between the level of education and the kind of alternative livelihood chosen by the households of Budalang'i. Table 6.2 below summarizes the study findings

Table 6.2: Relationship between the Level of Education and the Alternative Livelihood Chosen

Level of Education	Alternative Livelihoods (%)				
	Fishing	Casual work on people's farms	Employment	Small scale Business (selling <i>omena</i> , paraffin, vegetables, shop keeping)	Others
Never went to school	7.1	27.3	16.7	4	0
Primary complete	14.2	18.2	33.3	28	25
Primary incomplete	42.9	54.5	16.7	52	25
Secondary complete	7.1	0	33.3	12	50
Secondary incomplete	28.6	0	0	4	0
Total	100	100	100	100	100

Source: Field Data, 2013.

From the study findings, 42.9% of those respondents who involved in fishing did not complete primary education and this may be attributed to ease of fishing hence majority of people would drop out of school and engage in fishing. Those who involved in casual work comprised majorly those who had not completed primary education and those who never went to school in that they comprised of 54.5% and 27.3% respectively. It should be noted that none of those who had at least secondary education was involved in farm activities as an alternative livelihood. The respondents who reported that they were employed comprised majorly of those who completed primary and secondary education in that they represented 33.3% each and this may be attributed to the fact that any employment needed at least a certificate to show some level of education. The kind of jobs reported included cooks and watchmen in the nearby schools and hospital hence they did not need higher levels of education. Those who actively involved in small scale business were majorly those who never completed primary education in that they occupied 52%. 50% of those who were involved in other activities such as painting and construction activities comprised of those who had secondary education.

The findings reveal that, activities such as fishing, running small scale business and working on farms were majorly done by people of low levels of education while activities such as painting and construction of houses needed some skills and at least people who had some education levels hence they were mainly done by individuals who had secondary education. Also majority of those who were employed had either completed primary education or secondary education meaning that there were some educational requirements for one to be employed. The findings also show that none of those who had at least some sought of secondary education involved in casual work on people's farm hence confirming Kabeer's (2002) argument that those who are absorbed in manual work and physical energy are mainly the uneducated or those with low levels of education.

From the findings, it can be concluded that low levels of education in the study area rendered people to be involved in low paying activities such as working on the farms, fishing and being employed in low paying jobs such as cooks and watchmen. The returns from the activities are very small hence being depleted faster and eventually leading to unsustainable livelihoods.

6.3 Social Assets

Social institutions and structures define and determine the kind of livelihoods an individual adopt. Rural households in developing countries dedicate a lot of attention to social networks, designed to improve their livelihoods (Berry, 1989; 1993). Watson (2003) also adds that institutions are structures of power and therefore determine the household's ability to generate a livelihood. Individuals belonging to such social institutions accrue several benefits like getting credit, members acting as guarantors hence getting loans from financial institutions and getting social capital like during social events such as funerals and weddings among others. Livelihoods chosen by households are therefore determined by the existing social institutions in the home and the society as a whole. The study sought to investigate if household belonged to any group before the floods, during and after the floods and the benefits received from those groups. Table 6.3 shows the study findings.

Table 6.3: Membership of Respondent to a Group before Floods

Belong to Group	Frequency	Percent
Yes	39	65
No	21	35
Total	60	100

Field data 2013

From the study findings, 65% of the respondents belonged to a group (*chama*) while 35% did not belong to any group before the floods. This shows that majority of the people belonged to a group. Some members mentioned that membership to a group helped them to get group loans from K-Rep bank and others also added that it helped them start businesses. Some members also got household assets such as utensils from the groups and others took loans from the groups to pay school fees and also buy food. Some of those who did not belong to a group mentioned that they did not have money to make contributions to the group hence they were left while others mentioned that they had left the groups because of corruption.

During floods most things get destroyed and social organizations get disrupted and as result affect social groups and kinship ties that are present. In the study, it was evident that during floods majority of people who belonged to the groups did not get benefits and others had dropped from the groups. From the findings, 24 people were still in the groups during floods while 15 people had left the groups. Those who left the groups reiterated that they had been disrupted by floods and also lacked money to contribute since most of their livelihood sources had been disrupted hence they were living from hand to mouth. Only 4 people mentioned that they benefitted from the groups during the floods in that three respondents received money and one respondent got household utensils. Three of the respondents who benefitted mentioned that they used the money to buy food while on the high grounds while one said that he used the money to pay people to help him relocate to high grounds. This shows that membership to a group helped some of the respondents to endure during floods.

According to Berry (1989), social and kinship networks are essential for facilitating and sustaining diverse income portfolios. This comes in handy especially when people are faced with shocks or disasters. The study sought to find out if households in Budalang'i also received help from relatives during floods. From the findings, 19 households received help while 41

households did not get any help from relatives during floods. Majority of those received help mentioned that they were sent money from their relatives in Mombasa, Port Victoria and Busia. They added that they bought food with the money during floods since most of the food stores had been destroyed. Those who did not get any help from relatives mentioned that all their relatives were living around hence they were also affected by floods therefore they could not get any help from them. The study findings also corresponds with those of (Armah *et al.*, 2010) who found out that remittances from migrant relatives were a more efficient coping strategy in naturally dependent communities in Ghana who had been affected by floods.

After the floods, majority of the people were still re-adjusting back to their usual life. Those who were in groups during the floods continued with the groups even after the floods. After the floods, only six people benefitted in terms of money and household assets from the groups. Nobody mentioned that they took loans from the groups or bank. Majority of them said that the group members had been disrupted by floods hence they could not take loans because they had no means of repaying back the loan.

In terms of livelihood diversification, social assets are key because they determine the activities people are able to engage in. From the study findings, many households belonged to groups before the floods but they reduced during and after the floods. The reduction in number may be attributed to disruption by the floods. Respondents added that their sources of livelihoods had been disrupted hence they did not have money to make contributions to the groups making them leave the groups. Before the floods majority of the respondents who belonged to the group reported that they got benefits such as money and loans which they used to invest in existing business while others started small scale business hence having alternative livelihoods besides farming. This means that membership to a group determined access to resources which eventually determined the kind of alternative livelihoods adopted by some households. Benefits from the group also helped some household endure during floods because they were able to buy food while on high grounds and also after the floods hence being sustainable.

6.4 Financial Assets

6.4.1 Savings

Financial assets of a household determine the kind of livelihood diversification strategy employed by the particular household. According to Ellis (2000), individual or household access to savings, loans or other forms of finance or credit makes a difference to the livelihood options that are open to them. The study sought to investigate the savings and loans taken by households and how they influenced their livelihoods. From the study findings, 30% of the respondents had savings before the floods and 70% did not have any savings. Some of those who did not have savings mentioned that they did not have enough income to save since farming was not yielding due to the frequent floods hence they could not save anything. One respondent from Hubuyi village mentioned that

“I depend on farming but it is always disrupted by floods resulting into low yields that cannot be sold and therefore I cannot save anything”

Other respondents also mentioned that they had a lot of expenses to cater for hence they could not save while some people also said that they were too poor to save and that they were living from hand to mouth. One respondent in Hubuyi village added that

“I am very poor and the little income I get ends up in buying food hence I am left with nothing to save”.

