UNIVERSITY OF NAIROBI

FACULTY OF ARTS

SOCIOLOGY DEPARTMENT

THE ROLE OF CDF SUPPORTED WATER PROJECTS TOWARDS POVERTY REDUCTION IN IKOMBE WARD, MACHAKOS COUNTY

MUTISO-KYALO, NAOMI WAVINYA

C50/P/9221/05

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF MASTER OF ARTS IN SOCIOLOGY (RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT) AT THE UNIVERSITY OF NAIROBI

2017

DECLARATION

This project is my original work and has not been submitted for a degree in any other University.

…….. ……

Mutiso-Kyalo, Naomi Wavinya **Date**

C50/P/9221/05

This research project has been submitted for examination with my approval as the University supervisor.

…….. ……

Prof. Preston O. Chitere **Date**

DEDICATION

I dedicate this project to my dear husband Charles Kyalo, our sons Kenneth Mweu, Kevin Mumo, Jude Kyalo and our daughter Joy Mwende.

ACKNOWLEDGEMENTS

The completion of this research project would have been impossible without the material and moral support from various people. Firstly, I thank the Almighty God for giving me the ability to complete this research work. I am greatly indebted to my supervisors, Professor Preston O. Chitere and Mr. G. R. Njeru for their professional guidance and support. I extend my gratitude to all my lecturers and my fellow students in the Master of Arts Class, who added value not only to my studies but to my life in general. I acknowledge my immediate family, especially my husband, who tirelessly cheered me up. My appreciation goes to all the beneficiaries of the CDF supported water projects in Ikombe Ward, who were my respondents, for their willingness to provide the required information during my research study. My gratitude also goes to the Yatta Sub-County officials who provided invaluable information regarding the allocation of the CDF fund to the various projects including the water projects within the sub-county. My parents too deserve my sincere appreciation for their emotional and financial support in the early years of my academic life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Poverty is a condition where people's basic needs for food, clothing, and shelter are not being met. Kenya has wide disparities in economic, social and infrastructural development across regions. The country has been seeking for ways to address poverty. The CDF in Kenya is widely recognized as a successful initiative in devolving resources targeting development projects at the constituency level, aimed at alleviating poverty as well as addressing imbalances in regional development. This study sought to explore the role of CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County. The study was based on Decentralization theory and the Sustainable Livelihoods Approach. The study targeted the beneficiaries of the CDF supported water projects. Purposive sampling technique was used to select 70 respondents. Data collection was performed through questionnaire. Data coding and descriptive analysis were performed through SPSS. The data was summarized by use of tables and figures. The study established that; CDF supported water projects had a positive impact on locals' social economic development, therefore this study recommends for continuous CDF supported water projects especially in the uncovered areas in Yatta Sub-County. In most of the areas, project beneficiaries expressed greater concern on the management of the water projects, an aspect that threatened project sustainability. This study, therefore recommends the County CDF management committee to keep an eye on the appointed local project managers. The management committees should also be supported to undertake short project management courses. This will help to guarantee proper project management and sustainability. In order to empower the local communities to get full economic benefits from the CDF supported water projects, project beneficiaries need to be educated on Agricultural activities that can transform their social and economic welfare. This can be done through deployment of Agricultural extension officers. In order to ensure sustainability of CDF supported water projects, there is need to increase stakeholder participation. The management oversight committee should carefully assess the interest of the stakeholders; which will help to eliminate intergroup conflicts, enhancing project sustainability. Other stakeholders like investors, NGO's and well-wishers should also avail funds to the local communities in various locations in order to accelerate development at the grassroots level.

CHAPTER ONE
INTRODUCTION

1.1 Background of the study

Poverty is a condition where people's basic needs for food, clothing, and shelter are not being met (UNDP, 1997; Vizard, 2006). Poverty is generally of two types: first absolute poverty; synonymous with destitution and occurs when people cannot obtain adequate resources (measured in terms of calories or nutrition) to support a minimum level of physical health (GOK, 2005/06). Secondly, relative poverty occurs when people do not enjoy a certain minimum level of living standards as determined by a government (and enjoyed by the bulk of the population) that vary from country to country, sometimes within the same country (UNDP, 2011). Countries and their citizens are best positioned to create their own poverty eradication strategies, based on local needs and priorities (UNDP, 2011).

Kenya has wide disparities in economic, social and infrastructural development across regions. The country has been seeking for ways to address poverty and has come up with many poverty reduction measures since Independence, most of which have had little success (Muyanga et al., 2007). The previous pre-1990s poverty reduction policies erroneously assumed that the benefits of rapid growth of key sectors such as industry, service and agriculture would automatically trickle down to all sectors of society. More efforts were injected into improving economic performance (export incentive, agricultural food processing, etc.), at the expense of promoting societal welfare enhancing projects (Institute of Economic affairs (IEA-Kenya, 2006).

The late 1990s witnessed the preparation of the National Poverty Eradication Plan (NPEP) and the Poverty Reduction Strategy Paper (PRSP), according to Gamba and Mghenyi (2004), NPEP was formulated to reduce poverty incidence in rural and urban areas by 50% by the year 2015 and also to strengthen the capabilities of the poor to earn income. NPEP was launched in 1999 as a result of failure to combat poverty through the national development plans and poverty-specific programmes (Burke et al., 2008). The aim of NPEP was to provide a national policy and institutional framework for action against poverty. These Poverty Reduction Strategic Papers (PRSP) have been termed as the most comprehensive and most focused policy documents in the fight against poverty since independence (Omiti et.al. 2002). It complements other poverty reduction efforts such as NPEP. The paper aims at facilitating sustainable, rapid economic growth; improve governance and security; increase the ability of

the poor to raise their incomes and improve the quality of life of all citizens especially the poor. Even though the government has been trying to eradicate poverty, there have been major challenges especially mismanagement of the funds and the prevailing political climate.

Kenyans, for a long time, used to mobilize local resources through the “Harambee” spirit to fund development projects (GOK, 2008). Harambee literally meant in Swahili "all pull together", (Ng’ethe, 1979). Following Kenya's independence in 1963, the first Prime Minister, and later first President of Kenya, adopted "Harambee" as a concept of pulling the country together to build a new nation. He encouraged communities to work together to raise funds for all sorts of local projects, pledging that the government would provide their start-up costs. Harambee was later abused and became an avenue for corruption, particularly among public officials (GOK, 2008). This also created inequalities as well as inequitable development. The creation of the Constituency Development Fund (CDF) by the Kenya Government in 2003 was meant to address these challenges at the grassroots level.

1.1.2 The Constituency Development Fund (CDF): An Overview

The CDF program in Kenya was established in 2003 when a new regime with overwhelming national mandate replaced an authoritarian neopatrimonial system that had been in existence for twenty-four years (Otieno, 2013). The CDF was established by an Act of parliament in 2003 and stipulated that 2.5% of the annual government ordinary revenue would be devolved to the then 210 constituencies of Kenya to promote grassroots development (Bagaka, 2008). The main objective of the CDF was to fight poverty and shift planning/identification of projects to the local communities, hence a bottom-up planning approach for development.

As one of the ingenious innovations of the National Rainbow Coalition Rupublic of Kenya, CDF was intended to compliment other existing funds being directed at the community level (Kimenyi, 2005). These funds included the Local Authorities’ Transfer Fund (LATF), Bursary Fund, Roads Maintenance Fund and Fuel Levy Funds among others. Unlike other development funds that filter from the central government through larger and more layers of administrative organs and bureaucracies, funds under this program go directly to the local level and thus provide people at the grassroots the opportunity to make expenditure decisions that maximize their welfare consistent with the theoretical predictions of decentralization (Kimenyi, 2005).

The CDF has proved to be a successful initiative in devolving resources targeting development projects at the constituency level, particularly those aimed at alleviating poverty as well as addressing imbalances in regional development (Kimenyi, 2005). Out of the total allocation, 3% is allocated to CDF Board for administration and 97% is allocated to constituencies in the following formula: 5% of the 97% is allocated to Emergency Reserve; 75% of the balance is disbursed equally across the constituencies while the remaining 25% is disbursed on the basis of the poverty index (Kimenyi, 2005).

The CDF is one of the devolved funds that is aimed at achieving a rapid socio-economic development at the constituency level through financing of locally prioritized projects and enhanced community participation (Kimenyi, 2005). Since its inception in 2003, the CDF had facilitated the many local level development projects. However, various forms of corruption were found to have reduced its efficacy. Manipulation of the process by the Member of Parliament (MP); gender bias; tribalism and nepotism in the awarding of tenders; lack of transparency in allocation and use of disbursed funds; funding of non-priority projects; lack of serious monitoring and evaluation, bribery to secure contracts, location of CDF office at the MP's home or rented from MP's premises at exorbitant and unrealistic monthly rates, among others, are some of the malpractices faced (Kimenyi, 2005).

On the other hand, one of the greatest achievements of the Constituency Development Fund has been shifting from policy formulation from line ministries to communities, thereby encouraging local initiatives, ownership, participatory supervision and accountability, (GOK, 2005). The programme further created employment within communities through awarding of contracts to local artisans and sourcing of local materials. Communities are also empowered through direct involvement in project selection, implementation and procurement. There has also been a general improvement in the infrastructure of most constituencies, especially of social facilities. The bursary component of CDF has reduced the student dropout rate in secondary and tertiary institutions, especially among orphans.

Table 1.1 reveals the amount of funds the Republic of Kenya has been releasing annually up to the current financial year.

Table 1.1 Funds Allocated to Constituencies from Central Government for CDF

Year of Allocation	Central Government Allocation in Kshs. (Billion)	Yatta CDFAllocation in Kshs. (Million)
2003/2004	1.26	6.00
2004/2005	5.60	27.20
2005/2006	7.25	35.20
2006/2007	10.04	48.77
2007/2008	10.10	49.07
2008/2009	10.10	49.07
2009/2010	12.33	59.91
2010/2011	14.29	68.11
2011/2012	16.99	82.48
2012/2013	16.10	102.48
2013/2014	21.97	81.24
2014/2015	31.57	118.22
2015/2016	35.24	33.45

Source: CDF Website

The allocation of the CDF funds was initially based on data on poverty levels that were not current and that some of the criteria used to assess needs were not well defined (RoK, 2008). A study that had been commissioned to identify weaknesses and suggest future direction of the CDF Fund indicated that there are still no sure criteria for the allocation of the CDF fund among the constituencies (RoK, 2008). The study identified the objectives of CDF as to: Control imbalances in regional development brought about by partisan politics, off-load fundraising burden from Members of Parliament, ensure citizen participation through decision-making in project identification, implementation, monitoring and evaluation and change development focus from the district to the constituency.

Since its inception, the CDF has encountered a number of operational and policy challenges which include: Low utilization of completed facilities especially educational and health institutions and cattle dips due to lack of collaboration with line ministries especially on staff

requirements; poor community participation and contribution to projects; weak capacity to identify viable projects; low technical capacity to implement development projects; non-adherence to laid down government procedures, rules and regulations, especially as concerns public procurement; poor management of transition during elections; low utilization of technical officers in the projects; and too many small projects thinly spread with little or low impact (RoK, 2008, Kimenyi, 2005).

The Constituency Development Fund has gained prominence over the previous devolved funds. CDF is well known even among populations with limited or no formal education. The word CDF has filled media houses since its inception. There is therefore no doubt that CDF is helping provide services to communities that for many years did not benefit substantially from government services (Mwangi, 2005).

The CDF was amended in 2007 (RoK, 2008). The Amendment Act 2007 introduced forms of management into the governance of CDF and also delineated the boundaries between parliament and the national management of the CDF (RoK, 2008). The CDF Amendment Act 2007 replaced the National Management Committee (NMC) with the Constituencies Development Fund Board (CDFB). The CDFB is a body corporate, which is headed by a chief executive officer. The board retained its membership of civil servants but required that persons nominated to this board be qualified in finance, accounting, law, engineering, economics or community development. The Amendment Act sought to introduce forms of private sector management to the governance of the CDF (RoK, 2008).

1.2 The Research Problem

Machakos County has two climatic zones, semi-arid and very arid zones (Joylep, 2012). Ikombe Ward, found in Yatta constituency falls under the very arid zone which receives low annual rainfall of between 150 and 250 mm. (Joylep, 2012). Food production has been adversely affected by the low amounts of rainfall experienced in this region hence a majority of households are net buyers of staple foods (maize, soghurm grains and cassava chips). Food relief is common in this area (FPI, 2012). Half of the population in Yatta experiences high levels of poverty since their income levels are below US$16 per month (Kilungu, 2013). Access to clean water is a challenge to the households in Ikombe Ward hence women have to walk for long distances in search of water especially during the long dry spells (Joylep, 2012). This study aimed at exploring the role of CDF supported water projects towards

poverty reduction in Ikombe Ward, Machakos County, as measured by income generation, food security and job creation/employment.

1.2.1 Research Questions

a. To what extent are the CDF supported water projects accessible to the households in Ikombe Ward?

b. How affordable is the water from the CDF supported water projects to the households in Ikombe Ward?

c. What quality/amount is the water from the CDF supported water projects to the households in Ikombe Ward?

1.3 Objectives of the Study

1.3.1 General Objective

To establish the role of CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County.

1.3.2 Specific Objectives

a. To establish the extent of access to CDF supported water projects by the households in Ikombe Ward.

b. To examine the affordability of the water from the CDF supported water projects by the households in Ikombe Ward.

c. To find out the quality/amount of the water from the CDF supported water projects to the households in Ikombe Ward.

1.4 Justification of the Study

Despite the progress achieved since the endorsement of the Millennium Development Goals (MDGs) by world leaders at the United Nations in September 2000, human poverty still remains widespread in certain parts of the world. Globally, the number of extreme poor has dropped by 650 million in the last three decades, a level of progress humankind had never seen. But still there are more than a billion-people living in extreme poverty. In the midst of globalized progress and development, human deprivations are still wide spread (UNDP, 2013). The information on how access, affordability, quality and amount of CDF supported

water projects have contributed towards poverty reduction to the households in Ikombe Ward is unknown.

1.5 Scope and Limitations of the Study

This study was limited to investigating the role of CDF supported water projects towards poverty reduction in Ikombe Ward of Machakos County. The specific variables that were used were access, affordability and quality/amount of water supplied from the CDF supported water projects to the households in Ikombe Ward. An assessment of the well-being factors was done through face to face interviews with the beneficiaries.

1.6 Operational definition of the significant terms

Poverty: A condition where people's basic needs for food, clothing, and shelter are not being met.

Decentralization: The process of redistributing functions, powers, people or resources away from a central location or authority.

Constituency Development Fund (CDF): A decentralized fund in Kenya aimed at alleviating poverty at the grassroots level.

Constituency Development Bursary Fund (CDBF): Fund formally referred to as Secondary School Education Bursary Fund (SEBF), to increase access, ensure retention and reduce disparities and inequalities in the provision of secondary school education in Kenya.

Youth Enterprise Development Fund (YEDF): A fund established to provide an on lending facility to the youth, with low interest rate and flexible collaterals, with an aim of supporting youth-owned enterprises and to enable other youths to start micro and small enterprises.

Income generation: Interventions which attempt to address poverty, unemployment, and lack of economic opportunities to increase participants' ability to generate income and secure livelihoods.

Food security: People are considered food secure when they have availability and adequate access at all times to sufficient, safe, nutritious food to maintain a healthy and active life

Employment: The employment relationship is the legal link between employers and employees. It exists when a person performs work or services under certain conditions in return for remuneration.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter summarizes the review of literature on the role of the CDF as one of the decentralized funds in Kenya and particularly in regard to poverty reduction. In addition, the chapter summarizes the review of literature on the following: theoretical foundations on household income-generation, household food security, community participation and engagement through job creation, decentralization theory, sustainable livelihoods approach/theory, conceptual framework and empirical Studies.

2.2 Theoretical Review

The theories on the causes of poverty are the foundations upon which poverty reduction strategies are based. In this study, decentralization theory and the sustainable livelihoods approach/theory have been reviewed. While in developed nations poverty is often seen as either a personal or a structural defect, in developing nations, poverty is more profound due to the lack of government funds. Some theories on poverty in developing countries focus on cultural characteristics as a retardant development. Other theories focus on social and political aspects that perpetuate poverty. The perceptions of the poor also have a significant impact on the design and execution of programs to alleviate poverty.

2.2.1 Decentralization Theory

Decentralization can broadly be defined as the transfer of public authority, resources, and personnel from the national level to sub-national jurisdictions (Ndegwa, 2002). Decentralization has been a recurrent theme in African countries since independence (Ndegwa, 2002).

Ministry and other stakeholders decided to modify the scheme in line with government policy on decentralization and to respond to complaints of mismanagement and lack of impact. Instead of sending funds from headquarters directly to schools, the funds were channelled through constituencies (Oyugi, 2010).

Decentralization has been described as a process which involves the set of policy reforms geared towards the transfer of resources, responsibilities, or authority from a central and higher level to lower levels of governance or government. Accordingly, the concept has been

used to qualify a given fiscal or political system (Agrawal, 2001; Rondinelli and Nellis, 1986). Based on the literature, the decentralization is therefore a set of state reforms and therefore unlike the case of privatization reforms, it does not include the transfers of authority to non–state actors according to Manor (1999), decentralization policies are classified into any of the categories including: fiscal, administrative, and political and mainly this classification depends on the type of authority which is devolved). Similar arguments have been presented by Parker (1995).