Those respondents who had savings before the floods mentioned that they used the savings to carry out various activities, 34.8% used the savings to either start new business or invested in the existing businesses while some respondents also used the savings to buy household assets such as utensils and others bought food. This represented 21.7% each. Some 13% of the respondents paid school fees while 8.7% used their savings on medical expenses. The findings reveal that savings helped to start new business and also invest in existing business hence being a determinant in the choice of alternative livelihood activity.

Floods destroy the asset portfolios of individuals reducing them to poverty. In Budalang'i households saving patterns were affected by floods in that only 21.7 % still had their savings while the rest had stopped saving during the floods. Some of those who had savings mentioned

that they used the savings to buy food during floods while others paid people to help them relocate to high grounds. This shows that savings helped some respondents to endure during floods.

From the findings, respondents who were still saving after the floods had reduced to 16.7% and this was mainly attributed to sources of livelihoods being disrupted by the floods hence affecting the saving patterns of households in Budalang'i. Majority of those who were not saving said that their livelihood sources had been disrupted and whatever they were getting was being used to buy food therefore they could not save.

The study findings reveal that savings determined the livelihoods of households and also helped in enduring when faced with shocks of floods.

6.4.2 Loans

Access to loans and credit determines the livelihoods of individuals and households. The study sought to investigate whether household had access to financial resources from financial institutions and how they influenced their choice of alternative livelihoods. The study established that before the floods, 10% of the respondents had taken loans from financial institutions while 90% had not taken any loan. Of the respondents who took loans, 60% invested in their business while 20% used the loans to pay school fees for their children. The other 10% of the respondent used the loans to buy livestock and the remaining 10% invested the loan in rice farming. From the findings, it was revealed that majority of those who got loans from financial institutions invested in business hence access to resources being a determinant in the choice of alternative livelihood.

The findings also reveal that majority of the respondents did not take any loan and this was attributed to poverty and lack of security to enable easy pay back of the loan. Many of the respondents who did not take loans mentioned that they feared being sued by banks due to default of paying. Others also mentioned that they did not have reliable sources of income that could facilitate pay back hence they could not take any loans from banks. In addition, some respondents reiterated that banks had strict regulations and that they could not meet those regulations hence this barred them from accessing the loans. The findings reveal that there are

several barriers that prevent people from accessing loans and in return being a constraint to better choice of livelihood activities.

The findings also revealed that none of the respondents took loans during and after the floods and this was attributed to the disruptions caused by floods and hence people were still slowly returning to their usual lives. One respondent from Hubuyi village mentioned that

“I could not take a loan from a bank during floods because I cannot repay since my business and farm have been completely destroyed. At the moment I am just thinking of how I can get food”.

The findings show that access to financial resources such as loans determine the kind of alternative livelihood a household chooses and that shocks such as floods disrupts people’s assets hindering them from using the assets as security in order to access resources. In addition, the strict bank regulations deter people from accessing loans hence affecting the choice of better livelihood activities leading to poor livelihood outcomes

6.6 Institutions

Formal and informal institutions are structures of power and therefore determine the households’ ability to make a livelihood (Watson, 2003). Government agencies and Non Governmental Organization in an area may influence the choice of livelihood of the individual through the services offered and the regulations provided. Carney *et al.* (1999) also adds that households are inhibited with certain boundaries of actions and that their livelihood options are determined by the structures such as roles of government or the private sector and process such as institutional policies and cultural factors which they face. This therefore means that the choice of a livelihood activity is also determined by the institutions present.

The study sought to investigate how government and non-governmental organizations in the area influenced the choice of alternative livelihoods of individuals. The study findings revealed that 36.7% of the respondents were aware of governments’ projects in the area that touched on livelihoods while 53.3% said that the government had done nothing in the area in terms of livelihoods. 10% of the respondents reported that they were not aware of any government projects on livelihoods in the area. Some of the respondents who mentioned that government had

projects on livelihoods in the area said that the government provided trainings on farming and also provided maize, beans and millet seeds while others said that the government had helped them by building dykes in the area which helped contained floods for a short period of time. Other respondents mentioned that during the floods, the government provided relief food while others added that government helped orphans and vulnerable children in the area. Majority of the respondents said that the government had done nothing in the area and that only a few people benefited from the seeds provided by government. One respondent in Hakati village reiterated that

“We are a forgotten lot, the government does not really care about us, those who benefit from the seeds provided are just a few people who are known by influential people and the rest of us do not get anything.”

Some respondents also mentioned and that the government was not serious on building permanent dykes in the area to contain floods and that this greatly affected their farming hence leaving them poor.

The findings also show that 71.7% were aware of presence of civil society organization in the area while 28.3% were not aware of the civil societies in the area. Some of the organizations that had projects in the area included APHIA plus, AMPATH, Red Cross, Bulala community based organization and the Catholic Church. Some respondents who were taking care of orphans in the area mentioned that they got mattress, blankets, uniforms and school fees for the orphans from APHIA plus. In addition, some households also got bicycles to be used by the orphans to go to school. The project coordinator of APHIA plus mentioned that apart from helping orphans they also helped renovate houses of their affected members, gave water treatment drugs and sensitized on community hygiene during floods. Respondents mentioned that AMPATH provided food to the HIV/AIDS people and those who received the food reiterated that it had helped them prolong their lifespan. Some members of Bulala CBO and the Catholic FBO mentioned that they got maize seeds and cows from the groups and that this helped them to expand their livelihoods. Majority of the respondents mentioned that Red Cross and UNICEF helped them during floods by providing tents, food and utensils.

When respondents were asked how the civil society initiatives affected their livelihoods, most of those who benefitted from APHIA plus reiterated that they were relieved of paying school fees and buying beddings and uniforms to the orphans and that the money that could have used on those items was diverted to other things like food and small scale businesses. They also added that the school fees had helped to retain children in school and that it had also reduced early marriages in the area since most of the orphans were in school. The people living with HIV/AIDS who got food from AMPATH reported that they were able to live for long and also engage in other livelihood activities because they were not sickly as compared to the period before they got the food hence influencing their involvement in livelihoods activities. Respondents also mentioned that temporary dykes that had been built by government were helping them on short term basis especially when the rains are not heavy hence they can cultivate and harvest when the dykes contain floods. Majority of the respondents reported that relief aid from Red Cross and UNICEF helped them endure during floods. Those who got seeds also added that they were saved from buying seeds but the crops planted had been destroyed by the floods.

From the findings, it can be concluded that government interventions of building temporary dykes in the area was containing floods in the short term but not solving the problem of flooding in the long term. Hence whenever there are heavy rains in the upper catchment areas, the study area is flooded leading to livelihood losses resulting to unsustainable livelihoods.

6.7 Land Ownership

The physical assets a household owns determines their livelihoods hence their livelihood outcomes. Land is part of the physical assets that households in the rural areas own. Land ownership determines the kind of activities a household can undertake hence determining the livelihood outcomes. From the study findings, 45% of the respondents mentioned that they inherited land while 41.7% owned land communally. In addition 13.3% of the respondents owned land individually in that they bought their land. Communal land ownership and inherited land is rarely sold or used as collateral since many people in the community claim it. This may be the reason why many respondents could not use their land for commercial purposes limiting them on livelihood activities chosen and as a result influencing the livelihood sustainability.

The findings further show that, 93.3% of the respondent lived on their land for more than five years while 6.7% lived in the area for less than five years. This shows that despite the frequent occurrence of floods, the respondents did not relocate permanently to other areas. One respondent from Bwalwang’a mentioned that

“I cannot live my ancestral land, this is where I was born and despite the floods I will just continue living here, I have nowhere else to go”.

This shows that many people continued to depend on their ancestral land for their main livelihoods which is farming and with the frequent floods, the crops were always swept away leading to unsustainable livelihoods.

Respondents were also asked the size of their land and the findings are summarized in table 6.4.

Table 6.4: Size of Land in Acres

Number of acres	Frequency	Percent
Less than 1	30	50
1.1-3	28	46.7
3.1-5	2	3.3
Total	60	100

Source: Field Data, 2013.

From the findings, 50% of the respondents owned less than 1 acre while 46.7% owned between 1.1 and 3 acres. The findings also show that only 3.3% of the respondents owned between 3.1 and 5 acres of land. The findings reveal that majority of the respondents owned small pieces of land and this may explain why the yields harvested could not take them for a long period of time.

From the study findings, it can be concluded that the communal land ownership in the area makes it hard for respondents to use the land as collateral or sell it to get income and invest in other better livelihood activities. The land may only be used for farming which is destroyed by floods resulting to unsustainable livelihoods. In addition, the small pieces of land owned by respondents in the area makes them to carry out farming on small scale which contributes to low harvests which cannot take people for long periods of time. This results to faster depletion of food leading to unsustainable livelihoods.

CHAPTER SEVEN: LIVELIHOOD SUSTAINABILITY

7.0 Introduction

This chapter presents the findings of the third research question which sought to explore the sustainability of livelihoods adopted by households in Budalang'i. The chapter discusses the study findings on the adequacy of income, households' expenditure, dependence on relief aid the perception of people on their main livelihoods and their alternative activities. The findings are also corroborated with qualitative data obtained from key informants.

7.1 Adequacy of the Household Income

The duration of time taken by a certain amount of income gives an indication of the access to food hence determining the food security situation of the people. High income in the household is expected to last longer than low income. In the study, household heads were asked how many sacks of farm produce they harvested before the floods and this was converted into monetary value so as to get the income obtained from farming. The total income was an addition of income earned from farming and that from alternative livelihood activities. The respondents were asked how long the total income took them before the floods and how it changed after the floods. The study findings are summarized in table 7.1.

Table 7.1: Relationship between Income and Duration Taken in Months

Income in Ksh	Time in Months					Total
	Less than 3	4 -6	7-9	10-12	13 and above	
Below 999	100	0	0	0	0	100
1000-4999	86.3	6.9	0	3.4	3.4	100
5000-9999	66.7	5.6	5.6	16.7	5.6	100
10000-14999	66.7	0	33.3	0	0	100
15000-19999	50	50	0	0	0	100
20000 and above	0	50	50	0	0	100

Source: Field Data, 2013.

The findings show that before the floods, respondents who had an income of less than Ksh 999 reported that the income only lasted for less than three months and 86% of those who had an income of between Ksh 1000 and Ksh 4999 also reported that their income lasted for less than three months. 33.3% of those whose income was between Ksh 10,000 and Ksh 14,999 mentioned

that their income lasted seven to nine months while 50% of those whose income was Ksh 20,000 mentioned that their income lasted for four to six months and seven to nine months respectively. It should be noted that 5.6% of those who had between Ksh 5000 and Ksh 9999 lasted for more than 13 months and 3.4% of those who had ksh1000 to 4999 stayed for also more than 13 months. The findings also show that majority of the income of the households lasted less than three months. From the study findings, it is revealed that households that had higher income of above ksh 20,000 had their income last for more than three months.

The findings further reveal that the income of a few people was able to take them for more than 10 months meaning that the income obtained from farming and other alternative activities was not sustainable since it could not take people for long. When asked why the income could not sustain them for a long period of time, some respondents mentioned that they had a big family hence their income got finished fast. Other respondents said that their farms were too small thus they got small amounts of produce resulting to low income that could not take them for long. And still on farming some members added that they had farms on the low land and they were always swept away by floods resulting into poor yields. Respondents also attributed the faster depletion of income to paying school fees, and some of those who were involved in business said that their business were too small hence their income were also very little. After the floods most of the respondents mentioned that their incomes had reduced and that they were surviving from hand to mouth in that all their livelihood strategies had been destroyed by floods and therefore whatever they got was being finished within a day. Those who were involved in business mentioned that their business had not picked up well resulting to low profits hence affecting their income.

The findings show that livelihoods could not sustain the respondent for long because of large families which means a lot of needs to cater for. In addition, expenses such as secondary school fees made the respondents spend a lot of their income leading to faster depletion of the income. The small sizes of the farms and their locations in the lowland made the crops get washed away by the floods hence respondents got low yields in the previous harvest leading to unsustainable livelihoods.

7.1.1 Expenditure Patterns

Household expenditure may determine whether livelihoods will be sustainable or not. More expenses means that the households needs are many hence more income will be spent on meeting the needs resulting to faster depletion of the income. This therefore means that household expenditure may determine how long the income takes consequently affecting sustainability. Table 7.2 presents the study findings on the respondents' expenditure of essential items such as food, school fees, clothing, farm inputs, medical, household utilities such as paraffin, match box and household assets before the floods

Table 7.2: Total Households Expenditure per Month before Floods

Item	Money spent per month in Ksh
Food	296,000
School Fees	78,936
Clothes	15,190
Farm Inputs	32,310
Medical	21,738
Fuel	25,890
Household assets	9,430

Source: Field Data, 2013.

The study findings show that the respondents spent approximately Kshs 296,000 per month on food while school fees and farm inputs cost them approximately Kshs 78,936 and Kshs 32,310 respectively before the floods. The findings also show that household assets such as chairs, utensils and tables cost the least in that the respondents spent Ksh 9,430. Fuel used by the household was said to cost approximately Kshs 25,890 while medical and clothing cost the respondents about Kshs 21,738 and Kshs 15,190 respectively.