The process of administrative decentralization involves the set of policies which transfer the delivery of social services including health, education, social welfare and the associated administration of such services to the local and subnational governments. In cases where the transfer involves the elements of meeting the costs of the delivery of the social services, then the administrative decentralization is said to coincide with fiscal decentralization (see Falleti, 2004).

According to Falleti (2004), fiscal decentralization is comprised of the set of policies which are designed with the aim of increasing the revenues, of the fiscal autonomy of the local or subnational governments. In fiscal decentralization, the set of policies may also involve some level of institutional reforms. The process may also assume and involve increasing the transfers of funds from the national or central government to the establishment of new sub-national taxes, and the associated authority that may have previously been handled by the national or central government. In the case of the Kenya's CDF, there is an annual allocation of funds to the subnational level of government at the constituency level to all the constituencies, aimed at devolving funds and authority for development purposes.

In political decentralization, the process involves the set of relevant constitutional amendments and the electoral reforms which are geared towards the opening of new or activating some existing but ineffective or dormant—policies about representation in subnational politics. The process could also be aimed at devolving the electoral capacities from the center to the local or subnational level actors. The examples of political decentralization would be the cases of the election of governors and mayors (if they were previously appointed) and the establishment of local and subnational legislative bodies to strengthen the political capacities and create autonomy of the sub-national governments (see Falleti, 2004).

Studies on decentralization have mainly been focused on examining the dynamics and the bargaining relations between the national legislators and their national executive counterparts (Eaton, 2002). Similar work by Garman et al. (2001) explored and described the territorial interests of the national and subnational executives and how these territorial interests define the interests of the various levels of government including state, national, and municipal. Falleti (2004) argues that, when the policy feedback is incorporated in the decentralization mechanisms, the process results to institutional evolution

2.2.2 The Sustainable Livelihoods Approach

Another theory which elaborates poverty reduction is the Sustainable Livelihoods Approach. A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or 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 the short and long term, (Chambers & Conway, 1992; Ingrid, 2005).

Looking at Ikombe Ward in view of this theory, poverty will be reduced when the essential needs have been met and some surplus produce sold in the local markets and others exported. The Sustainable Livelihoods Approach also entails the livelihoods being able to recover from shock. In light of this fact, the government will have to continue providing the financial support through CDF or other ways, to ensure continuous development, which can result in a good surplus from the community. This will not only ensure community needs are met but also that there is enough to cater for the next generations.

Among the various components of a livelihood, the most complex is the portfolio of assets out of which people construct their living. This portfolio includes tangible assets such as stores (e.g., food stocks, stores of value such as gold, jewelry, cash savings) and resources (e.g., land, water, trees, livestock, farm equipment), as well as intangible assets such as claims (i.e., demands and appeals which can be made for material, moral or other practical support) and access, which is the opportunity in practice to use a resource, store or service or to obtain information, material, technology, employment, food or income.

In this study, this theory is used to explain how the Kenya government CDF water supported projects, which would be an ‘asset’ as part of the capabilities of the people of Ikombe Ward

have performed in terms of poverty reduction. The CDF is considered a decentralization scheme that provides communities with the opportunity to make spending decisions that maximize social welfare. Because the Fund benefits communities directly, it stimulates local involvement in development projects and as a result constituents have more information about projects supported under this program (see Kimenyi, 2005). Since the participation is community driven, the Ikombe Ward people have a big say on what projects to be implemented, which would be sustainable for the immediate generation as well as the next generation. This can actually lead to getting rid of poverty other than just reducing it. However, there are concerns on the efficiency and efficacy of the CDF.

Three factors shed light on why the SL approach has been applied to poverty reduction, (Krantz, 2001). The first is the realization that while economic growth may be essential for poverty reduction, there is no automatic relationship between the two since it all depends on the capabilities of the poor to take advantage of expanding economic opportunities and thus the importance of finding out what prevents or constrains the poor from improving their lot in a given situation (Krantz, 2001). The results of this study revealed that poverty has been reduced in Ikombe Ward.

Secondly, there is the realization that poverty, as conceived by the poor themselves is not just a question of low income, but also includes other dimensions such as bad health, illiteracy, lack of social services, etc., as well as a state of vulnerability and feelings of powerlessness in general. Moreover, it is now realized that there are important links between different dimensions of poverty such that improvements in one have positive effects on another. Raising people's educational level may have positive effects on their health standards, which in turn may improve their production capacity. Reducing poor people's vulnerability in terms of exposure to risk may increase their propensity to engage in previously untested but more productive economic activities, and so on (see Kranz, 2001).

Finally, it is now recognized that the poor themselves often know their situation and needs best and must therefore be involved in the design of policies and projects intended to better their lot. Given a say in design, they are usually more committed to implementation. Thus, participation by the poor improves project performance. This is how the CDF in Kenya has been designed to operate.

2.3 Income Generation

Agricultural productivity which heavily depends on availability of water, determines the price of food, which then determines wage costs and the competitiveness of tradable goods leading to a confluence of effects that determine the real income effects of increased output for farming households (World Bank, 2008).

Evidence consistently shows that agricultural growth is highly effective in reducing poverty. Gallup et. al, (1997) examined the economic growth and the income of the poor and concluded that for every 1% increase in per capita agricultural output there was a 1.7% increase in the incomes of the poorest 20% of the population. Similar findings were highlighted by Thirtle et.al, (2001) that on average, a 1% increase in agricultural yields reduced the number of people living on less than US$1 a day by 0.83%.

2.4 Food Security

It was in 1948 when the Universal Declaration of Human Rights affirmed the right of everyone to adequate food. However, access to adequate food in the rural areas of many developing countries depends heavily on access to natural resources, including water, that are necessary to produce food. In fact, water and food security are two sides of the same coin, since food production largely depends on availability of water. The achievement of national food security is a key objective of the agricultural sector. Food security in this case is defined as " a situation in which all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (RoK, 2008).

In the recent years, and especially starting from 2008, Kenya has been facing severe food insecurity problems. These are depicted by a high proportion of the population having no access to food in the right amounts and quality. Official estimates indicate over 10 million people are food insecure with majority of them living on food relief. Households are also incurring huge food bills due to the high food prices. Maize being staple food due to the food preferences is in short supply and most households have limited choices of other food stuffs (RoK, 2008). Crops contribute the largest share of household income, followed by formal employment, business and informal labor activities, and livestock in that order (see World Bank, 2011). Across the Counties, crops are the largest contributors to household income

except in six Counties in the coastal region, where business and informal labor income contribute to the largest share.

2.5 Employment

Nearly all agricultural products require planting, weeding, processing, utilization, storage and marketing. These processes are usually locally available for subsistence farming. When the farm size is large, and also depending on the agricultural products, the processes require appropriate technology to be applied. This calls for qualified professionals to do the work. The large farms generate incomes which are way beyond the subsistence farmers. The wages paid to the technical staff is a good source of income to the workers' specific households.

Unemployment is one of the most daunting economic challenges facing Kenya. The government has consequently placed job creation at the top of its policy agenda. The Youth account for 61% of the unemployed. Many of the unemployed Youth have no job training other than formal schooling. Hence, unemployment is not just a lack of jobs, but also a lack of job skills due to inadequacy of the training infrastructure as well as the means to acquire skills, due to poverty (RoK, 2012). Rapid economic growth can potentially bring a high rate of expansion of productive and remunerative employment, which can lead to a reduction in poverty. Nevertheless, the contribution of the growth process to poverty reduction does not depend only on the rate of economic growth, but also on the ability of the poor to respond to the increasing demand for labour in the more productive categories of employment.

2.6 Empirical Studies

There are various studies that have been conducted with the aim of finding the effect of CDF on reduction of poverty. Baskin et al. (2010) carried a study on Constituency Development Funds (CDFs) as a tool of decentralized development; the study found that CDFs are becoming increasingly significant tools of politicized and decentralized resource allocation in developing countries. They are also popular in the face of a donor community that continues to prefer traditional development driven by central governments in a manner that resembles "rationality" in economically advanced nations.

Ondieki (2010) also did a study on Influence of constituency development supported projects on selected indicators of poverty reduction in Kitutu Masaba Constituency, Kenya. The result indicated that CDF has a great effect on reduction of poverty, good health facility leads to a

reduction of poverty. Auya and Oino (2013) carried a study on the role of constituency development fund in rural development.

The study found that since its inception, CDF has had tremendous impact among the rural communities in Kenya. The paper also argued that the success of CDF as a rural poverty alleviation strategy is not only associated with availability of funds, but also with a myriad of factors, which include, beneficiary participation and involvement and consultative decision making among all parties involved, prioritizing needs by the locals through consultations and effective communication, good leadership and coherent and transparent phase-out plans.

Further a research by (Kimani et al. 2009) on best practices in constituency development fund, the study found that, though community members from the various constituencies were happy with the various aspects of the CDF they felt that CDF can be further strengthened through reviewing the CDF Act and putting in place mechanisms for affirmative action for marginalized and vulnerable groups, separation of powers, civic education on CDF matters, increasing CDF allocation, enhancing transparency and accountability and participatory monitoring and evaluation of CDF activities.

In view of these local studies on effect of CDF, it was clear that little had been done on role of CDF-supported water projects towards poverty reduction. Therefore, this study sought to fill in this research gap by establishing the role of CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County.

2.7 Poverty Reduction

Poverty is a state or condition in which a person or community lacks the financial resources and essentials to enjoy a minimum standard of life and well-being that is considered acceptable in society. Kenya's prospects for long-term growth are among the most favourable in East Africa. Sustained by its investments in infrastructure, its location as a regional business hub, and gradual improvements in governance and public-sector capacity, it is expected to keep growing steadily, according to projections by the World Bank and the International Monetary Fund. While Kenya is on the path to economic growth, however, poverty alleviation remains a challenge. Nearly, half of the country's population live below the poverty line or unable to meet their daily nutritional requirements.

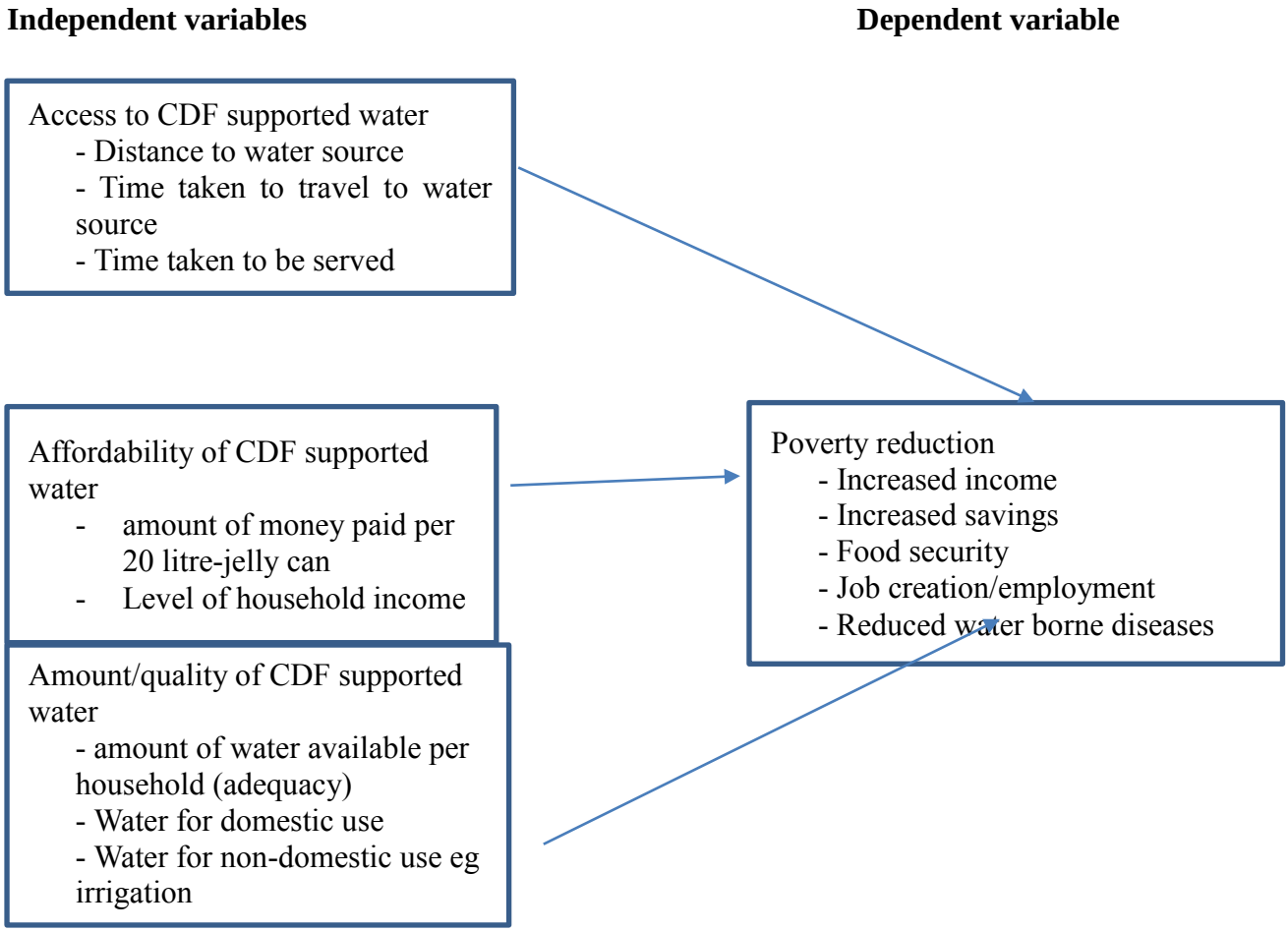
Majority of the population live in rural areas, and rural households rely on agriculture for most of their income. The rural economy, in turn, depends mainly on smallholder farming, which produces the most of Kenya's agricultural output. Poverty and food insecurity are acute in the country's arid and semi-arid lands, which have been severely affected by recurrent droughts.

Majority of the Kenyan population were living below the poverty line in the years 1999/2000 (RoK, 2005/06). As a result, poverty reduction, equality and economic growth have been of great concern to Kenyans and the Kenya Government. It is therefore not a surprise that these concerns feature in many of Kenya's national development plans. When the National Rainbow Coalition (NARC) government came to power, it drew up the five-year Economic Recovery Strategy for Wealth and Employment Creation (ERS) 2003-2008. The ERS was anchored on four pillars, namely: the restoration of economic growth, strengthening the institutions of governance, restoration and expansion of physical infrastructure, and Investment in human capital for the poor (RoK, 2008).

2.8 Conceptual framework

The conceptual framework explains the relationship between the independent and the dependent variables. In this study, the dependent variable was poverty reduction. The independent variables in this case were the household Income generation, household food security and employment that affect poverty reduction.

Figure 2.1 Conceptual framework



Source: Researcher

From the figure above, the conceptual framework presents the key study themes and summarizes how poverty reduction is affected by household access, affordability and Quality/Amount of CDF supported water, in relation to Income generation, household food security and employment.

2.9 Operationalization of Variables

This section analyses the operational definition of variables, the role of CDF-supported water projects towards poverty reduction in Ikombe Ward, Machakos County. The operation of the variables is as shown in table 2.2 below.

Table 2.1 Operationalization of the variables

Objectives	**Independent Variables**	**Indicators**		**Dependent Variable (poverty reduction)**
To establish the extent of access of households to CDF supported water in Ikombe Ward.	**Independent variable: Access to** of CDF supported water	Remunerations	Salary paid per month	Increase in income
		Water accessibility	Cost of water in shillings	Household savings on water
		Time spent to acquire water	Distance in kilometers to water source Reduced time taken to be served	time previously used in search for water now used for other economic purposes
To examine the affordability of households to CDF supported water in Ikombe Ward.	**Independent:** Affordability of CDF supported water	More agricultural products available	Cost of food items reduced	Increased savings at the household level
		Livestock kept/sold	Number and type of livestock kept	Improved and number of livestock kept. Increased income from

				sales of livestock
		New food crops	Increased production and introduction of new food products	Increased supply with reduced prices Increase in sales by farmers
To find out the quality/amount of CDF supported water to the households in Ikombe Ward.	**Independent** Quality/Amount Water of CDF supported water	Availability of safe water	Safe water available to communities	Improved wellbeing at the household
		Amount of water available	Water sufficiency at the household level	Decline in waterborne diseases

CHAPTER THREE
METHODS OF STUDY

3.1 Introduction

This chapter covers the methods used to answer the research questions of the study. The research design, variables and a broad view of the description and the selection of the population and the sample is highlighted. Data collection techniques, research instruments, and data analysis procedure have also been explained.