From the study findings it is revealed that households spent so much on food than the rest of the needs. This may be attributed to the low yields from the farms prompting households to depend on purchasing food resulting into high expenditure. The low yields of harvests from the farms were attributed to having small farms that are mostly leased. In addition, floods of 2011 which affected the crops led to poor yields in 2012 which made people spend so much on food. The findings also show that kshs 78,936 was spent on school fees before the floods. This therefore

means that the respondents spent some money on school fees despite the government subsidizing basic education in the country.

Farm inputs cost the respondents less money because majority of them said that they never bought fertilizers and seeds because their farms were always fertile due to alluvial deposits that were brought about by floods. In addition, they always planted seeds from previous harvest hence they did not spend any money on fertilizers and seeds. Some respondents mentioned that they paid people to work on the farms hence this may explain the money spent on farm. The low amount spent on clothing was because majority of the households mentioned that they only bought clothes during Christmas hence they spent less during the month on clothes.

During floods most households were disrupted hence also affecting the prices of certain commodities. Most of the respondents mentioned that the cost of food, fuel and medical services went up during the floods. The rise in cost of food was attributed to lack of enough food in the market due to transport problems. This is because of the roads had been rendered impassable hence traders were not able to supply sufficient food in the area resulting to low supply and high demand leading to increase in prices. In addition, since floods had affected people's food stores, there was high demand of food resulting to increase in prices prompting respondents to spend more on food. Fuel prices also went up because there was high demand and low supply due to poor roads that had been damaged by floods hence kerosene was not easily supplied in the area. Many diseases such as malaria, typhoid and diarrhoea were reported by the respondents to have erupted due to floods leading to rise in medical expenses. Most respondents also added that school fees, farm inputs and expenses on household assets and clothing had not changed during the floods. Most of them said that they did not incur any cost at all on the three needs because most schools had been closed and not much farming was taking place. The respondents also added that that during floods, most people were thinking on how to get food and rescue their properties and not buying clothes nor assets such as chairs. One respondent from Mukhunga village said that:

“During floods you cannot farm nor buy clothes because there is no money but you only think of rescuing your property from floods and how to get food for your family”

This trend continued even after the floods in that respondents mentioned that food prices were still very high just like during the floods and it was anticipated that the prices would remain that way until when they will start harvesting sweet potatoes.

The findings reveal that majority of the respondents spent so much on food and fuel before, during and after the floods and this was attributed to low yields from the previous harvests and having small farms. In addition, flood disruption on food store and farms also disoriented the respondents prompting them to depend on buying food hence resulting to faster depletion of household income leaving the respondents vulnerable.

7.1.2 Household Size and the Duration the Income Takes

The size of the household may determine the time taken for the income to be depleted in that in large families, income may deplete faster than in small families. In the study the relationship between the household size and the duration the income lasted was established. Table 7.3 summarizes the study findings.

Table 7.3: The Relationship between Household Size and Duration of Income

Household Size	Duration the income lasts in Months					Total
	Less than 3	4-6	7-9	10-12	13 and above	
1-5	72	8	8	8	4	100
6-10	76.5	8.8	5.9	5.9	2.9	100
11-15	100	0	0	0	0	100

Source: Field Data, 2013.

The study findings show that all the households that had 11-15 members their income lasted for less than three months while 4% of those that had 1-5 members had their income last for more than thirteen months. The respondents with large families mentioned that they had to cater for many people hence the income could not last longer. They mentioned that they had children to take to school hence pay school fees and others mentioned that they had limited sources of income. Some mentioned that their farms were small compared to the size of the family and hence everything that was being produced could just last for a short period of time. The findings also show that majority of the households' income got depleted in less than three months. These findings confirm the earlier assertion that large households deplete their income faster than small

households due to the many needs of the household members. From the findings, it can be deduced that sustainability of livelihoods depend on the size of the household in that household with many members have many needs to cater for hence depleting the income faster than small households which have less need. This therefore means that household size determines the sustainability of livelihoods.

7.2 Relief Aid

Dependence on relief is an indicator of un-sustainability in that people are always in vulnerable conditions whenever they need relief. Institutions such as the government and non -governmental organizations come to the rescue of people during disasters hence aid them to endure during the period. As discussed in chapter 1, in Budalang'i the government has always spent a lot of money in terms of relief aid in order to help people go through the floods. The study sought to investigate the dependence of people on relief aid before and during the floods. It also sought to get the views of people on what would be done to reduce dependence on relief aid.

The study findings show that 76.7% did not get relief aid before the floods while 23.3% received relief aid. Those who got relief aid mentioned that they were faced with food shortage because their crops had been destroyed by previous floods of 2011 hence they did not get enough produce to take them for long. Some also mentioned that their businesses were too small to augment their income hence they were faced with hunger prompting them to go for the food aid. A few of those who received the aid mentioned that it was meant for the people of Budalang'i hence they had to get it. The findings also show that many people did not get relief aid and majority of the respondents reported that they were not aware of the provision of aid. Some said that the process of food distribution was always faced with corruption and that food was being distributed to the friends and neighbours of the local leaders only.

During the floods majority of the people depended on relief aid for survival. From the findings, 55% received aid while 45% did not get relief aid. Those who received the aid were mainly those who had been displaced for a long period. Respondents mentioned that they received maize, beans, cooking oil from Red Cross and also got tents, utensils, and mosquito nets from UNICEF. After the floods most people mentioned that they still needed relief food because their crops and alternative livelihoods had been disrupted hence they were very vulnerable. The respondents

mentioned that they did not have anything to eat and they were living from hand to mouth. These shows that the alternative livelihoods are not sustainable since majority of people still depend on relief aid when faced with floods.

When asked to give suggestions on how the over dependence on relief aid can be stopped, the respondents reiterated that government needed to build permanent dykes so that floods can be contained hence people can have good harvests. Most respondents in Mukhunga mentioned that:

“We are very hardworking people and only if government could construct permanent dykes in the area to control the floods we would never ask for relief aid because we would always harvest enough produce”

Some respondents and key informants also suggested that terraces should be built along river Nzoia to divert water directly to Lake Victoria so that it does not overflow and cause floods. They also suggested that the government should construct community galleries on high grounds so that after harvesting they can store their food on high grounds so that when floods occur the food is not affected and people will be food secure. Respondents also suggested that government should provide them with seeds of crops that can survive in flood prone areas such as sugarcane and yams so that people can be food secure even if they are faced with floods again. Some key informants also mentioned that the government should build a dam to channel in the water so that the area is not flooded.

The findings reveal that there is still high dependence on relief aid in the study area and this is mainly attributed to the frequent floods which disrupt people’s livelihoods. The respondents maintain that once permanent dykes are not built they will continue suffering and asking for relief aid. This continued dependence on relief aid means that the livelihoods of people are not sustainable.

7.3 Perceptions on Main Source of Livelihood

People will always want to remain in the familiar zones and hence this also the case of respondents in Budalang’i in that majority of the people are farmers and they have always been involved in farming whatever the case whether there are floods or not. In this study respondents

were asked whether they would continue with their main livelihood which is farming in the future. The findings are summarized in the table 7.4.

Table 7.4: Continuity with Farming in the Next One Year

	Frequency	Percent
Yes	57	95
No	2	3.3
N/A	1	1.7
Total	60	100

Source: Field Data, 2013.

From the study findings, 95% of the respondents reported that they would continue with farming, 3.3% mentioned that they will not continue while 1.7% was not depending on farming in the first place. Majority of the respondents mentioned that despite the floods, farming was the only promising livelihood activity in the area. They reiterated that they were very hardworking people and only if the dykes would be made permanent they would cease from asking for relief food aid during floods. They added that their farms were very fertile hence they did not need fertilizers to plant. The fertility of the land may be attributed to the alluvial deposits brought about by the floods. This is also confirmed by GoK (2009) reports. Some respondents also mentioned that they would just continue with farming because it was the only means of getting a living in the area since they had low levels of education hence could not get jobs to earn a livelihood. They also added that due to lack of capital they would not engage in any business and had no option but just to continue with farming. Some of the elderly people said that farming was the only option they had due to their old age and could not get any other job. One elderly person in Bwalwang’a mentioned that

“Am very old, I cannot get a job at my age neither can I do business hence I will just continue with farming. Farming is our cultural activity since time immemorial hence I cannot leave it”

This means that farming as a cultural activity cannot be abandoned totally hence it is highly regarded by the respondents and it may be the reason why many respondents do not want to leave it.

From the study findings only 3.3% would not continue with farming in the next one year and this was because of the frequent floods. They mentioned that, if they would get capital to start business they would stop farming and start business as their main livelihood activity. They also said that they were not getting anything from farming since all the efforts they invested were being wasted by the floods every year hence they were pursuing other options of livelihoods.

From the findings farming is the main source of livelihood in the area and people are not ready to abandon it at least for the near future. This may explain why the livelihoods of the residents of Budalang'i flood plain are not sustainable in that as much as floods occur every year and destroy the farms they still prefer crop farming. This makes it a cyclic phenomenon where all investments in farming are destroyed by floods leading to poverty. In order to ensure that people's livelihoods are sustainable and to reduce poverty in Budalang'i flood plains, the government should build permanent dykes in the area so as to contain floods. This will enable the community to get good harvest hence not requiring relief food.

7.4 Perception on Alternative Livelihoods

Communities that live in disaster prone regions always have alternative livelihoods to cushion them against the effects of disasters on their major livelihoods. In Budalang'i the households engaged in different kinds of activities to cushion them against the effects of floods. Households were asked if they would continue with those alternative livelihoods for the next one year and if not why would they not continue. The findings are summarized in table 7.5 below.

Table 7.5: Continuity with Alternative Livelihoods for the Next One Year

	Frequency	Percent
Yes	17	28.3
No	28	46.7
N/A	15	25
Total	60	100

Source: Field Data, 2013.

From the findings 46.7% said they would not continue with alternative livelihoods for the next one year while 28.3% said they would continue with the alternative livelihoods. 25% of the respondents did not have any alternative livelihoods in the first place. The findings show that majority of the people engage in the alternative livelihoods just to cushion themselves against the

shocks of floods hence they may not invest heavily thus not considering the activities as very important. Respondents who were involved in fishing and fish selling business mentioned that fish in Lake Victoria was diminishing hence they would not rely on the fishing and fish business for long. They further added that the diminishing fish stock was because of overfishing in the Lake hence the immature fish were also removed leaving no room for maturity and reproduction. Some of the key informants attributed overfishing to the high number of young men who migrated from the floodplain to go for fishing since farming was not very promising due to the effects of floods. Respondents also added that they did not benefit much from the fishing because of the middlemen who buy at a very low price and sell at higher prices. These observations are in line with the findings of Magego (2012) who found that fish in Lake Victoria was diminishing due to indiscriminate fishing and increase in number of fishermen in the Lake.

Most of the respondents who were involved in small scale business of selling vegetables, paraffin, and *omena* said that they could not continue with their business because it was not reliable and the profits were very little. They also added that their business were always disrupted by floods and one had to start afresh again after the floods. Most of them said that if they would get enough capital they would change to other forms of business which cannot be affected by the floods and which are more reliable. Some of those who involved in casual work mentioned that it was not a reliable source of livelihood because it depended on the seasons hence one would not rely on it for a long period of time. Some respondents also mentioned that they involved in casual work just for survival purposes and they would abandon it and go back to farming.

The respondents who mentioned that they would continue with their alternative activities said that it is because they had to meet their subsistence needs hence they would continue with their activities. They added that they would not rely on farming alone because it is not promising and instead will always do the alternative livelihoods to augment income from farming. Some of those who were involved in small scale business mentioned that there was ready market for vegetables and hence they would continue doing their business.

These findings show that majority of the respondents were involved in alternative activities just for survival purposes and did not invest much in those activities because they hoped to go back

to farming. The lack of investment in the alternative livelihoods may explain why the alternative livelihoods are not sustainable. According to Ellis (2000), diversification occurring for distress reasons is bad in that it results in household members to undertake casual or low productive activities with poor prospects. The diminishing fish stock in Lake Victoria due to overfishing explains why fishing activities may not continue for a long period of time. The occurrence of frequent floods has also led to disruption of business hence one has to start again which leads to unsustainable use of available resource and as a result affecting the sustainability of livelihoods in Budalang'i.

7.5 Effects of Alternative Livelihoods on the Environment

Livelihood diversification may lead a household to adopt a more vulnerable means of getting a living than even the main livelihood (Davis and Hossein, 1997). The lack of choices for households and diversification due to distress reason may lead to households getting involved in any available activity and this may have effects on the environment. In this study, key informants were asked how the environment had been affected by the effects of activities the locals had adopted due to the disruptions of the floods. Majority of the key informants mentioned that fish stocks were diminishing in Lake Victoria due to overfishing and this posed a threat. They added that fish landing sites had been destroyed by the invasion of people near the landing sites.