3.2 Area of Study

Ikombe Ward is located within Yatta Sub County. It has a population of 18,062 (RoK, 2011), characterized by long dry spells with occasional rainfall. The Sub County consists of Ndalani, Matuu, Kithimani, Katangi and Ikombe wards. Half of the population in this sub county experience high level of poverty since their income levels is below US$16 per month (Kilungu, 2013). Food production has been adversely affected by the low amounts of rainfall experienced in this region hence a majority of households are net buyers of staple foods (maize, soghurm grains and cassava chips). Food relief is common in this area (FPI, 2012). The reason for the choice of Ikombe Ward is that it is most appropriate in providing insight on the contribution of the constituency development fund to poverty reduction according to the researcher in view of the investments on the water sector in the sub-county.

3.3 Research Design

It was justified that descriptive design is most suited and justifiably adopted in this study. Kothari (2004) argues that, good research designs yield maximum information which aids the researcher in providing an opportunity for considering the various dimensions of the problem. Surveys are useful in describing the characteristics of a large population. Additionally, high reliability is easy to obtain by presenting all subjects with a standardized stimulus which ensures that observer subjectivity is greatly eliminated (Mugenda & Mugenda, 2003). Surveys according to Creswell (2009), is the collection of information from a group through the application of questionnaires to a representative sample of that group.

The research design adopted for this study was descriptive survey method. This was preferred because it provided an effective basis for collecting large amounts of information within a short period of time and enabled the researcher to answer the research questions.

3.4 Target Population

Population includes all the units under observation in any discipline (Lavrakas, 2008). Sekeran (1990) defined the study population as the entire group of activities, humans, and other units of interest that meet the defined criteria for inclusion in a study. There is a total of 30 CDF water supported projects in Ikombe Ward. The target population comprised of various stake holders including, project beneficiaries, CDF committee members and the local project management committee members.

A report by the World Bank (2004) on towards a water-secure Kenya indicated that of the eight million Kenyans who had access to improved water source in the rural areas, 30 percent were served by water schemes which were managed by water committees and caretakers. In this study setting, on the average, each of the water project served about 30 households and hence an estimated population of 200 people per water project and hence the total beneficiary population of 1000 people.

Table 3.1 Target population

Category of stakeholders	**Target population**	
CDF committee members (general)	7 X 1	7
Project management committee members	15 X 5	75
CDF project Ordinary beneficiaries	200 x 5	1000
Total		**1082**

*There is only one CDF Committee which serves the whole Yatta Sub-County

From Table 3.1 the percentages for each cohort of stakeholders is arrived at in respect to the cohort population in relation to the target population.

3.5 Sample Size and Sampling Procedure

Sampling is a process of selecting a group of people, events or behavior with which to conduct a study (Burns & Groove, 2001). Polit and Hungler (1997) described sampling as the process through which a portion that represents the whole population is selected. Sekaran (2003) defined a sampling frame as the list of all the population from which the sample is drawn. This study used purposive sampling methods in selecting the water projects and the snowball sampling method to select beneficiaries included in the study.

3.5.1 CDF Supported Water Projects Sampled

This study used a purposeful sampling method. According to Barratt *et al*., (2015), purposive sampling is a non-probability sampling procedure through which a researcher identifies study participants based on the strength of their knowledge and experience on the study phenomenon. There are the 30 CDF supported water projects within Ikombe Ward out of which we purposely sampled five (5) for this study. The summary of the sample size for this study is presented on table 3.2

Table 3.2 Sample Size

Projects Sampled	**Sample**	
	Committee members	Ordinary beneficiaries
Kitololo Primary Sch. Borehole	3	11
Ting'ang'a Borehole	3	11
Naivasa Borehole	3	11
Kithito Borehole	3	11
Ikombe Secondary Sch. Borehole	3	11
Total Respondents	**15**	**55**

Source: Researcher

3.5.2 CDF Project Beneficiaries Sampled

The CDF project beneficiaries were the members of the households living close to the CDF supported water projects who benefitted either directly or indirectly from the water projects. Out of the thirty (30) CDF supported water projects in Ikombe Ward, only five (5) were purposively sampled. There were two types of beneficiaries sampled which were, CDF committee members and ordinary beneficiaries as summarized on table 3.1.

a. Committee members

According to Salmen (1995), while gathering information about the value of an activity or intervention should be conducted with the principal users, beneficiary assessments should also target decision makers including leaders and managers who are responsible for the

policy, activity or project. In this study, the researcher included project management committee members. CDF committee members were also part of the CDF project beneficiaries, who had been specifically selected to oversee the operations of the CDF supported water projects. Each water project had a Project Management Committee (PMC) comprised of three to four members. Of the five CDF supported water projects which were purposively sampled, three CDF committee members were contacted and interviewed bringing a total of 15 committee members.

b. Ordinary beneficiaries

Ordinary beneficiaries are the persons for whom a development intervention is intended (Salmen, 1995). In this study, ordinary beneficiaries were any members of the public, who were benefitting from the CDF supported water projects. The researcher used snowball sampling procedure to select eleven ordinary beneficiaries for every sampled project, which gave a sample of fifty-five ordinary beneficiaries.

3.5.5 Key Informants

Key informants have been defined as participants holding social positions in the research setting and with specialist knowledge that is more extensive, privileged or detailed than other people about the processes, other people or happenings about the study phenomenon (Payne & Payne, 2004). In this study, purposive sampling was used to select the following key informants, the local Chief, one church leader, one head teacher, one project committee member and one CDF committee member. In total, the study had five key informants.

3.6 Data Collection

Primary data was used in the study. It was collected by means of an interview guide and a structured questionnaire comprising seven parts. Section A captured demographic data, section B access to CDF supported water projects, Section C affordability of water from the CDF supported water projects while Section D contained data on CDF supported water projects and food security. Section E captured information on CDF supported water projects and income-generation. Section G sought to investigate the CDF water supported projects and well-being indicators.

3.7 Data Analysis

Both approaches of quantitative and qualitative were used for data analysis. Raw Data collected was cleaned, coded and then entered into the computer for descriptive statistics' computation. The Statistical Package for Social Sciences (SPSS version 20) was used to run descriptive analyses to produce Number distribution, means standard deviation and percentages. Tables were used to summarize the data. The qualitative data generated from questionnaires was categorized in themes in accordance with research objectives and reported in narrative form along with quantitative presentation. The qualitative data was used to reinforce the quantitative data.

Further, correlation analysis was done to illustrate the direction of relationship between the independent variables and the dependent variable. The regression model was as follows:

Model;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: Y = CDF-supported water projects; β_0 = Constant Term; β_1, β_2, β_3 and β_4 = Beta coefficients; X_1= Income-generation; X_2= household food security; X_3= job creation/employment; ε = Error term

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter presents the analysis and findings of the study in line with the research methodology. The chapter also presents the background information of the respondents as outlined in the research questionnaire. The analysis and findings of the study are presented in accordance with the objectives of the study. In the overall, the study findings sought to establish the role of the CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County. Descriptive statistics were used to present the study findings.

4.2 Characteristics of the Respondents

This sub-section presents the respondent's background information including, gender, age, education level, marital status, number of children, the number of dependents, occupation and sources of livelihood.

4.2.1 Gender of the Respondents

We examined the gender of the respondents in order to provide assurance that there was fairness in engagement with the participants with regard to inclusion of both male and female. Table 4.1 shows the distribution of the participants in terms of gender.

Table 4.1 Gender of the Respondents

Gender	Number	Percent
Male	23	37.7
Female	38	62.3
Total	61	100.0

From this data, 62.3% of the respondents were female whereas 37.7% were male. The findings thus showed that the respondents of this study were mainly females.

4.2.2 Age of the Respondents

Different age groups are perceived to hold different opinions on various issues. To ensure that study collected wide range of opinions from different age groups; respondents were requested to indicate their age category. Data about the age distribution of the respondents are show in Table 4.2.

Table 4.2 Ages of the respondents

Age category	Number	Percent
Below 29 years	4	6.6
30-39 years	26	42.6
40-49 years	22	36.1
50 years and above	9	14.8
Total	**61**	**100.0**

Table 4.2 shows that, 42.6% of the respondents were aged between 30 and 39 years, 36.1% were aged between 40 and 49 years, 14.8% were 50 years and above while 6.6% were below 29 years. These data indicate that the respondents were drawn from all the age categories.

4.2.3 Level of Education Attained by the Respondents

Individual level of education determines the personal uptake/understandability of different issues. In view of establishing the respondents' ability to respond to research questions, they were requested to indicate their educational qualifications. Results are show in Table 4.3 below.

Table 4.3 Level of Education of the Respondents

Level of education	Number	Percent
None	7	11.5
Primary school	32	52.5
Secondary school	16	26.2
Diploma	6	8.2
Total	**61**	**100.0**

From the table 4.3, 52.2% of the respondents had attained primary school education as the highest level of education, 26.2% held a secondary certificate whereas 8.2% held a college diploma certificate as their highest level of education. This implies that most of the respondents engaged in this research were in a position to respond to research questions effectively.

4.2.4 Marital Status of the Respondents

The study sought to establish the marital status of the respondents. The data on this variable are presented in the Table 4.4 below.

Table 4.4 Marital Status of the Respondents

Marital Status	Number	Percent
Single	4	6.6
Married	50	82.0
Widowed	7	11.5
Total	61	100.0

From the above table, it was clear that majority of the respondents (82%) were married, 11.5% were widowed and 6.6% were single.

4.2.5 Number of Children the Respondents had

The study also sought to establish the number of children the respondents had. The responses are presented in the table 4.5 below.

Table 4.5 Number of Children the Respondents had

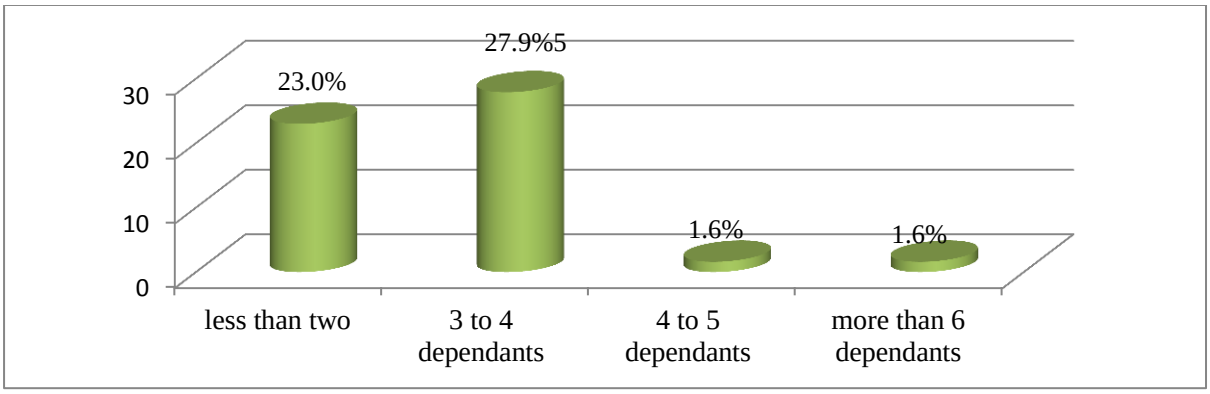
Number of children	Number	Percent
Less than 3	23	37.7
4 to 5	21	34.4
More than 6	16	26.2
No response	1	1.6
Total	**61**	**98.4**

From the table 4.5, it was clear that most of the respondents (37.7%) indicated that they had less than 3 children, 34.4% had 4 to 5 children while 26.2% had more than six children. It was evident that most of the respondents had less than 5 children.

4.2.6 Number of Dependents the Respondents had

The study sought to find out the number of the dependents that the respondents had. The results from the data are presented in figure 4.1 below.

Figure 4.2 Number of Dependents



Of the 33 respondents who indicated that they had dependents, 27.9% noted that they had 3 to 4 dependents, 23% had had less than 2 dependents, while 4 to 5 and or more than 6 dependents were each reported by 1.6% of the respondents.

4.2.8 Occupation of the Respondents

The study sought to establish the occupation of the respondents. Results are presented in Table 4.6

Table 4.6 Occupation of the Respondents

	Number	Percent
Farmer/housewife	40	65.6
Self employed	12	19.7
Wage employment	9	14.8
Total	**61**	**100.0**

Table 4.6 shows that majority of the respondents (65.6%) were either farmers or housewives, 19.7% were self-employed while the least response 14.8% were in wage employment. It was conclusive that most of the respondents were farmers, housewives or self-employed.

4.2.9 Main Source of the Respondents' Livelihood

The study also sought to establish from the respondents' main source of livelihoods. Their responses presented in Table 4.7 as shown.

Table 4.7 Main Source of the Respondents' Livelihood

Livelihood Activity	Number	Percent
Crop farming only	9	14.8
Crop farming and livestock farming	15	24.6
Crop farming, livestock farming and self-employment	8	13.1
Crop farming and self employed	1	1.6
Crop farming and wage employment	5	8.2
Livestock farming only	1	1.6
Livestock farming and wage employment	5	8.2
Wage employment only	1	1.6
Others Main Sources of Livelihood	16	26.2
Total	**61**	**100**

From the study findings, most of the respondents (24.6%) engaged in crop farming and livestock keeping, 14.8% of the respondents indicated crop farming only, 13.1% of the respondents indicated crop farming, livestock farming and self-employment, 8.2% of the respondents indicated either crop farming and wage employment or livestock farming and wage employment whereas 1.6% of the respondents indicated either wage employment only, or livestock farming only or crop farming and self-employed. Further, the study revealed that out of 26.2% of the respondents who indicated others as their main sources of livelihood, such means included; house help, shop keepers, grocers, and watchmen.

4.3 Access of the Respondents' Households to CDF Supported Water Projects

The first objective of the study was: to establish the extent of access of households to CDF supported water projects in Ikombe Ward. The study sought to establish the view of the respondents on statements relating to their access to CDF supported water projects. The indicators of this variable were: Awareness of the respondents of the CDF supported water projects in Ikombe ward, number of the CDF supported water projects, the period of stay without water, various ways in which the water is used from the CDF supported water projects, distance of the CDF supported water projects from home, the time taken to travel to the CDF supported water projects, the time taken to be served at the water points and the water source reliability. The results from the analysis are illustrated in the following subsections below.

4.3.1 Awareness of CDF Supported Water Projects in Ikombe Ward

The study sought to determine the awareness of CDF water supported projects in Ikombe Ward. The responses of the respondents are presented in table 4.8

Table 4.8 Awareness of the Respondents' CDF supported water projects

Responses	Number	Percent
Yes	60	98.4
No	1	1.6
Total	**61**	**100.0**

Table 4.5 shows that 98.4% of the respondents were aware of the CDF supported water projects in Ikombe Ward while only 1.6% of them indicated that they were not aware of the CDF supported water projects.

4.3.2 Number of CDF Supported Water Projects the Respondents Were Aware of

The study also sought to establish from the respondents the number of the CDF supported water projects that they were aware of. The responses are presented in table 4.9

Table 4.9 Number of CDF water supported projects the Respondents were aware of

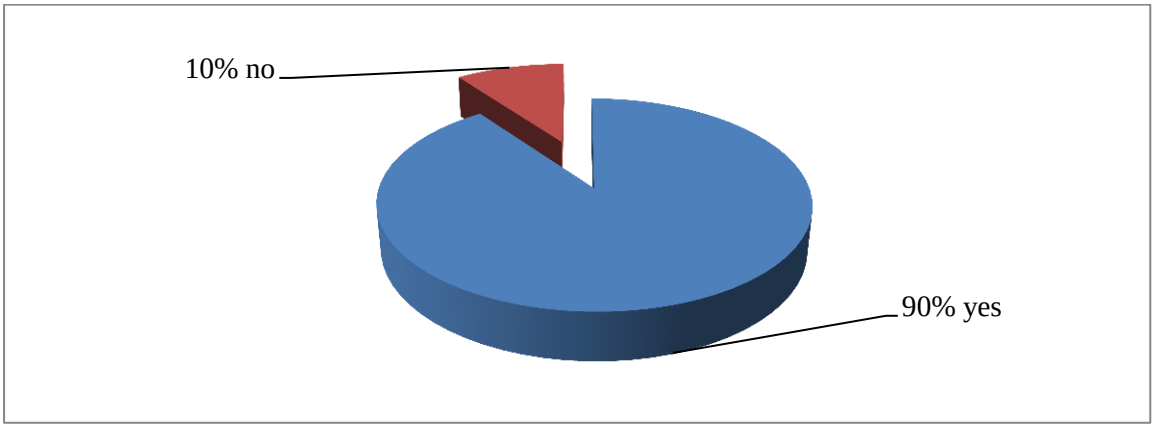
Number of CDF supported water projects Known	Number	Percent
One	38	62.3
Two	18	29.5
More than three	3	4.9
No response	2	3.3
Total	**61**	**100.0**

Table 4.6 shows that a majority (62.3%) of the respondents indicated that they were aware of one water supported project in Ikombe ward, 29.5% indicated that they were aware of two and 5.1% were aware of more than three water supported projects in the ward. This shows that most of the participants were aware of at least one CDF supported water project within the ward.

4.3.4 Use of Water by the Respondents from the CDF Supported Water Projects

The study sought to determine if the respondents used water from the CDF projects. The responses are presented in the figure 4.2 below

Figure 4.3 Use of water from the CDF projects



The table shows that a majority (90%) indicated that they used water from the CDF supported water projects while only 10% of the respondents indicated that they did not use water from the CDF supported water projects. This shows that water from the CDF supported water projects were used by a majority of the respondents' households.