Lipton (1987), holds that sustainability of livelihoods entails ecological integrity that is ensuring that livelihood activities do not irreversibly degrade natural resources within a given ecosystem. From the findings, the continual overfishing in the Lake has led to reduced fish stocks hence making people more vulnerable because they can no longer get sufficient fish for their livelihoods. It has also led some people to abandon fishing completely and look for other alternatives. This has affected the sustainability of livelihoods of Budalang'i people because the future generation can no longer adopt fishing as their alternative livelihood. A few key informants mentioned charcoal burning as an alternative livelihood but it was said that the area had been deforested due to cutting down of trees for rebuilding and that also earlier, people had engaged in charcoal burning hence there were no more trees to cut for charcoal. This explains why the alternative livelihoods are not sustainable because most of the trees have been cut leaving the area bare and deforested hence they cannot burn charcoal to get their livelihoods.

From the findings, it can be deduced that destruction of the environment has led to unsustainability of livelihoods in Budalang'i leading people to poverty. The continued destruction of crops by floods; overfishing in the Lake and the continued cutting of trees for charcoal has led to destruction of the environment hence it cannot provide food for the future generations.

CHAPTER EIGHT: SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.0 Introduction

Floods have affected people in Budalang'i since 1937 up to 2013 as discussed in chapter one. The floods destroy houses, business premises, assets, affects education and the general well being of the people in the area. Among the devastating effects of floods is the continued destruction of farms and farm produce which is the main source of livelihood of people in the study area. To this effect households have learnt to live and survive with these effects by employing several coping strategies, however, these livelihoods are unsustainable since there is high dependence on relief aid during floods and high absolute poverty. This study therefore sought to investigate why livelihoods in flood prone areas of Budalang'i remained unsustainable over the years. The study was guided by the following three research objectives; to find out the livelihood diversification strategies adopted by households due to the perennial floods; to establish the determinants of livelihood diversification strategies employed by the households in Budalang'i and to examine the factors influencing the sustainability of the households' livelihood diversification strategies adopted. This chapter presents the summary of study findings, draws conclusion based on the study findings and gives recommendations.

8.1 Summary of Study Findings

The summary of the study findings are discussed in the following sections according to the research objectives

1. Household Characteristics

Household characteristics are the basic components that distinguish one household from the other. These characteristics determine the kind of livelihoods households engage in and consequently determine the livelihood outcomes. Age of the household head may determine the kind of livelihood activities adopted. Young people are likely to engage in labour intensive activities unlike the elderly. In addition, the young people can engage in activities far away from the home than the elderly people. The study findings revealed that majority of the respondents in the study were people aged 50 years and above. It was mentioned that most young people in area had gone for fishing while others had migrated to Port Victoria to work as casuals in packing

omena and others had gone to work in warehouses in Mombasa. Most households in the study area at the time of interview were headed by women and it was reported that most men had migrated to Lolwe an Island in Lake Victoria to look for fishing opportunities and others had migrated to Mombasa to work in warehouses.

Marital status of households heads influence the livelihood activities adopted by households. Marital status can determine access to resources in the community and as a consequence determining the livelihood activities adopted by a household. From the study findings, majority of the respondents were married but there were also a considerable number of widowed respondents. It was mentioned that the high prevalence rates of HIV/AIDS in the area may be the reason why there was a considerable large number of widowed respondents in the area.

The size of the household influence the expenditure levels of the household hence determining the sustainability of the livelihood outcomes. From the study findings, household size ranged from one member to fifteen members and majority of the households had between six to ten members. This means that households had many needs to cater for hence may be the reason why livelihoods could not last for long. The education and skills are the capabilities that enable an individual to engage in certain livelihood activities. From the study findings, majority of the respondents did not complete primary education and no respondent reported to have college or university education. A considerable number of respondents never went to school. This means that the low levels of education in the study may hinder people from getting lucrative jobs and consequently affecting their livelihood outcomes.

2. Livelihood Activities

Livelihood activities are what individuals or households engage in to make a living. The main livelihood activity that a household undertakes is therefore regarded as the major source of livelihood. The study sought to establish the main livelihood activities of the respondents and the trends before, during and after the floods. From the study findings, crop farming was the main livelihood activity done by the respondents despite the perennial floods experienced. The respondents indicated that before the floods, they relied on crop farming as their major source of livelihood. They reiterated that farming was promising but was only disrupted by floods. During floods, the respondents depended on relief aid and the little food from previous harvest. They

indicated that they got maize, beans, rice and cooking oil from Red Cross. The dependence on relief aid shows the unsustainable nature of the livelihoods of the respondents. After the floods, respondents also depended on beans that survived the floods and sweet potatoes and vegetables that were planted after the floods. It therefore emerged that crop farming was the main livelihood activity of the respondents in the study area.

Communities that live in disaster prone areas adopt alternative livelihoods to augment their income from the main source of livelihood. It emerged from the study findings that households adopted fishing, casual work on farms and employment as the alternative livelihoods. Respondents also engaged in small scale businesses of selling vegetables, *omenas*, cereals, operating shops and paraffin. House constructions, painting and artwork were also alternative livelihoods for some respondents in the study area. During and after the floods most of the livelihoods were disrupted and few people could continue with their alternative activities.

3. Determinants of Alternative Livelihoods

Livelihood diversification is determined by a number of factors. The study established that age, level of education, social and financial assets determined the alternative livelihood choices of the households. The study established that fishing was mainly done by the young people, casual work on the farms was mainly done by the elderly and small scale business majorly done by the middle aged people. The involvement of young people in fishing was attributed to their energy and ease of travel to Lake Victoria while the involvement of the elderly in casual work on the farm was attributed to their advanced age hence they found it convenient to work near the home.

The level of education determines the kind of livelihood activities people engage in and from the study findings, this was also evident. The findings show that majority of the respondents who never went to school and those who did not complete their primary education were involved in fishing, casual work on farms and running small scale businesses. Those who involved in house constructions were majorly those who had secondary education. In addition, majority of the respondents who were employed either had completed primary education or secondary education meaning that there were some educational requirements for one to be employed. The low levels of education in the area rendered people to be involved in livelihood activities that have low returns consequently leading to unsustainable livelihoods.

The livelihood activities were also influenced by the social and financial assets of the respondents. The study findings revealed that only 30% of the respondents had savings before floods and the remaining 70% did not have savings. During and after the floods, the number of respondents who had savings reduced significantly. It was revealed that majority of the respondents who had savings invested in business and others paid school fees. Therefore it was concluded that savings determined the alternative livelihoods adopted.

The findings also show that only 10% of respondents took loans from financial institutions. Those who took loans mentioned that they invested in business while others paid school fees with the loans. The low uptake of loans by the respondents was attributed to poverty, fear of defaulting hence being sued by financial institutions and lack of collateral. The fear of being sued by banks because of default, poverty and lack of collateral prevented majority of respondents from taking loans and therefore lacking capital to invest in business and other livelihood activities. This therefore affected the choice of livelihood activities consequently affecting the livelihood outcomes.