4.3.5 Ways in which the water was used

Out of the 55 (90%) respondents who agreed to have been utilizing water from CDF supported water projects, the study further sought clarification on various ways in which they used the water. Their responses are presented in Table 4.10

Table 4.10 Various ways in which water was used

	Responses		
Water use	**Yes (percent %)**	**No (percent %)**	**Total**
Irrigation	74.5	25.5	100
Domestic	100	0	100
Selling	30.9	69.1	100
Livestock	100	0	100

*The percentages are calculated out of 55 in each raw.

From the data, majority of the respondents (74.5%) were the water from the CDF supported water projects for irrigation. All the respondents (100%) used the water for domestic and livestock purpose, while 30.9 % were selling the water.

4.3.6 Distance from the CDF Supported Water Projects

The study sought to establish the distance taken to travel to the CDF supported water projects from the respondents' homestead. The responses are shown in figure 4.3 below.

Figure 4.4 Distance from the CDF Supported water project

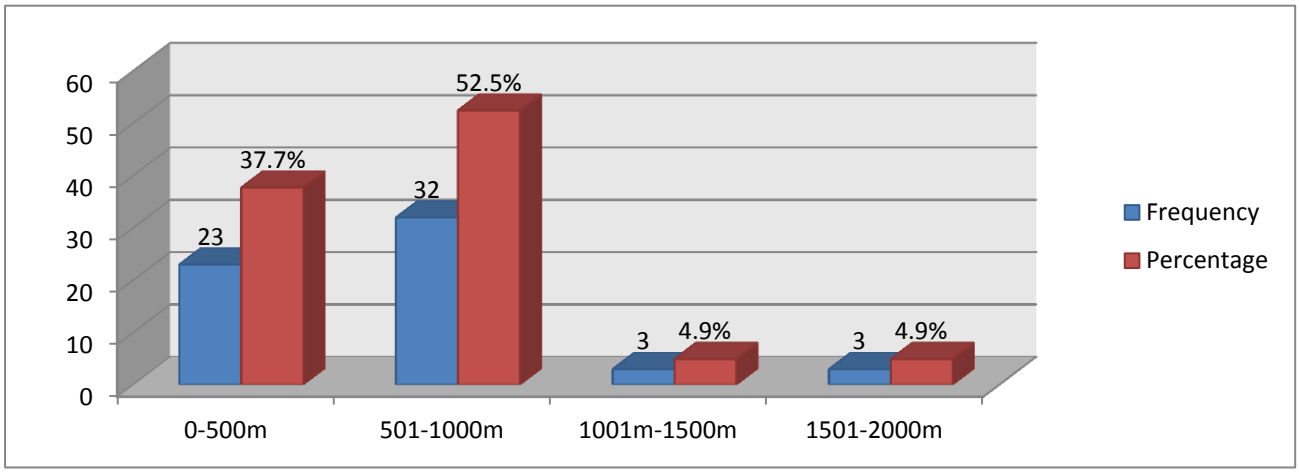


Figure 4.4 shows that majority (52.5%) of the respondents indicated that the CDF projects were between half to 1 kilometer away from their households, 37.7% indicated that the projects were less than half a kilometer. Only 4.9% of the total respondents indicated that their households were 1km to 1.5km from the CDF supported water projects. A similar percentage also indicated that the CDF supported water projects were 1.5 km to 2 Km away.

4.3.7 Time taken to travel to the CDF supported water projects

The study sought to establish the time taken by the household members to travel to the CDF supported water projects from their homesteads. Figure 4.4 below as shows their responses.

Figure 4.4 Time taken to travel to the CDF supported water projects

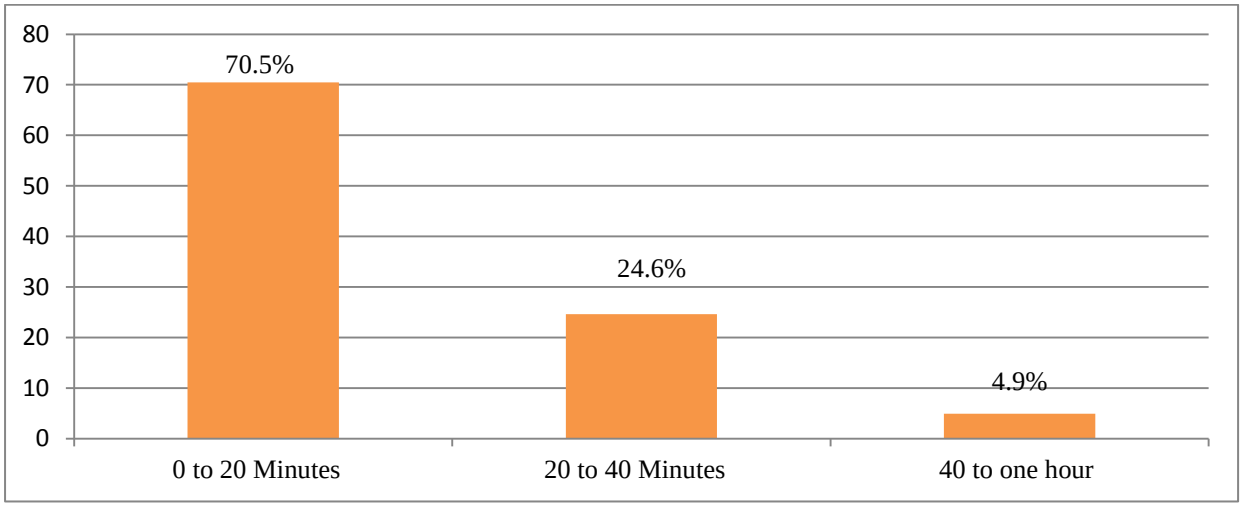


Figure 4.4 shows that majority (70.5%) of the respondents indicated that the distance from the CDF supported water projects was less than 20 minutes, followed by 24.6% who indicated that the projects were 20-40 minutes from their homesteads and by 4.9%) who indicated that their homesteads distance was 40 minutes to1 hour from the CDF supported water projects.

4.3.8 Time taken to be served at the CDF Supported Water Project

The study sought to establish the time the respondents took to be served. The responses are presented in figure 4.5 below.

Figure 4.5 Time taken to be served at the CDF supported water project

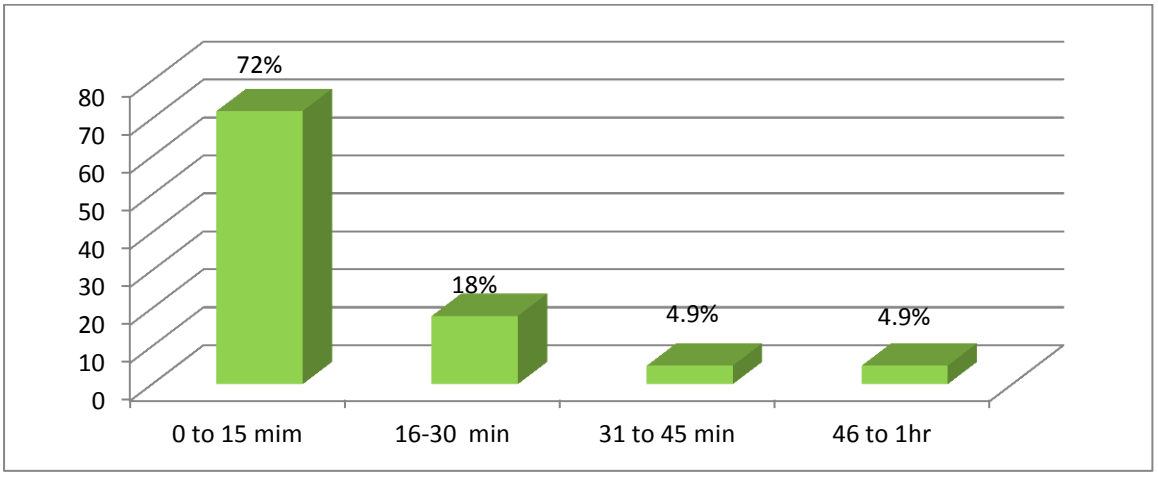
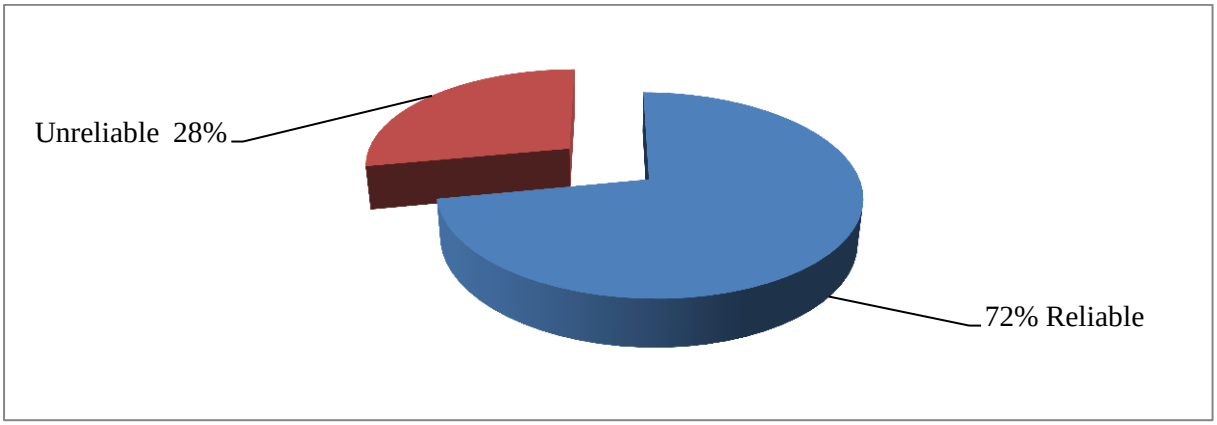


Figure 4.5 shows that majority (72.1%) of the respondents indicated that they took less than 15 minutes before being served, followed by 18% who indicated that they took 16-30 minutes, 4.9% who indicated that they to 31-45 minutes and by a similar 4.9% who indicated that they took 46 minutes to 1 hour before being served.

4.3.9 Water Source Reliability

The study sought to establish the water source reliability. The respondents' answers are presented in Figure 4.6 below.

Figure 4.6 Respondents' answers about Reliability of the CDF supported water Sources



From the answers provided, a majority (72%) of the respondents indicated that the CDF supported water sources were reliable while 28% of them indicated that the water source was unreliable. It was therefore clear from the analysis that majority of the respondents noted the water sources were reliable.

4.3.10 Period taken by the Households without Water

The study sought to establish the approximate time period that the respondents went without getting water. Their responses are presented in table 4.11

Table 4.11 Reliability of water supply

Reliability of water responses	Number	Percent
less than a day	31	50.8
A day	14	23.0
Two days	2	3.3
More than three days	4	6.6
No response	10	16.4
Total	**61**	**100.0**

From these data, majority (50.8%) of the respondents indicated that they had gone for only less than a day, 23% indicated that they had gone for a day, 6.6% indicated that they had gone for more than three days without getting water and 3.3% indicated that they had gone for two days without getting water.

4.4: Affordability of Water from the CDF Supported Water Projects

The second objective of the study was to examine the affordability of CDF supported water to the households in Ikombe Ward. The study showed that with the establishment of CDF supported water projects, there was a significant reduction in the cost of water. Study findings implied that water for household use and other purposes became more affordable among the communities. Study results on the affordability of water prior and after the establishment of CDF water supported projects on the basis of the cost of water in 20-litre jelly-cans are summarized on table 4:12 below.

Table 4.12 Amount of money paid before and after the CDF supported water projects

Amount paid before (Ksh)			Amount paid after (Ksh)		
Amount	Number	Percent	Amount	Number	Percent
Ksh 3	9	19.6	Ksh 0	1	2.2
Ksh 5	17	37.0	Ksh 3	21	45.7
Ksh 20	13	28.3	Ksh 5	21	45.7
Ksh 10	4	8.7	Ksh 2	2	4.3
Ksh15	3	6.5	Ksh 10	1	2.2
Total	46	100.0	Total	46	100.0

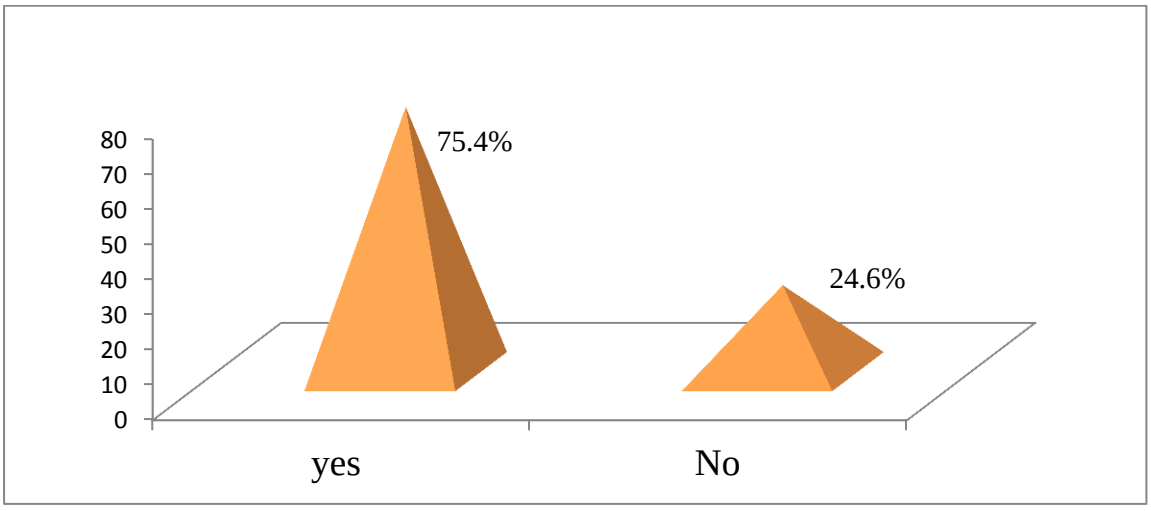
*Percentages are calculated out of 46 in each raw

Data comparing the difference in cost of 20 litres jelly-can of water showed that majority (37.0%) of the project beneficiaries paid Ksh. 5 before CDF supported water projects, however after the CDF supported water projects majority paid either Ksh. 3 or Ksh. 5. In some other water points, project beneficiaries paid Ksh. 20 before CDF supported water projects and Ksh 5 after CDF supported water projects. Generally, the responses showed a significant drop in the cost of 20 litres jelly-can of water; however, it is clear that there was no standardized price per 20 litres jelly-can of water either before or after CDF supported water projects.

4.4.1 Payment of Water from the CDF Supported Water Projects

The study sought to establish whether the respondents paid for water from the CDF projects. Their responses are presented in Figure 4.7 below.

Figure 4.7 Payment of Water from the CDF Supported Water Projects



The Figure shows that 75.4% of the respondents indicated that they paid for the CDF supported water and only 24.6% of the respondents indicated that they did not pay for the CDF supported water.

4.5 CDF Supported Water Projects and Food Security

The third objective of the study was to establish the amount and the quality of CDF supported water among households in Ikombe Ward. The study findings revealed that with the establishment of CDF supported water projects, there was a significant increase in the amount of water available for both household use and other purposes among the communities. Respondents indicated that increased water supply resulted to improved food security

following the introduction of new food crops and increased production of indigenous agricultural and livestock products.

4.5.1 Size of Farm Owned by Household

The study sought to establish the size of the household farms and their use for irrigation purposes prior and after the establishment of the CDF supported water projects. The data was important in establishing the various agricultural activities and the effective use of land among the households and the means of supplementing household food adequacy up to the next harvest. Study findings on the sizes of land owned by households and the irrigation practices prior and after the CDF supported water projects are summarized on Table 4.13 and 4.14 respectively.

Table 4.13 Size of Farm Owned by Household

Farm size in acres	Number	Percent
One acres	5	8.20
Two acres	9	14.8
Three acres	13	21.3
Four acres	8	13.1
Five acres	7	11.5
Seven acres	4	6. 6
Eight acres and above	12	19.7
None response	3	4.9
Total	**61**	**100.0**

Study findings showed that majority of the households owned small to medium sizes of land and ranging between 1 and 8 acres. Majority of the respondents (21.3%) owned three acres of land, 19.7% owned more than 8 acres, while 14.8% had two acres, and 13.1 % owned four acres. Only 11.5% of the respondents owned five acres, while 6.6% and 8.2 % of the respondents owned seven acres and one acre of land respectively.

4.5.2 Irrigation Practices Before and After CDF Supported Water Projects

The researcher sought to determine the number of respondents who engaged in crop irrigation before and after CDF supported water projects. Study results are presented in Table 4.14

Table 4.14 Crop Irrigation Practices

		Before CDF supported water projects		After CDF supported water projects	
Number of farmers involved in irrigation practice	Opinion	Number	Percent	Number	Percent
	Yes	19	31.1	51	83.6
	No	42	67.2	10	16.4
	Total	**61**	**100**	**61**	**100**

Comparison results obtained show that, before the CDF supported water projects only 31% of the respondents were practicing crop irrigation, however after the CDF supported water projects the number of the farmers practicing irrigation increased to 83.6%. Among the some of the crops irrigated included Onions, paw paws, vegetables, bananas, mangoes oranges, potatoes, tomatoes, French beans and tree planting.

4.5.3 Crop Production with Introduction of CDF Supported Water Projects

Further the study investigated the trend in crop production following introduction of CDF supported water projects. Results are analyzed in Table 4.15

Table 4.12 Trends in crop production

Opinion Increase in crop production	Number	Percent
Yes	33	54.1
No	25	41.0
None response	3	4.9
Total	**61**	**100**

Data from table 4.15 shows that majority (54%.1) of the respondents answered in the affirmative when asked if there had been an increase in crop production following introduction of CDF supported water projects, however 41% of the respondents had the contrary opinion. This implies that CDF supported water projects had positively contributed towards food security.

4.5.4 Means of supplementing food adequacy up to the next harvest

The study sought to establish the secondary sources of supplementing food adequacy between the harvest seasons. A major concern over many years among the communities in Ikombe

Ward had been the lack of adequate food supply and the dependence on food hand-outs through relief commonly called "Mwolyo". Results of the study findings are summarised on Table 4.16

Table 4.13 Means of supplementing food adequacy

	Number	Percent
Buying from the market	12	40.0
Relief food e.g. Operation Mwolyo Out (OMO)	9	30.0
Other (Pension, support from working children, etc.)	4	13.3
Went without food	5	16.7
None response	31	50.8
Total	**30**	**100**

Table 4.16 shows that majority of the respondents (40%) bought food from the market place, 30% relied on relief food, 16.7% went without food, whereas 13.3% relied on other means (pension, support from working children, etc.). This implies that most of the respondents bought food from the market place to supplement their households' food adequacy before implementation of the CDF supported water projects.

4.5.5: Duration Which Food Produced Sustained the Family within a Year

The study sought to establish the period which the food produced sustained the family after introduction of CDF supported water projects. The results are analysed in Table 4.17

Table 4.14 Duration Which Food Produced Sustained the Family

Period	Number	Percent
Less than 3 months	5	8.20
4-5 months	17	27.9
6-8 months	28	45.90
More than 9 months	10	16.39
None response	1	1.64
Total	**61**	**100**

Table 4.17 showed that there was improved food adequacy with the establishment of the CDF supported water projects. Prior to the CDF projects, food was inadequate which was mainly supplemented through buying from the local market or through relief. With the introduction of the CDF supported water projects, most (45.9%) of the respondents produced food which adequately sustained their households for periods of 6-8 months, 27.9 % for 4 to 5 months, 16.4% for more than 9 months, whereas 8.20% of the households produced food which was adequate for less than 3 months. These study findings revealed that, the CDF supported water projects had led to improved food adequacy among the households.

4.5.6 Trend in Keeping of Indigenous Cattle

The study assessed the trends in keeping of indigenous cattle before and after the CDF supported water projects. Results are analysed in Table 4.18

Table 4.15 Keeping of Indigenous Cattle

		Before CDF supported water projects		After CDF supported water projects	
		Number	Percent	Frequency	Percent
Cattle	One	4	6.6	3	4.9
	Two	6	9.8	0	0.0
	Three	22	36.1	0	0.0
	Four	12	19.7	12	19.7
	Five	4	6.6	23	37.7
	Six	2	3.3	13	21.3
	None Response	11	18.0	10	16.4
	Total	**61**	**100**	**61**	**100**

Table 4.18 showed that, prior to the CDF supported water projects, majority (36.1%) of the farmers were keeping three indigenous cows while with the establishment of the CDF supported water projects, (37.7%) of the farmers were keeping five indigenous cows. This shows there was a growth in keeping of indigenous cows after the CDF supported water projects.

4.5.7 Trend in Keeping of Improved Cattle

The study also assessed the trend in keeping of improved cattle before and after the CDF supported water projects. The responses are presented in Table 4.19

Table 4.16 Keeping of Improved Cattle

	Before CDF supported water projects		After the CDF supported water projects	
	Frequency	Percent	Frequency	Percent
One	14	23.0	4	6.6
Two	12	19.7	3	4.9
Four	2	3.3	7	11.5
Five	1	1.6	14	23.0
Six	4	6.6	5	8.2
Seven	2	3.3	2	3.3
more than 8			26	42.6
None response	26	42.6	4	6.6
Total	**61**	**100**	**61**	**100**

Table 4.19 showed that before the CDF supported water projects, most (23.0%) of the famers were keeping one improved cow, whereas after the introduction of the CDF supported water projects; on average most (23.0%) of the famers were keeping five improved cattle. This shows a growth in the keeping of improved cattle after the CDF supported water projects.

4.5.8 Trend in Keeping of Indigenous Goats

This study assessed the trend in keeping of indigenous goats before and after the after the CDF supported water projects. Results are analyzed in Table 4.20 below.

Table 4.20 Keeping of Indigenous goats

	Before CDF supported water projects		After CDF supported water projects	
	Frequency	Percent	Frequency	Percent
One to five	26	42.6	10	16.4
Six to ten Goats	12	19.7	14	23.0
Eleven to fifteen	12	19.7		
None response	11	18.0	37	60.7
Total	**61**	**100**	**61**	**100**

Table 4.20 showed that, prior to the CDF supported water projects in the ward, most of the respondents (42.6%) were keeping less than five indigenous goats however after the CDF water supported projects most respondents (23%) were keeping between six and ten goats. Although the results revealed an improvement on the practice of keeping indigenous goats, the study also noted significant decrease in the number of famers who were keeping indigenous goats after the establishment of the CDF supported water projects.

4.5.9 Trend Keeping of Improved Goats

This study assessed the trend in keeping of improved goats before and after the after the CDF supported water projects. Results are presented in Table 4.21

Table 4.21 Keeping of Improved goats

		Before CDF supported water projects		After CDF supported water projects	
	No. of goats	Frequency	Percent	Frequency	Percent
Improved (Goats)	One	3	4.9	2	3.3
	Two	8	13.1	3	4.9
	Three	2	3.3	5	8.2
	Five	1	1.6	9	14.8
	Six			2	3.3
	Seven			4	6.6
	None response	47	77	36	40.98
	Total	**61**	**100**	**61**	**100**

Table 4.21 shows that before the CDF supported water projects, the keeping of improved goats majority (13.1%) were keeping two improved goats however after the CDF supported water projects, 14.8% were now keeping five improved goats.

4.5.10 Trend in Keeping of Indigenous Sheep

This study assessed the trend in keeping of Indigenous sheep before and after the after the CDF supported water projects. The responses are presented in Table 4.22

Table 4.22 Keeping of Indigenous Sheep

	Before CDF supported water projects		After CDF supported water projects	
	Frequency	Percent	Frequency	Percent
One to five	35	57.4	16	26.2
Six to ten	10	16.4	33	54.1
None response	16	26.2	12	19.7
Total	**61**	**100**	**61**	**100**

Table 4.22 shows that, before the CDF supported water projects, majority (57.4%) of the respondents were keeping one to five indigenous sheep however after the CDF supported water projects majority (54.1%) of the respondents were keeping between six to ten sheep. Data reveal significant increase keeping indigenous sheep

4.5.11 Trend in Keeping of Improved Sheep

The researcher assessed the practices of keeping improved sheep before and after the CDF supported water projects. The responses are presented in table 4.23.

Table 4.23 Improved sheep

	Before CDF supported water projects		After CDF supported water projects	
Number	**Frequency**	**Percent**	**Frequency**	**Percent**
One	1	1.6	00	00
Two	0	0	3	4.9
Three	7	11.5	4	6.6
Four	8	13.1	7	11.5
Five	2	3.3	9	14.8
Six	0	0.0	20	32.8
None response	43	70.5	11	81.97
Total	**61**	**100**	**61**	**100**

Table 4.23 showed that before the CDF water supported projects, 13.1% were keeping four improved sheep however after the CDF water supported projects considerable number of respondents (32.8%) were now keeping an average of six improved sheep.

4.5.12 Trend in Keeping of Indigenous Donkeys

The study assessed the trend of keeping donkeys prior and after the CDF supported water projects. Results are presented in Table 4.24

Table 4.24 Indigenous Donkeys

		Before CDF supported water projects		After CDF supported water projects	
	Number of donkey	**Frequency**	**Percent**	**Frequency**	**Percent**
Donkeys	One	36	59.0	31	50.8
	Two or more	14	23.0	18	29.5
	None response	11	18.0	12	19.7
	Total	**61**	**100**	**61**	**100**

Table 4.24 showed that, prior to the CDF supported water projects, majority of the households (59.0 %) were keeping only one donkey, however after CDF supported water projects, households were keeping two or more donkeys. The study showed an improvement in the practices of donkey keeping among the households.

4.5.13 Indigenous Poultry Keeping

The study investigated the trend in keeping of indigenous poultry amongst the respondents, before and after the CDF supported water projects. Responses are presented in Table 4.25

Table 4.25 Poultry keeping practice

	Before CDF supported water projects		After CDF supported water projects	
Number of chicken	**Frequency**	**Percent**	**Frequency**	**Percent**
Between 11 To 15 Chicken	3	5	3	4.9
Between 16 To 20 Chicken	21	34	6	9.8
Between 21 To 25 Chicken	11	18	14	23.0
Above 26 Chicken	7	12	29	47.5
None response	19	31	9	14.8
Total	**61**	**100**	**61**	**100**

Table 4.25 showed that before the CDF supported water projects, majority (34%) of the respondents were keeping between 16 and 20 chicken, however after the CDF supported water projects, 47.5 percent of the respondents were keeping over 26 indigenous chicken.

4.5.14 Improved Poultry

The study investigated the trend in the practice of keeping improved poultry amongst the respondents, before and after the CDF supported water projects. Responses are presented in 4.26

Table 4.26 Poultry keeping practice

		Before CDF supported water projects		After CDF supported water projects	
	No. of chicken	**Frequency**	**Percent**	**Frequency**	**Percent**
Poultry (improved)	Between 11 To 15 Chicken	6	9.8	1	1.6
	Between 16 To 20 Chicken	14	23.0	8	13.1
	Between 21 To 25 Chicken	10	16.4	15	24.6
	Above 26 Chicken	2	3.3	30	49.2
	None response	29	47.5	7	11.5
	Total	**61**	**100**	**61**	**100**

Table 4.26 showed that before the CDF supported water projects, most (23.0%) of the respondents were keeping between 16 and 20 poultry, however after the introduction of CDF supported water projects; majority (49.2%) of the respondents kept more than 26 improved poultry

4.5.15 Households Practicing Fish Farming

The study sought to establish the number of households that had practised fish farming before and after the CDF supported water projects. Responses are presented in 4.27 below.

Table 4.27 Households practising fish farming

		Before CDF supported water projects		After CDF supported water projects	
	Practiced	**Frequency**	**Percent**	**Frequency**	**Percent**
Fish farming	Yes	10	16.4	35	57.4
	No	51	83.6	26	42.6
	Total	**61**	**100**	**61**	**100**

Data from table 4.27, showed that, prior to the CDF supported water projects, 16% of the households were practising fish farming, however after CDF supported water projects the number increased to 57.4 percent.

4.5.16 Beehive Keeping

The study investigated the trend in beehive keeping amongst the respondents, before and after the CDF supported water projects. Study findings are presented in Table 4.28.

Table 4.28 Beehive Keeping

		Before CDF supported water projects		After CDF supported water projects	
		Frequency	**Percent**	**Frequency**	**Percent**
Beehives	Four bee hives	7	11.5	3	4.9
	Six bee hives	8	13.1	10	16.4
	seven bee hives	6	9.8	6	9.8
	Eight bee hives	21	34.4	9	14.8
	More than eight bee hives	0	0	22	36.1
	None response	19	31.1	11	18.0
	Total	**61**	**100**	**61**	**100**

Evidence from Table 4.28 showed that, prior to the CDF supported water projects, 34.4% had kept more than 8 bee hives, however after CDF supported water projects considerable number of the respondents (36.1%) were keeping more than eight bee hives.

4.5.17 Keeping of Improved Rabbits

This study assessed the trend in keeping of improved rabbits before and after the after the CDF supported water projects. The responses are presented in 4.29

Table 4.29 Keeping of Improved rabbits

		Before CDF supported water projects		After CDF supported water projects	
	Opinion	**Frequency**	**Percent**	**Frequency**	**Percent**
Improved (Rabbits)	Two	4	6.6	2	3.3
	Three	19	31.1	1	1.6
	Six	20	32.8	3	4.9
	Seven	3	4.9	14	23.0
	More Than 8	4	6.6	33	54.1
	None response	11	18.0	8	13.1
	Total	**61**	**100**	**61**	**100**

Table 4.29 showed that, prior to the CDF supported water projects, 32.8% of the respondents were keeping six improved rabbits however, after the CDF supported water projects majority (54.1%) of the respondents were keeping more than 8 improved rabbits. There were no responses on the practice of keeping indigenous rabbits.

4.5.18 Indigenous Cattle Sold During Last One Year

The study investigated the number of indigenous cattle sold by an individual famer in the last one year. Responses are presented on Table 4.30

Table 4.30 Number of Indigenous Cattle Sold during Last One Year

Number on cattle	Number of respondents	Percent
One	17	27.9
Two	2	3.3
Three	9	14.8
Non-response	33	54
Total	**61**	**100**

Percentages are calculated out of 61

Table 4.30 showed that, during the preceding one year, most (27.9%) of the respondents had sold one cow, 14.8% sold three cattle while 3.3% sold two cattle. The results revealed that more than half of the farmers who were keeping indigenous cattle (51) had sold at least a cow during the preceding year.

4.5.19 Improved Cattle Sold During the Last One Year

The study investigated the number of improved cattle sold by an individual famer in the last one year. Responses are presented on Table 4.31

Table 4.31 Number of improved cattle sold during last one year

Number of improved cows	Number of respondents	Percent
One	12	19.7
Two	6	9.8
Three	18	29.5
Non-response	43	70.5
Total	**61**	**100**
***Percentages are calculated out of 61**		

Table 4.31 showed that, in the last one year, most (29.5%) of the respondents sold three improved cattle, 19.7% sold one improved cow while 9.8% sold two improved cattle. The results revealed that more than half of the farmers who were keeping improved cattle (67 %) had sold at least a cow in the preceding year.

4.5.20 Indigenous Goats and Sheep Sold During the Last One Year

The study investigated the number of Indigenous goats and sheep sold on in the last one year sold by an individual famer in the last one year. Responses are presented on Table 4.32

Table 4.32 Sale of Indigenous Goats and Sheep during the Last One Year

Number of goats or sheep	Number of respondents	Percent
Two	5	8.2
Three	14	23.0
Non-response	42	68.9
Total	**61**	**100**
***Percentages are calculated out of 61**		

Table 4.32 showed that, in the last one year, most (23.0%) of the respondents sold three goats or sheep while 8.2% sold two goats or sheep.

4.5.21 Number of Improved Goats and Sheep Sold on In the Last One Year

The study investigated the number of goats and sheep sold during the last one year by an individual famer. Responses are presented on Table 4.33

Table 4.33 Number of Improved goats and sheep sold on in the last one year

Number on Improved goats and sheep sold on in the last one year	**Number of respondents**	**Percent**
Two	14	23.0
Four	7	11.5
Non-response	40	65.6
Total	**61**	**100**

Percentages are calculated out of 61

Table 4.33 showed that, in the last one year, most (23.0%) of the respondents sold three improved goats or sheep while 11.5% sold two goats or sheep.

4.5.22 Sale of Indigenous and Improved Poultry

The study assessed the trend in sales of both indigenous and improved poultry in the various households. The responses are presented in Table 4.34

Table 4.34 Sale of Indigenous and Improved poultry

	Indigenous poultry		**Improved poultry**	
Quantity sold	Number	Percent	Number	Percent
less than 10	12	19.7	3	4.9
11 to 20 chicken	7	11.5	2	3.3
20 to 30	6	9.8	12	19.7
more than 30	4	6.6	9	14.8
none response	32	52.5	35	57.4
Total	**61**	**100**	**61**	**100**

Percentages are calculated out of 61

Table 4.34 showed that majority (19.7%) of the households who kept indigenous poultry sold less than 10 chickens whereas 19.7% who kept improved poultry sold between 20 to 30 chicken.

4.6 CDF Supported Water Projects and Income Generation

In line with the three study objectives: (a) to establish the extent of access of households to CDF supported water (b) to examine the affordability of households to CDF supported water and, (c) to establish the quality/amount of CDF supported water available to households in Ikombe Ward, the study sought to establish the respondents' main sources of income. The responses are presented in the Figure 4.8 below.