4. Livelihood Sustainability

The sustainability of livelihood according to Lipton (1987) is a function of how men and women utilize asset on both short and long term basis. In addition, sustainability also implies ensuring that livelihood activities do not degrade natural resources within a given ecosystem. From the study findings, the small farms that the respondents own were said to produce low yields which could not take them for long. Expenses such as school fees were also mentioned by the respondents to contribute to the faster depletion of the income. The continued overfishing in Lake Victoria has led to reduction in fish stocks hence affecting the income of fishermen. The respondents regarded the alternative livelihoods as just for survival and they hoped to go back to farming hence they did not invest a lot in the alternative activities. They also indicated that the continued flood disruptions on the farms, businesses and other livelihood activities always drove them to poverty. Therefore, it was concluded that the continued disruption of floods, the small farms, the household size and expenses such as school fees led to unsustainable livelihoods

8.2 Conclusion

The study findings reveal that, despite the perennial floods experienced in the study area, the respondents still depended on farming as their main source of livelihood. This dependence on farming and the continued destruction of farms and food stores by perennial floods push people into reliance on relief aid and food insecurity leading to unsustainable livelihoods.

The study findings show that floods have continued to disrupt the livelihoods of the residents of Budalang'i flood plain and as a result, people have diversified their sources of livelihoods. The findings also show that respondents involved in fishing, casual work on the farms, small scale businesses, construction of houses and employment in nearby institutions such as schools and hospital as watchmen and cooks. As much as respondents were involved in these activities, they still went back to farming because it was their main source of livelihood and were not ready to abandon it despite the perennial floods. Respondents mentioned that they engaged in alternative livelihood activities just for survival but they would go back to farming. Therefore, the study concludes that, despite the floods, the residents of Budalang'i flood plain still value farming as their main source of livelihood.

The findings reveal that livelihoods could not sustain the respondent for long because of large families which means a lot of needs to cater for. Additionally, expenses such as secondary school fees made the respondents spend a lot of their income leading to faster depletion. The small sizes of the farms led to low yields in the previous harvest which was depleted faster leading to unsustainable livelihoods. Therefore, it can be concluded that the household size, the small farms and expense contributed to unsustainable livelihoods.

The study established that the continued destruction of crops by floods, overfishing in the Lake and the continued cutting of trees for charcoal led to destruction of the environment hence it cannot provide food for the future generations. It can therefore be concluded that that the destruction of the environment has led to unsustainable livelihoods in Budalang'i leading people to poverty.

8.3 Recommendations

8.3.1 Policy Recommendations

The study findings established that despite the perennial occurrence of floods and the consequent destruction of farms and farm produce, the residents of Budalang'i flood plain still consider crop farming as their major source of livelihood. It also emerged that the respondents were involved in alternative livelihoods just for survival purpose hence did not invest much in them. It is therefore imperative to come up with policy recommendations that can boost livelihood diversification activities so that the residents of flood prone areas can endure floods without facing food insecurity and destitution. The study therefore makes the following recommendations:

The inhabitants of Budalang'i flood plain need to be educated on meaningful investment on alternative livelihoods. There is also need for stakeholders to offer grants and soft loans to the residents so that they can invest in the different kinds of businesses thus have sustainable livelihoods.

The inhabitants of the flood plain need to be supported so that they can embrace crops that endure floods such as yams and sugarcane. This will ensure food security even during the occurrence of floods. There is also need for research on other crops that can endure floods so that they can be adopted by residents of flood prone areas.

There is need to advance vegetable and sweet potato farming in the area. This is because the crops are early maturing and the locals are able to depend on them after the floods. Therefore, investment in large scale production of these crops can help the residents of flood plains to be food secure hence sustainable livelihoods.

Stakeholders in the financial sector should flex their rules and regulations so as to accommodate people who do not have collateral in order for them to get loans and advance their businesses in the study area. Access to resource may also be an avenue for better choice of alternative livelihoods and consequently leading to better livelihood outcomes.

8.3.2 Recommendations for Further Research

From the study findings, there emerged research gaps that were outside the scope of the study. It emerged that there was considerable number of widows in the study area and this was mainly attributed to the high prevalence rates of HIV/AIDS which are attributed to exchange of fish for sex. A further study is therefore required to investigate the effect of HIV/AIDS on livelihoods in fishing communities. It also emerged that the government interventions towards coping with the effects of floods was not effective. Therefore, a study can be done to assess the effectiveness of government interventions to curb the effects of floods on the livelihoods of people in flood prone areas.

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Appendix 1: Survey Questionnaire for the Households

Good morning /afternoon/evening? I am Linda Were a student at the Institute for Development Studies, University of Nairobi. I am conducting a study on Livelihood diversification in flood prone areas of Budalang'i Constituency, Busia County. I would like to discuss these issues with you. All the information collected will be used for the purpose of this study and will not be revealed to any other person.

Questionnaire Number-----

Date of Interview-----

Section 1 . Demographic Characteristics

1. Name of respondent? -----
2. Gender 1-Male 2- female
3. Age in complete years -----
4. Marital status
 1. Married
 2. Widowed
 3. Single
 4. Divorced/separated
5. Number of people living in the household-----
6. Level of education
 1. Never went to school
 2. Primary complete
 3. Primary incomplete
 4. Secondary complete
 5. Secondary incomplete
 6. college
 7. University

Section 2. Before the Floods

Section 2 (a). Livelihood Diversification Strategies

- 7. What was your main source of livelihoods before the floods? (*probe also the income received per month*-----

- 8. Did you have any other source of livelihood at that time? 1 Yes 2 No
- 9. If yes in question 8, specify this other source and approximate income received.-----

- 10. How long did the income you received from the livelihood activities take you and your family? -----*months*

Section 2 (b). Determinants of Livelihood Diversification

- 11. What motivated you to choose the livelihood activities you have mentioned in question 7 and 9 above?(*probe for the any incentive, presence of ready market or any other driving force behind the livelihood activity mentioned above*) -----

Natural Assets

- 12. Do you own the land you are living on? 1 Yes 2 No
- 13. How many acres do you have? -----
- 14. What type of lands rights do you hold? -----
- 15. If yes in 12 above, how long have you lived here?-----years
- 16. If less than 5 years in 15 above, where were you living before and why did you migrate/move to this place?-----

- 17. What type of crops did you grow on this land before the floods?-----

- 18. Approximately how many 90kg sacks of produce mentioned above did you get per acre?-----

Social assets

19. Before the floods were you in any group or chama? 1 yes 2 No
20. If yes what benefits did you get from the chama?-----

Financial assets

21. Were you saving any amount of your income? 1yes 2 No
22. If yes how much were you saving per month? -----
23. What did you do with your savings-----

24. Did you ever take a loan from any financial institution to invest in any project? 1 Yes 2 No
25. If yes how much was the loan and what did you do with the loan?-----

26. If yes in 22 above were there any challenges in accessing the loans? (probe for the challenges)-----

Section 2 (c). Sustainability of Livelihoods

27. Why was the income you mentioned in section 2 question 7 not take you further than this?-----
28. Approximately how much were you spending on the following items?