Figure 4.8 Source of Income

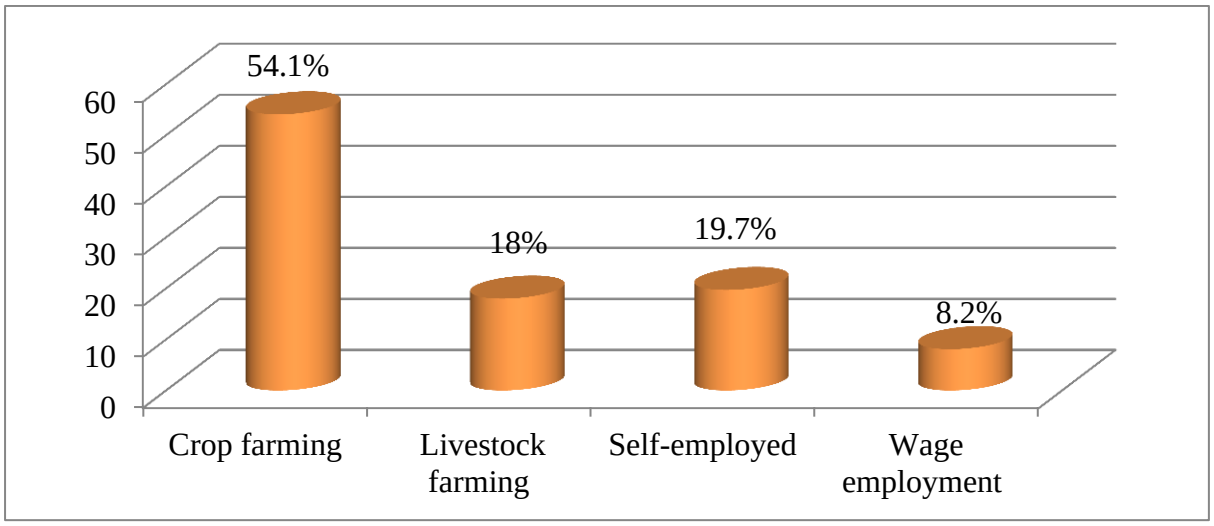


Figure 4.8 showed that, with the establishment of the CDF supported water projects, majority (54.1%) of the respondents' main source of income was crop farming, 19.7% were self-employed, 18% of the respondents kept livestock while 8.2 percent of the respondents' main source of income was wage employment. The role of CDF supported water projects on income generation was associated with job creation and employment, improved food security, affordability and availability of safe water for household use and other purposes, general savings and the overall wellbeing of beneficiaries.

4.6.1 CDF Supported Water and Employment

This section investigates the relationship between CDF water and employment rates

4.6. 2 Employment in the CDF supported Water projects

The study sought to establish the relationship between CDF water and employment. The responses presented in figure 4.9 below.

Figure 4.9 Employment in the CDF water supported projects

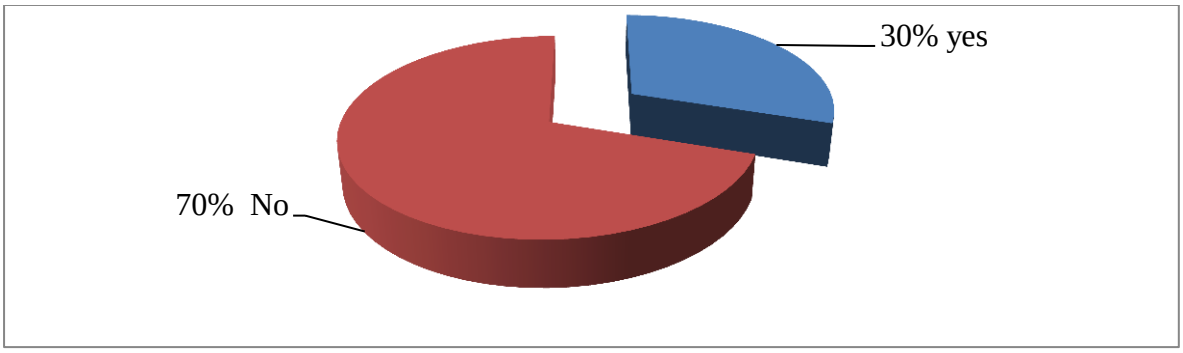


Figure 4.9 shows that majority (70%) of the respondents indicated that they did not get direct employment in the CDF supported water projects while 30% indicated that they got employment from the CDF supported water projects. The data revealed significant level of direct and indirect employment to the beneficiaries.

4.6.3 Employment Provided by CDF Supported Water Projects

The study sought from the respondents who indicated that they got employment from the CDF supported water projects, what they were employed as. The responses presented in Table 4.35 below.

Table 4.35 Type of Employment

Type Of Employment	Number	Percent
Casual Labourer	8	44.4
Pump Attendant	4	22.2
Watchmen/Women	3	16.7
Manager	2	11.1
Other	1	5.6
Total	**18**	**100**

Evidence from table 4.35 shows that, most (44.4%) of the respondents were employed in the CDF supported water projects as casual laborers, (22.2%) were employed as pump attendants, 1.67% were employed as watchmen/women, 11.1% were employed as managers whereas 5.6% indicated other. The findings are in line with the research by Ondieki (2010) who in his research concluded that CDF had a great effect on reduction of poverty, through employment of community members.

4.6.4 Remuneration per Month

The study sought to establish the amount the respondents or a member of their households were paid in a month. The responses presented in Table 4.36

Table 4.36 Remuneration per month

Remuneration	Number	Percent
Below 4999	7	38.9
5000-9999	5	27.8
10000-15999	4	22.2
16000-19999	2	11.1
	18	**100**

**Percentages are calculated out of 18*

Responses from the above table shows, 38.9% of the respondents who had been employed in the CDF supported projects were paid Below 4,999 in a month, (27%) indicated that they were paid between 5,000 and 5,999, 22.2% indicated that they were paid 10,000-15,999 while the least 11.1% indicated that they were paid between 16,000 and 19,999 in a month.

4.6.5 CDF Water Projects and Wellbeing

The following section presents comparison results assessing the quality of various household's social and economic factors before and after CDF water projects. The summary is presented in Table 4.37

Table 4.37 Respondents' Perceptions on CDF Supported Water Projects and Wellbeing

Items Perceptions		Before CDF supported water projects		After CDF supported water projects	
		Frequency	Percent	Frequency	Percent
Diet in the households	Poor	36	59.0	1	1.6
	Average	21	34.4	27	44.3
	Improved	1	1.6	32	52.5
	Non-response	3	4.9	1	1.6
	Total	**61**	**100.0**	**61**	**100.0**
Availability of water in households	Reliable	5	8.2	52	85.3
	Unreliable	55	90.2	8	13.1
	Non-response	1	1.6	1	1.6
	Total	**61**	**100.0**	**61**	**100.0**

Affordability of water in the households	Very affordable	5	8.2	14	23.0
	Affordable	9	14.8	44	72.1
	Expensive	46	75.4	2	3.3
	Non-response	1	1.6	1	1.6
	Total	**61**	**100.0**	**61**	**100.0**
Quality of Water for the household	Very clean.	3	4.9	54	88.5
	Not so clean.	38	62.3	6	9.8
	Salty/Muddy	19	31.1		
	Non-response	1	1.6	1	1.6
	Total	**61**	**100.0**	**61**	**100.0**
Accessibility of water for the household	Very accessible	9.8	9.8	36	59.0
	Accessible	42.6	42.6	12	19.7
	Inaccessible	45.9	45.9	12	19.7
	Non-response	1.6		1	1.6
	Total	**61**	**100.0**	**61**	**100.0**
Amount of water for the household	Sufficient	3	4.9	46	75.4
	Insufficient	57	93.4	14	23.0
	Non-response	1	1.6	1	1.6
	Total	**61**	**100.0**	**61**	**100.0**

4.6.6 Availability of Quality Daily Diet

Reponses investigating the availability of quality daily diet in the households in Ikombe Ward showed that before the CDF supported water projects, most households experienced poor provision of quality daily diet as shown by (59.02%). However, after the CDF supported water projects, the results reveal that the provision of quality daily diet had improved significantly as shown by 52.5 percent response.

4.6.7 Availability of Water in Households

Data assessing the effect of the CDF supported water projects on availability of water in households, showed that, before the CDF supported water projects, 90.2 % of the household's experienced unreliable water supply. Results showed that 85.3 % of the households reported

having a continuous reliable water provision after the CDF supported water projects in line with third study objective.

4.6.8 Affordability of Water Supply in the Households

The data showed that prior to the CDF supported water projects, most households could not afford clean water (75.4%), however with the CDF supported water projects; majority (72.1%) of them could afford clean water for their households. These results reveal what the study objective two (2), sought to examine; the affordability of households to CDF supported water supply in Ikombe Ward.

4.6.9 Quality of the Water Supplied

In line with the third objective of the study, the quality of water before and after the CDF supported water projects was assessed. Responses obtained from the study showed that, prior to the CDF supported water projects, most of the households (62.3%) were relying on unclean and salty water whereas after the CDF supported water projects, majority (88.5%) of the households were using clean water.

4.6.10 Water Accessibility to the Households

Data assessing the accessibility of water for the households showed that, before the CDF supported water projects, most (45.9%) of the households were not in a position to access water efficiently, however the reposes revealed a positive change happened after the CDF supported water projects where majority (59.0%) of the households had efficient water supply. The results are in line with the objective one (1) which sought to establish the extent of access of households to CDF supported water supply in Ikombe Ward.

4.6.11 Amount of Water for the Household

Reponses assessing the sufficiency of water consumed by households before and after the CDF supported water projects, showed that prior to the CDF supported water projects, nearly all the households (93.4%) lacked sufficient water supply however after the CDF supported water projects; more than 75 % of the households were having sufficient supply of water. The results are in line with the study objective three (3) which aimed at finding out the quality/amount of CDF supported water supply to the households in Ikombe Ward.

Table 4.38 Respondents' comparison of wellbeing before and after CDF water projects

Items	Perceptions	Before CDF supported water projects		After CDF supported water projects	
Level of income of your household		Frequency	Percent	Frequency	Percent
	Sufficient	12	19.7	51	83.6
	Insufficient	46	75.4	9	14.8
	Non-response	2	3.3	1	1.6
	Total	**61**	**100**	**61**	**100**
Water borne diseases (e.g. diarrhea):	Prevalent	41	67.2	7	11.5
	In prevalent	10	16.4	44	72.1
	Non-response	10	16.4	10	16.4
	Total	**61**	**100**	**61**	**100**
Jobs creation	No job opportunities	54	88.5	8	13.1
	There are job opportunities	6	9.8	52	85.2
	Non-response	1	1.6	1	1.6
	Total	**61**	**100**	**61**	**100**
Availability of food for the household	Sufficient	6	9.8	52	85.2
	Insufficient	54	88.5	5	8.2
	Non-response	1	1.6	4	6.6
		61	**100**	**61**	**100**

4.6.12 Level of Household Income

The study investigated the trend in household income before and after the CDF supported water projects. Responses from the study showed that prior to the CDF supported water projects, considerable proportion of the households (75.4%) lacked sufficient income however after the CDF supported water projects most of households (83.6%) recorded a sufficient level of income in the household.

4.6.13 Water Borne Diseases

The study sought to establish the prevalence of water borne diseases in the communities before and after the CDF supported water projects. The responses revealed that, 67.2 % of the respondents stated that water borne diseases were more prevalent before the CDF supported water projects, however 72.1 percent of the respondents indicated that water borne diseases were not prevalent after the CDF supported water projects.

4.6.14 Jobs Creation

Data comparing job creation trends in various households before and after the CDF supported water projects, showed that there were less job opportunities (88.5%) before the CDF supported water projects, however after the CDF supported water projects a positive increase in job creation was recorded by 85.2 percent of the respondents. The findings were similar to Auya and Oino (2013) who observed that the CDF projects were a mechanism of rural poverty alleviation not only associated with availability of funds, but also with a myriad of factors, which included beneficiary participation, involvement and consultative decision making among all parties involved. Through the CDF projects, the prioritization of needs by the locals through consultations and effective communication, good leadership and coherent and transparent phase-out plans had become feasible.

4.6.15 Availability of Food in the Household

Data assessing the availability of food for the household showed that before the CDF supported water projects, most of the households (88.5%) in Ikombe Ward lacked sufficient food availability, and however after the CDF supported water projects nearly all the (85.2%) households were enjoying consistent food availability. The results reveal a positive contribution towards food security in the Ward.

4.6.16 Correlation Analysis

The study sought to establish the role of CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County. Pearson Correlation analysis was used to examine this at 99% and 95% confidence levels. The results of the correlation analysis are presented in Table 4.39

Table 4.39 Correlation Analysis

		CDF water supported projects (Y)	Household income-generation (X1)	Household food security (X2)	Job creation/employment (X3)
CDF water supported projects (Y)	Pearson Correlation	1	.831**	.703**	.678**
	Sig. (2-tailed)		.000	.000	.000
	N	61	61	61	61
Household income-generation (X1)	Pearson Correlation	.831**	1	.500**	.490**
	Sig. (2-tailed)	.000		.000	.000
	N	61	61	61	61
Household food security (X2)	Pearson Correlation	.703**	.500**	1	.405**
	Sig. (2-tailed)	.000	.000		.001
	N	61	61	61	61
Job creation/employment (X3)	Pearson Correlation	.678**	.490**	.405**	1
	Sig. (2-tailed)	.000	.000	.001	
	N	61	61	61	61
**. Correlation is significant at the 0.01 level (2-tailed).					

On the correlation of the study variable, the researcher conducted a Pearson moment correlation. From the findings summarized in the table 4.39, the research revealed a strong positive correlation between CDF supported water projects and Household income-generation as shown by correlation factor of 0.831, this strong positive relationship was found to be statistically significant as the significant value was 0.000 which is less than 0.05. The findings further agree with Douglas Huber, et al (2008), who found out that strong positive correlation between positive psychological wellbeing and Community Based Organization projects.

The study also established that there was a strong positive correlation between CDF water supported projects in Ikombe ward and Household food security (X2) as shown by

correlation coefficient of 0.703; this too was also found to be statistically significant at 0.000 confidence level. Finally, the study further found a strong positive correlation between CDF water supported projects and Job creation/employment as shown by correlation coefficient of 0.678. This relationship too was also found to be statistically significant at 0.000 confidence level. The findings concurred with Sharma and Dayaratna (2004), who had concluded that there existed a strong positive correlation between the quality of Family life and community water supported projects.

4.7 Discussion of the Study Findings

In the overall, study findings were largely in line with existing literature on the CDF supported water projects in similar contexts in Kenya. According to Kimenyi (2005), the CDF was initiated to fight poverty through decentralized development projects at the grass-root level and in particular, projects that would bring basic social services health, water, education and security closer to the people. Futhermore, according to UNDP (2011), analysis of gender inequalities and power imbalances at the national level have links with the reduced access to clean water and improved sanitation.

4.7.1 Discussion of the Study Findings for Research Question 1

According to the research question 1, the study aimed at establishing the extent of access of the households to CDF supported water in Ikombe Ward. Study results revealed that, prior to the CDF supported water projects, (45.9%) of the households were not in a position to access water efficiently, however the responses revealed a positive change after the CDF supported water projects with majority (59.0%) of the households efficiently accessing the water supplied. In addition, prior to the CDF supported water projects, 90.2 % of the household's experienced unreliable water supply, but 85.3 % of the households reported having a continuous reliable water provision after the CDF supported water projects. Study results on the four (4) measures on accessibility of CDF supported water are discussed below:

(i) Distance from the CDF supported water projects

With the CDF supported water projects, the distance from the households to the nearest water source was reduced. With the CDF supported water projects, more than half (52.5%) of the respondents were between 0.5 to 1 kilometer away from their households while 37.7% were less than half a kilometer away. Only a small percentage, (4.9%) were 1.5 km to 2 Km away. Prior to the CDF supported water projects, the respondents walked longer distances in search

for water. The study results thus, showed a significant improvement on access to CDF supported water among the households in Ikombe Ward. These findings were consistent with Nyaguthii and Oyugi (2013) who had argued that, socially, CDF supported water boreholes had relieved women from the burden of fetching water from river streams.

(ii) Time taken to travel to the CDF supported water projects

According to Kitur (2015), when water sources are far from the village, girls and women must walk for hours daily to fetch water for their households and that in some communities, families would even keep their daughters at home, instead of going to school, so that they could help in fetching water. In this study, reduction of the distance from the households to the nearest CDF supported water project reflected on reduction of the time taken to travel to the CDF supported water source. Majority (70.5%) of the respondents walked for less than 20 minutes to CDF supported water projects to the nearest water project. This is quite remarkable and reveals that with CDF supported water projects; there was improvement in access to water supply among the households in Ikombe Ward.

(iii) Time taken to be served at the CDF Supported Water Project

In this study, respondents were asked about the time taken to be served at the water source as a measure of accessibility. It was envisaged that, when water was scarce there would be long queues and the amount of the flow of the water would be less and hence, more time would be taken to be served. The study results revealed that with CDF supported water projects, majority (72.1%) of the respondents took less than 15 minutes before being served at the water point. The short average time taken to be served at the water source implied that, CDF supported water was more accessible to the households and that time previously taken waiting to be served could be used for other economic purposes in the household.

(iv) Water Source Reliability

The study sought to establish how reliable the CDF supported water supply was to the beneficiaries as measure of access to water. Majority (72%) of the respondents indicated that the CDF supported water sources were reliable with only 28% of them indicating that the water sources were unreliable. With more than two-thirds of the beneficiaries expressing their satisfaction on the reliability of CDF supported water among their households; it was concluded that there was drastic improvement in access to clean water through the CDF supported water projects.

4.7.2 Discussion of the Study Findings for Research Question 2

In line with the second objective of this study, research question 2 aimed at examining the affordability of households to CDF supported water. The study compared the cost of water per 20 litres jelly-can prior and after the CDF supported water projects. In addition, the study assessed the amount of money that households were paying for water prior and after the CDF supported water projects. The responses showed a significant drop in the cost of 20 litres jelly-can of water. The results also indicated that there was no standard price across the water points. The study used the following measures to determine the affordability of water.

(i) Cost of the CDF Supported Water Per 20 litre Jelly-can

The study results showed that CDF supported water supplied was cheaper and affordable to the households. This is clearly revealed by the study results which indicate that prior to the CDF supported water projects, majority (37.0%) of the respondents paid kshs. 5 for the water in a 20 litre jelly-can, whereas with CDF supported water supplied, the majority (45.7%) paid kshs. 3 for the same 20 litre Jelly-can.

(ii) Amount of money paid before and after the CDF supported water projects

The study results revealed that majority of the households paid either Ksh. 3 or Ksh. 5 per 20 litre Jelly-can before the CDF supported water projects. In some other water points, project beneficiaries paid Ksh. 20 for a similar amount of water prior to the CDF supported water projects which reduced to Ksh 5 after. Generally, the responses showed a significant drop in the cost of 20 litre Jelly-can of water.

(iii) Ways in which the water from the CDF supported water projects was used

Results from the study indicated that, with CDF supported water projects, water was more accessible and affordable to the communities and thus, majority of the respondents (74.5%) were using the water from the CDF supported water projects for non-domestic uses including irrigation. All the respondents (100%) used the water for domestic and livestock purposes, while 30.9 % were selling the water. These findings were also consistent with literature that, agricultural innovation contributes to poverty reduction both indirect and directly (see Berdegue & Escobar, 2002).

4.7.3 Discussion of Findings for Research Question 3

The third (3) objective of this study was to find out the quality and amount of the CDF supported water supplied to the households in Ikombe Ward. The study used the following measures to establish the quality and amount of the CDF supported water supplied.

(i) Quality of the CDF supported Water Supplied

The study results revealed that prior to the CDF supported water projects, most of the households (62.3%) were relying on unclean salty water whereas after the CDF supported water projects, most of the households (88.5%) were using clean water.

(ii) Amount of Water Available to the Households

As per the study results, prior to the CDF water, nearly all the households (93.4%) lacked sufficient water supply but after the CDF supported water projects; more than 75 % of the households were having sufficient supply of water.

(iii) Period Taken by the Households without Water

As revealed by the study results, 50.8 % of them had gone for only less than a day without finding water whereas a small percentage, 3.3% had gone for two days without getting water. These results reveal how scarce water was before the introduction of the CDF water projects in the Ward.

(iv) Water Borne Diseases

The study results revealed that, with CDF supported water supply, there was a decline in the prevalence of water borne diseases. Majority (67.2%) of the respondents indicated that water borne diseases were more prevalent prior to CDF supported water projects; whereas 72.1 % of them reported that water borne diseases were not prevalent after the CDF supported water projects.

(v) Size of Farm Owned by the Households

The study results revealed that with CDF supported water projects, there were improved farming methods among the beneficiaries. Majority of the households owned small to medium (1 to 8 acres) which after the CDF supported water projects, household land was put into improved farming for both agricultural production including horticulture and irrigation, and livestock keeping. Accordingly, 54.1% of the households reported an increase in crop production following introduction of CDF supported water projects. These findings were

largely consistent with the existing literature which showed that efforts of reducing poor people's vulnerability in terms may include supporting them to engage in previously untested but more productive economic activities (see Kranz, 2001).

4.8 Conclusion

The aim of this study was to establish the role of CDF supported water projects towards poverty reduction in Ikombe Ward, Machakos County. The study results revealed increased household income increased household savings, improved food security, job creation and employment, reduced water borne diseases and overall improvement of wellbeing. These outcomes all point at poverty reduction. In line with the study objectives, and based on the findings, this study concludes the following:

(i) CDF Supported Water Projects and Income Generation

The CDF supported water projects contributed to increased household income among the beneficiaries in Ikombe Ward. With increased supply of water for the households and non-domestic uses, households were engaged in improved farming methods in both crop and livestock keeping. With the increased water supply, the cost of water reduced, resulting in savings at the household level and ultimately more income. Furthermore, time spent in travelling to the nearest water points and the time of waiting to be served reduced. It was envisaged that the time saved by the household members was put into other economic uses which would also improve the socio-economic status of the households. The reduction of incidences of water borne diseases was also associated with savings of income that could have otherwise been spent in treatment and seeking medical attention. In summary, the role of CDF supported water projects on income generation was associated with job creation and employment, improved food security, affordability and availability of safe water for household use and other purposes, general savings and the overall wellbeing of beneficiaries.

(ii) Availability of Food in the Households (Food Security)

From the study findings, it is evident that, CDF supported water projects have contributed to the availability and improved food security among the beneficiaries in Ikombe Ward. The study showed that, prior to the CDF supported water projects, up to 85 % of the households experienced food insecurity, however with the CDF supported water projects households were enjoying consistent food availability and surplus which was sold in the local markets. Furthermore, the study revealed improved availability and supply of quality daily diet in the

households in Ikombe Ward, which included new types of foods such as vegetables, livestock products as well as fish. This was due to the increased production of foods with the introduction of new food crops and increased production of both indigenous and improved livestock keeping. These study findings concurred with Thirtle et.al, (2001) who argued that, increasing agricultural yields contributed to poverty reduction.

(iii) Employment Provided by CDF Supported Water Projects

Based on the findings, this study concludes that, CDF supported water projects contributed to job creation and new employment opportunities as casual laborers, pump attendants, watchmen/women, and managers among others. The findings are in line with the research by Ondieki (2010) who in his research concluded that CDF had a great effect on reduction of poverty, through employment of community members. Similarly, study findings showed that CDF supported water projects had contributed to creation of new jobs and employment opportunities with some beneficiaries being employed indirectly through other associated activities including improved farming, and small businesses. These findings were similar to (Mwangi, 2005) that, there was no doubt that CDF had helped in providing employment to communities.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is a synthesis of the entire study, and contains summary of research findings, exposition of the findings, commensurate with the objectives, conclusions and recommendations based thereon.

5.2 Summary of the Study Findings

In summary, in answering the three research questions of this study on accessibility to, affordability of and quality/amount of the water from the CDF supported projects among the households in Ikombe Ward, the three specific objectives of the study were achieved.

i) The study results showed that, CDF supported water projects had contributed towards poverty reduction and improved wellbeing of the beneficiaries and that, with the CDF supported water projects, water had become more accessible to the households than before.

(ii) In regard to the affordability of the CDF water by the households, this study concluded that, with CDF supported water projects, the cost of water declined and thus it became more affordable among the households in Ikombe ward.

(iii) Furthermore, with the CDF supported water projects, households in Ikombe ward had supply of clean water as compared to the unclean (salty, muddy, dirty, unsafe) water which they used prior to the CDF supported water projects.

(iv) The study revealed that there was an increase in the amount and quality of water accessible and available to the households and thus, with the increase, the beneficiaries had put the surplus water into various household and other uses including improved farming methods such as irrigation and keeping of improved livestock and poultry.

(v) In terms of health and sanitation among the beneficiaries, the study revealed that, there was a drastic reduction in incidences of water borne diseases such as diarrhea.

The study also revealed that there was improved wellbeing as measured by food security, income generation, direct and indirect job creation, reduction of waterborne diseases, sufficiency of supply of water and availability of clean (quality) water.

5.3 Conclusion

The objectives of the study were three-fold:

a. To establish the extent to which the water from the CDF supported water projects was accessible to the households;
b. To examine the affordability of the water from the CDF supported water projects was to the households, and
c. To find out the quality/amount of the water from the CDF supported water to the households in Ikombe Ward.

The study results showed that, CDF supported water projects had contributed towards poverty reduction and improved the wellbeing of the beneficiaries and that:

i) Water has become more accessible than before CDF supported water projects

ii) Water is now more affordable to the beneficiaries of the CDF supported water projects

iii) The water is clean as opposed to before CDF supported water projects, which was, unclean (salty, muddy, dirty, unsafe)

iv) The quantity and quality of water has increased and put into various household and other uses including improved farming methods such as irrigation and keeping of improved livestock and poultry, rabbits, fish and bee keeping. There was improvement in the use of the available household farms for increased agricultural production. These study findings were similar to Wiggins Llambí (2010) argument that, small farms' development was desirable and feasible for poverty reduction.

v) There is reduction in incidences of water borne diseases such as diarrhea.

vi) There is improved wellbeing as measured by food security, income generation, direct and indirect Job creation, reduction of waterborne diseases, sufficiency of supply of water and availability of clean (quality) water.

This study provided a comprehensive review of the role of CDF supported water projects on poverty reduction in Ikombe Ward. The study thus concluded that CDF supported water projects had contributed to poverty reduction and to the improvement of wellbeing of the households. According to this study, the role of the CDF supported water projects in poverty reduction was through the following: creation of jobs and employment opportunities, increased household income, increased access to safe and clean drinking water to both the communities and their livestock, improved food security and food availability, reduction of the distance from the households to the water points and reduction of the time spent in fetching water including the waiting time.

It is in view of these study findings that, the study concluded that, CDF supported water projects have contributed towards poverty reduction in Ikombe Ward.

5.4 Policy Recommendations

Based on the study findings, and in view of the positive impact of the CDF supported water projects on the social-economic development and improved wellbeing of the local communities in Ikombe Ward, this study recommends the following:

a) The need for increased allocation of more funds to the CDF towards water projects to ensure the sustainability of the CDF water projects already completed as well as expanding the projects to reach more beneficiaries who have not been served through the existing projects. This could be through systematic prioritization of the water sector projects or through the increased allocation of the CDF at the national level to the Counties.

b) With the concerns raised by beneficiaries on the administration and the management of the water projects, an aspect that threatens project sustainability, the study recommends that County CDF management committee to keep an eye on the appointed local project managers to ensure that the projects are effectively managed and prevent abuse of funds.

c) The management committees should also be facilitated to undertake short project management courses to improve on their overall effectiveness in managing such community projects which would help in guaranteeing proper project management and sustainability.

d) In order to empower the local communities also to get full economic benefits from the CDF supported water projects, project beneficiaries need to be educated on agricultural activities that can transform their social and economic situations. This can be done through deployment of Agricultural extension officers.

5.5 Recommendation for Further Research

The scope of this study was focused on the contribution of CDF supported water projects towards poverty reduction in Ikombe Ward. There is need to conduct similar studies in other locations in order to ascertain the impact of CDF supported water projects on poverty reduction and how to maintain and expand these projects. Further research is also recommended to examine the influence of CDF supported water projects on other sectors including Education and Health where huge investment by the Kenya government has also been made. Furthermore, there is also need to explore the application and extensiveness of monitoring and evaluation in the CDF supported water project in the County.

REFERENCES

Agrawal, A., Gupta, K. (2005) Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. World Development, 33(7), pp. 1101-1114.

Alila, P. O., & Njeru, E. H. (2005). 7. Policy-Based Approaches to Poverty Reduction in Kenya: Strategies and Civil Society Engagement. Nairobi. Citizen-Government Dialoguing: Evaluating Policies for Poverty Reduction, 87.

Altmann, J. (1974). Observational study of behavior: sampling methods. In *Behaviour*, *49*(3), 227-266.

Auya, S., & Oino, P. (2013). The Role of Constituency Development Fund in Rural Development: Experiences from North Mugirango Constituency, Kenya. International Journal of Science and Research, 2(6), 306-312.

Bagaka, O. (2008). Fiscal decentralization in Kenya and the growth of government: The Constituency development fund. Northern Illinois University: De-Kalb Illinois

Barratt, M. J., Ferris, J. A., & Lenton, S. (2015). Hidden populations, online purposive sampling, and external validity: Taking off the blindfold. Field Methods, 27(1), 3-21.

Baskin, M., Haibo, L., Samrat, B., & Ryan, A. (2010). Constituency Development Funds (CDFs) as a Tool of Decentralized Development. Centre for International Development. Brookings Papers on Economic Activity, Vol. 1993, No. 2. (1993), pp. 285-339

Berdegue, J. A. and Escobar, G. (2002), Rural Diversity, Agricultural Innovation Policies and Poverty Reduction. London: ODI Agricultural Research and Extension Network (AgREN), Network Paper No.122

Blank, R. M., Card, D., Levy, F., & Medoff, J. L. (1993). Poverty, income distribution, and growth: *Are they still connected*? Brookings Papers on Economic Activity, 1993(2), 285-339.Sargeant, M. (2012). *Sampling hard to reach populations*. *Journal of advanced nursing*, *26*(4), 790-797.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. In: *Sociological methods & research*, *10*(2), 141-163.

Burns, N., & Grove, S. (2001). The practice of nursing research: conduct, critique and utilization. Philadelphia, Pennsylvania: W.B. Saunders

Chambers, R., & Conway, G. (1992). Sustainable rural livelihoods: practical concepts for the 21st century. Institute of Development Studies (UK).

Constituency Development Board Website: Constituencies Allocations for Financial Years 2003 – 2016. Retrieved from: http://www.cdf.go.ke/downloads/summary/7-allocation-reports/10-allocations-upto-2011-2016-financial-year

Cooper, D. R., Schindler, P. S., & Sun, J. (2006). *Business research methods* (Vol. 9). New York: McGraw-Hill Irwin.

Creswell, J. (2009). Research Design: *Qualitative, Quantitative, and Mixed Methods Approaches (3rd Ed.).* Thousand Oaks, CA: Sage Publications.

DFID, (2005). Growth and Poverty Reduction: The Role of Agriculture. A DFID Policy Paper, Department for International Development. United Kingdom.

ERT Country Report Series 1, (2016). In the Spirit of Harambee, Addressing Discrimination and Inequality in Kenya. ERT Country Report Series 1. London.

FAO, (2008). The Right to Food and Access to Natural Resources. Communication Division, Rome, Italy.

Frankfort-Nachmias, C., & Nachmias, D. (2008). Research designs: Cross-sectional and quasi-experimental designs. *Research methods in the social sciences. 7th ed. New York: Worth*, 184-216.

Gamba, P., & Mghenyi, E. (2004). Rural Poverty Dynamics. Agricultural Productivity and Access to.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction*. Longman Publishing.

Gallup, J. L., Radelet, S., & Warner, A. (1998). Economic Growth and the Income of the Poor. Manuscript, Harvard Institute for International Development.

GOK (2008). The CDF Board and National Anti-Corruption Steering Committee. Enhancing Integrity in Kenya.June 2008, Nairobi, Kenya.

Government of Kenya (2008). National Development Plan 2002-2008, Government Printer

Government of Kenya, (2007). Central Bureau of Statistics: Ministry of Planning and National Development, Kenya Integrated Household Budget Survey (2005/06). Basic Report.

Government of Kenya, (2007). National Devolved Funds Report: Institutional Structures and Procedures. Centre for governance and development. Nairobi, Kenya. Research Report

Humphrey, R. (2008). Politics, Clientelism and Local Development: The role of the Member of Parliament in Choice and Selected CDF Projects in South Imenti Constituency, Meru County.

Hussain, I. and Hanjra, A.M. (2004). Irrigation and Poverty Alleviation: Review of the Empirical Evidence. International Water Management Institute, Colombo, Sri Lanka.

Ingrid Robeyns, (2005). The Capability Approach: A Theoretical Survey; *in Journal of Human Development*. London W1T 3JH, Routledge.

Institute of Economic affairs (IEA-Kenya), (2006). Kenyans' Verdict: A Citizens Report Card on the Constituencies Development Fund (CDF). Institute of Economic Affairs, Nairobi, Kenya.

Institute of Economic Affairs Kenya National Commission on Human Rights, (2006). Kenya's Verdict: A Citizens Report Card on the Constituencies Development Fund (CDF).

Institute of Economic Affairs, (2011). National Council of Churches of Kenya and Diakonia – Sweden.

Kate S. & Mary K.G., 2011). Agricultural Productivity and Poverty Reduction: Linkages and Pathways. In: *The Evans School Review*, Vol. 1, Num. 1.

Kimenyi, Mwangi S., (2005). Efficiency and Efficacy of Kenya's Constituency Development Fund: Theory and Evidence. Economics Working Papers. 200542

Krantz, L. (2001). The sustainable livelihood approach to poverty reduction. SIDA. Division for Policy and Socio-Economic Analysis.

Kimani, F., Nekesa, P., & Ndungu, B. (2009). Best practices in constituency development fund (CDF). *A paper prepared for the collaborative centre for Gende and*

Development and International Development Research. Available: www. ccentregd. org. Accessed, *23*(08), 2012.

Kimani, F. Nekesa, P & Ndungu, B. (2009). Best Practices in Constituency Development Fund (CDF). Nairobi: International Development Centre

Kimenyi, and Mwangi, S. (2005). Efficiency and Efficacy of Kenya's Constituency Development Fund: Theory and Evidence. University of Connecticut, Department of Economics.Working Paper 2005-42.