Item	Cost/month
food	
School expenditure	
clothing	
Farm inputs	
medical	
Household utilities(fuel, water)	
Household assets	

29. How many meals were you taking in a day?

- 1. One
- 2. Two
- 3. Three
- 4. Four

30. Did you ever receive food aid? 1 Yes 2 No

31. If yes what were the main reason that made you go for the food aid?-----

Section 3. During the last Floods (**apparently the last floods were experienced in April and May 2013*)

Section 3 (a) Experience with floods

32. During the last floods were you affected? 1 Yes 2 No

33. If yes please narrate how you were affected (probe what was destroyed and how; house, household assets, crops, food stores, animals)-----

34. Did you relocate to another area during the floods? 1 Yes 2 No

35. If yes where did you relocate to?-----

36. How long did you live where you relocated to? -----

37. How were you getting your livelihood?-----

38. What actions did you take to regain your usual life after the floods?-----

Section 3(b) Determinants of livelihood diversification Strategies

Social assets

39. During the floods were you still in the group you mentioned in section 2(b) 1 yes 2 No

40. If yes what kind of help did you get from the group during the floods?-----

41. During the floods did you get any help from relatives? 1 Yes 2 No

42. If yes how did they help you?-----

Financial assets

43. Did you get any loan from MFIs or Banks? 1 Yes 2 No

44. If yes in 41 above what did you use the money for?-----

45. Did you still have your savings?(ask only If the respondent mentioned in section 2b question 19 that he had savings) 1 Yes 2 No

46. If yes in 43 above did you use your savings during the floods? 1 Yes 2 No

47. If yes what did you use your savings on?-----

Institutions

48. Did you get any help from government during the floods? 1 Yes 2 No

49. If yes how did they help you?-----

50. Did you receive any help from any civil society organization (NGO,CBO and FBO)?1 Yes 2 No

51. If yes what kind of help did you get from them?-----

Section 3 (c) Sustainability of Livelihood Strategies

52. How did your expenditure change in the following items during the floods as compared to before the floods?

Item	Trends during the floods 1 increased 2 decreased 3 Remained the same
food	
School expenditure	
clothing	
Farm inputs	
medical	
Household utilities(fuel, water)	
Household assets	

53. Did you ever stay without food during floods? 1 yes 2 No

54. If yes how many times did you stay without food? -----

55. What was the reason of not eating?

1. Did not have money to buy food
2. Food was not available in the market
3. Did not have time to prepare food
4. Others (specify) -----

56. Did you receive any aid during floods? 1 Yes 2 No

57. If yes why did you go for the aid?-----

-

58. What suggestions would you give to prevent dependence on relief aid during floods?-

Section 4. After the recent floods

Section 4 (a) Livelihood Diversification Strategies

59. Do you still depend on your main source of livelihood you mentioned in section 2(a) above? 1 Yes 2 No

60. If yes in question 57 above how has your income trend been? (*probe if it has increased reduced or remained the same and why if there is any change*)-----

61.If no in question 57 above what is your current main source of livelihood and how much do you get per month?-----

62.If no in question 56 above what made you change to the current source of livelihood?-----

63.What other livelihood activities do you do to make a living and how much do you get per month?-----

64.How long does this income take you and your family? -----

65.Why does it not take you further than this?-----

Section 4 (b) Determinants of Livelihood Diversification Strategies

Social assets

66.Are you still in your group you mentioned in section 3b above? 1 yes 2 No

67.If yes in question 64 what benefits do you get from the group?-----

68.If no in question 64 have you joined another group? 1 yes 2 No

69.If yes what benefits do you get from the new group?-----

Financial assets

70.Do you save any part of your income? 1 Yes 2 No

71.If yes in above how much do you save per month?-----

Institutions

- 72. What has the government done in terms of livelihoods in this area?-----

- 73. How has the government initiatives affected your livelihood activities?(probe for explanations)-----

- 74. Are there any civil society organizations (NGOs, CBOs or FBOs) in this area that deal with livelihood activities? 1 Yes 2 No
- 75. If yes in question 72 what kind of projects do they do?-----

- 76. How have these civil society initiatives impacted on your livelihoods?-----

Section 4 (c) Sustainability of livelihood activities

- 77. Would you say that you will continue with your main livelihood activity for the next one year? 1 Yes 2 No
- 78. If no why?-----
- 79. If yes give reasons why you say so?-----
If mentioned alternative activities above ask the following question
- 80. Would you say that you will continue with the alternative activities for the next one year? 1 Yes 2 No
- 81. If no why?-----

- 82. If yes give reasons why you say so?-----

- 83. How has your expenditure trend been in the following items after the floods as compared to during the floods?

Item	Trends during the floods 1 increased 2 decreased 3 Remained the same
food	
School expenditure	
clothing	
Farm inputs	
medical	
Household utilities(fuel, water)	
Household assets	

End

Thank You for your participation.

Appendix 2: Key Informant Guide for Chiefs and Village Elders

Good morning /afternoon/evening? I am Linda Were a student at the Institute for Development Studies, University of Nairobi. I am conducting a study on Livelihood diversification in flood prone areas of Budalang'i Constituency, Busia County. I would like to discuss these issues with you. All information you will give me will only be used for the purpose of this study and will not be revealed to any other person.

Date of Interview-----

Name of the key informant

Chief of -----Location

Village elder of -----Village

1. How have floods affected people's livelihoods?
2. What are the major income generating activities in the area?
3. Have people changed livelihood activities because of the floods? If yes, what activities have they resorted to?
4. In your opinion, what informs their decision to engage in the above activities? (*probe for motivation, driving force, favorable conditions, presence of markets*)
5. Are the profits /income from those activities enough to take people throughout the year?
6. In your opinion, do you think people will continue engaging in these activities in the near future (what makes you think so or otherwise)?
7. Do these activities have any impact on the environment? If yes, explain how
8. When was the last time people received relief food (do you think they will need relief food again, if not why)?
9. What suggestion would you give to prevent dependence on relief food?

Appendix 3: Key Informant Guide for NGO and Government Officials

Good morning /afternoon/evening? I am Linda Were a student at the Institute for Development Studies, University of Nairobi. I am conducting a study on Livelihood diversification in flood prone areas of Budalang'i Constituency, Busia County. I would like to discuss these issues with you. All information you will give me will only be used for the purpose of this study and will not be revealed to any other person.

Name-----

Organization-----

1. What livelihood projects do you do in this area?(*probe before, during and after the floods*)
2. In your assessment do you think you have achieved your objectives?
3. What are the major income generating activities of the people in the area?
4. What challenges have you experienced so far when implementing your projects?