Kirubi, C. (2006). How Important is Modern Energy for Micro-Enterprises? Evidence from Rural Kenya. University of California, USA. Berkeley.

Kitur, N. (2015). *Factors influencing sustainability of water resource projects by women in Sotik sub-county, Bomet county, Kenya* (Doctoral dissertation, Doctoral dissertation, University of Nairobi).

Kothari, C. (2004). *Research Methodology, methods and techniques*. New Delhi: New Age international publishers.

Krantz, L. (2001). *The sustainable livelihood approach to poverty reduction*. *SIDA. Division for Policy and Socio-Economic Analysis*.

Lavrakas, P. J. (2008). Encyclopedia of survey research methods. Sage Publications.

Lobell, D. B., Burke, M. B., Tebaldi, C., Mastrandrea, M. D., Falcon, W. P., & Naylor, R. L. (2008). Prioritizing climate change adaptation needs for food security in 2030. Science, 319(5863), 607-610.

Manor, J. (2011) Perspectives on Decentralization. Working Paper No. 3. Sweden: Swedish International Centre for Local Democracy.

Mehmet, O. (2002). *Westernizing the Third World: the Eurocentricity of economic development theories*. Routledge.

Miroro, O. (2009). Giving Voice to the Chronologically Poor: A Study of People Participation in Projects Supported under the CDF in Ibeno, Nyaribari Chache Constituency, Kisii District.

Misuraca, G. (2007). e-Governance in Africa, From Theory to Action: A Handbook on I CTs for Local Governance. International Development Research Centre (IDRC), Africa World Press.

Mugenda, D. M., & Mugenda, A. (2003). *Research Methods; Quantitative and Qualitative Research.* Nairobi acts press

Muyanga, M. (2008, January). Household Vulnerability to Transient and Chronic Poverty: Evidence from Rural Kenya. In *Ninth Annual Conference of Global Development Network (GDN)*(pp. 29-31).

NACCSC, (2008). The Constituency Development Fund: *An Examination of Legal, Structural Management and Corruption Issues in Kenya.*

National Anti-Corruption Campaign Steering Committee. (2008). The Constituency Development Fund: *An Examination of Legal, Structural, Management and Corruption Issues in Kenya.*

Ng'ethe, N. (1979). Harambee and development participation in Kenya (Doctoral dissertation, Carleton University).

Ondieki, G. M. (2010). Influence of constituency development supported projects on selected indicators of poverty reduction in Kitutu Masaba Constituency, Kenya (Ph.D. Thesis, University of Nairobi, Kenya).

Ondieki, M. G. (2008). Influence of Constituency Development funded projects in selected indicators of poverty reduction in Kitutu Masaba Constituency. Unpublished MA project. University of Nairobi.

Omiti, John, and Patrick Irungu. "Institutional and policy issues relevant to pastoral development in Kenya." (2002).

Oyuke, A. (2007). Local Level Funding as a Poverty Exit Route. Experiences from Local Level Jurisdictions in Kenya*:* University of Nairobi.

Parker, A. (1995) Decentralization: The Way forward for Rural Development? Policy Research Working Paper No. 1475. Washington, D.C.: The World Bank.

Payne, G. & Payne, J. (2004). Sage key Concepts: Key concepts in social research London, : SAGE Publications Ltd doi: 10.4135/9781849209397

Peters, D. (1998). Setting Post-harvest Strategies for Food Security and Income Generation in Soroti, Uganda.

Polit, D., & Hungler, B. (1997). Essentials of nursing research: methods, appraisal, and utilization. Philadelphia, Pennsylvania: J. B. Lippincott Company

Republic of Kenya. (2008). Samburu East District District Development Plan 2008-2012. Government Printer, Nairobi.

Republic of Kenya. (2008). Samburu East District District Development Plan 2008-2012. Government Printer, Nairobi.

Republic of Kenya. (2007). Health sector report: Mid-term expenditure framework 2007/08-2009/10. Ministry of Health, Nairobi, Kenya.

Republic of Kenya. 2004. Strategy to Revitalize Agriculture. Ministry of Agriculture and Ministry of Livestock and Fisheries Development. Government Printer, Nairobi

Rondinelli, D.A., Nellis, J. R. (1986) Assessing Decentralization Policies in Developing Countries: The Case for Cautious Optimism. Development Policy and Review, 4(1), pp.3- 23.

Schneider, K., & Gugerty, M. K. (2011). Agricultural productivity and poverty reduction: Linkages and pathways. Libraries Test Journal, 1(1), 56-74.

Stuart N. Hart, (2011). Children's Rights in Education: Jessica Kingsleys Publishers. London, UK.

Suri, T., Tschirley, D., Irungu, C., Gitau, R., & Kariuki, D. (2009). Rural incomes, inequality and poverty dynamics in Kenya. Egerton University. Tegemeo institute of agricultural policy and development.

Thirtle, C., Lin, L., & Piesse, J. (2003). The impact of research-led agricultural productivity growth on poverty reduction in Africa, Asia and Latin America. World Development, 31(12), 1959-1975.

UNDP, (2011). The United Nations Development Programme 2011 Human Development Report, Nairobi.

UNDP, Human Development Report, 1990 and 1997.

UNESCO, (2016) United Nations World Water Development Report 4, UN-Water, World Water Assessment Programme (WWAP).

United Nations Development Programme (UNDP) and UNDP Water Governance Facility (WGF), (2007). Improving Water Governance in Kenya through the Human Rights-

Based Approach, Nairobi. A Mapping and Baseline Report. (2012), 'Issue Series No 3 Gender and Water', Stockholm, UNDP Water Governance Facility at SIWI.

Vizard, P. (2006). Poverty and human rights: Sen's' capability perspective'explored. Oxford University Press.

Wamae D. N. (2009). An evaluation of the contribution of implementation of CDF projects in Employment Creation in Kenya. The case of Abothuguchi Central Division, Meru Central District. Unpublished MA project. University of Nairobi.

Wiggins, S., Kirsten, J., & Llambí, L. (2010). The future of small farms. World development, 38(10), 1341-1348.

Worldbank. (2004). Towards a Water-Secure Kenya: Water Resources Sector Memorandum.

World Bank. (2008). World development report 2008: agriculture for development. World Development Report; no. 30. Washington, DC: World Bank Group.

World Bank, (2011). A bumpy ride to prosperity: Infrastructure for shared growth in Kenya. Washington DC: Poverty Reduction and Economic Management Unit, Africa Region.

APPENDIX I: RESEARCH QUESTIONNAIRE

My Name is Naomi Mutiso-Kyalo, registration frequency C50/P/9221/05, a student at the University of Nairobi, undertaking a Master of Arts Degree in Rural Sociology and Community Development. I would like you to know that the answers to this questionnaire are purely for academic purposes and will be treated with confidentiality. I therefore request you to answer the questions to the best of your knowledge and thank you in advance for your time.

Name of Respondent: ……

Telephone……..

Date………...……

SECTION A: CHARACTERISTICS OF THE RESPONDENTS

1. **(i) Gender**

   Male [ ] Female[ ]

   (ii) Age

   a) Below 29 [ ]
   b) 30-39 [ ]
   c) 40-49 [ ]
   d) 50-59 [ ]
   e) 60 and above [ ]

   (iii) Marital status

   a) Single [ ]
   b) Married [ ]
   c) Divorced/Separated [ ]
   d) Widowed [ ]

   (iv) How many children do you have?

   a) ≤ 3 [ ]
   b) 4-5 [ ]

c) ≥6 [ ]

(v) Do you have other dependents?

Yes [ ] No [ ]

If yes, how many?

a) ≤2
b) 3-4
c) 4-5
d) ≥6

(v) What is your highest Level of Education?

a) None [ ]
b) Primary School [ ]
c) Secondary School [ ]
d) Diploma/University [ ]

(vi) What is your occupation?

a) Farmer/housewife [ ]
b) Self-employed (e.g. Business) Specify type……...…….
c) Wage employment (e.g. Teacher, Chief,etc) Specify type……

(vii) What is the main source of your livelihood?

a) Crop farming [ ]
b) Livestock farming [ ]
c) Self-employed [ ]
d) Wage employment [ ]
e) Others? Specify (e.g. charcoal burning) ……...

SECTION B: ACCESS TO CDF-WATER SUPPORTED PROJECTS

2. i) Are you aware of CDF-water supported projects in Ikombe Ward?

Yes [ ] No [ ]

If yes, complete the table below for one to three of the projects approximately.

No.	**Name of CDF supported project nearest to your homestead**	**Type of project eg. Shallow well**	**Distance from your homestead(km)**	**Time taken to be served with water (minutes)**
1.				
2.				
3.				

If yes, how many?

a) One……

b) Two……

c) More than three……

ii) What is the name of the CDF water project that is nearest to your homestead?

a) Name……

b) Type of CDF water project?

……

……

iii) How far is the project in kilometers?

……

……

iv) Which year was it started/improved by CDF?

……

……

v) Approximately how much time do you/other members of your household take to travel from your homestead to the CDF water project?

……

……

vi) How long do you wait to be served (minutes)

……

……

vii) Is the water source reliable (e.g. water flows all the time)?

……

……

If no, approximately how long do you go without water?

a) ……

……

b) Less than a day

c) A day

d) Two days

e) More than three days

3. (i) Do you use water from these CDF projects?

Yes [ ] No [ ]

ii) If yes, Tick the various ways you use the water.

a) Irrigation [ ]

b) Domestic use [ ]

c) Selling [ ]

d) Livestock (watering Cows, Goats, Sheep, Donkeys, Fish, Poultry, Rabbits) [ ]

SECTION C: AFFORDABILITY OF WATER FROM THE CDF PROJECTS

4. Do you pay for water from the above CDF-supported water projects?

Yes [ ] No [ ]

If yes, approximately how much (kshs) were you paying; before start/improvement of the

project?.....Currently?.....……

……

SECTION D: CDF WATER AND FOOD SECURITY

5. What is the size of your farm in acres? [ ]

Please indicate in the table below the type of crops you are irrigating.

No.	**Type of crop**	**Before CDF supported water**	**After CDF supported water**

1.			
2.			
3.			

6. Has there been an increase in your crop production following introduction/improvement of CDF supported water projects?
   a. Yes [ ] No [ ]

   If no, is the food produced sufficient to take your family to next harvest? [ ]

   If no, how does your household obtain food to the next harvest?

   (a) Buying from the market
   (b) Gifts
   (c) Relief food e.g. Operation Mwolyo Out (OMO)
   (d) Other (Pension, support from working children, etc.)
   (e) Went without food.

   Approximately how many months in a year does the food produced by your house hold take?

   i) Less than 3 months
   ii) 4-5 months
   iii) 6-8 months
   iv) More than 9 months

7. (i) Indicate the frequency s of your livestock before and after the introduction of the CDF water supported projects.

Type of livestock	**Before CDF Indigenous**	**Before CDF Improved**	**After CDF Indigenous**	**After CDF Improved**
Cattle				
Goats and Sheep				
Donkeys				

Poultry				
Fish ponds				
Bee hives				
Rabbit				

(ii) How many livestock did you sell last year?

Type of Livestock	**Indigenous frequency s sold**	**Improved frequency s sold**
Cattle		
Goats and Sheep		
Donkeys		
Poultry		
Fish		
Honey		
Rabbits		

SECTION E: CDF WATER AND INCOME-GENERATION

8. i) What were your main sources of income?

   Source……. Before CDF…….

   After CDF……...

   (ii) Approximately how much income do you get from those sources per month?

   [ ]

SECTION F: CDF WATER AND EMPLOYMENT

9. a) Have you or any of your household members been employed in CDF water supported projects? Yes [ ] No [ ]

   a) If yes, what were you /household member employed as?

      i) Watchman/woman [ ]

ii) Casual labourer [ ]

iii) Pump attendant [ ]

iv) Manager [ ]

v) Other (specify) [ ]

b) How much money were you or a member of your household paid per month in kshs?

Amount in kshs. per month	
Below 4,999	-
5,000 – 9,999	-
10,000 – 15,999	-
16,000 – 19,999	-
Above 20,000	-

(ii) Which CDF water supported project were you or your household member employed in? ……

SECTION G: CDF WATER AND WELL-BEING

a) What is the situation of your household on the following well-being indicators?

Well-being indicator	**Before CDF supported water (Tick)**	**After CDF supported water (Tick)**
Diet in your household: Poor Average Improved	 …… …… ……	 …… …… ……..
Availability of water for your household: Reliable Unreliable	 …… …… ……	 …… …… ……..

Affordability of water for your household: Very affordable Affordable Expensive	…… …… ……	…… …… ……..
Quality of Water for your household: Very clean... Not so clean. Salty/Muddy	…… …… ……	…… …… ……..
Accessibility of water for your household: Very accessible Accessible….. Inaccessible….	…… …… ……	…… …… ……..
Amount of water for your household: Sufficient… Insufficient.	…… …… ……	…… …… ……..
Level of income of your household: Sufficient… Insufficient...	…… …… ……	…… …… ……..
Water borne diseases (e.g. diarrhoea): Prevalent…. Inprevalent	…… …… ……	…… …… ……..
Jobs creation: No job opportunities There are job opportunities	…… …… ……	…… …… ……..
Availability of food for your household:	……	……

Sufficient… Insufficient.	…… ……	…… ……..
Comment on overall life of your household		

APPENDIX II: KEY INFORMANT INTERVIEW GUIDE

My Name is Naomi Mutiso-Kyalo, registration frequency C50/P/9221/05, a student at the University of Nairobi, undertaking a Master of Arts Degree in Rural Sociology and Community Development. I would like you to know that the answers to this questionnaire are purely for academic purposes and will be treated with confidentiality. I therefore request you to answer the questions to the best of your knowledge and thank you in advance for your time.

Name of Respondent: ……...

Telephone ……...

Date……...…….

BRIEFLY COMMENT ON THE FOLLOWING:

1. Which are the names of the CDF water supported projects in Ikombe Ward.
   ……
   ……
   ……

2. Accessibility of households to the CDF water Projects.

   .....
   .....
   .....
   .....

3. Affordability of water to household from the CDF water projects.
   ……
   ……
   ……
   ……
4. Level of Income of the households.
   ……
   ……
   ……

5. Level of food self-sufficiency.

……

……

……

……

6. CDF water contribution to:

a) Crop farming:

……

……

……

b) Livestock:

.....

.....

.....

Domestic use:

……

……

c) Food security:

……

……

d) Employment:

……

……

e) Income generation:

……

……

……

7. Any other comments:

……

……

……

APPENDIX III: CDF SUPPORTED WATER PROJECTS IN IKOMBE

No.	Name of CDF water supported project	Year it was started	Funding Amount per annum in ksh
1.	Kakuyuni Earth Dam	2003-2004	1,300,000
2.	Mwambathaana Top-up Drilling	2003-2004	150,000
3.	Yatta South Women's Group Water Project (combined Kyua, Katangi and Ikombe Sub-locations) (Digging of shallow wells)	2003-2004	246,580
4.	Ikombe Secondary School Borehole Drilling and equiping	2005-2006	844,000
5.	Kitheuni Secondary School Water Project (Piping work)	2005-2006	126,730
6.	Kithito Borehole (Drilling and equipping)	2005-2006	2,400,000
7.	Mathingau Bridge Construction	2007-2008	1,000,000
8.	Manyenyoni Earth Dam (Construction of Dam)	2007-2008	400.000
9.	Kilaatu Primary School Water project (Rehabilitation)	2007-2008	160,000
10.	Ting'ang'a Borehole Drilling	2006-2007	855,000
11.	Ngangani Primary School Borehole Drilling	2006-2007	850,000
12.	Ndalasyani Borehole (Water distribution)	2006-2007	850,000
13.	Naivasa Borehole (Top-up drilling)	2006-2007	850,000
14.	Ikombe Secondary School Borehole (Drilling and Equipig)	2006-2007	1,200,000
15.	Naivasa Borehole (Top –up Drilling)	2007-2008	300,000
16.	St. John's Kalyambeu Borehole Drilling	2007-2008	950,000
17.	Mwambathaana Water Project (Top-	2008-2009	450,000

	up Drilling)		
18.	Naivasa Borehole (Top-up Drilling)	2008-2009	214,000
19.	Ndalasyani Bore Hole Water Distribution	2008-2009	386,000
20.	Kithito Bore Hole Drilling	2009-2010	900,000
21.	Kasooni Primary School Borehole drilling	2010-2011	1,500,000
22.	Kithito Borehole Piping	2010-2011	300,325
23.	Mwambathaana Borehole Distribution of Water	2010-2011	1,000,000
24.	Ndalasyani Borehole Water Distribution	2010-2011	1,800.000
25.	St. Johns Kalyambeu Youth Polytechnic Borehole	2010-2011	1,739,409
26.	Kasooni Borehole Equiping	2011-2012	1,600,000
27.	Naivasa Borehole Power Installation and repair of water pumps	2013-2014	200,000
28.	Ngengi Water Borehole	2014-2015	2,200,000
29.	Kitololo Primary School Borehole	2014-2015	1,400,000
30.	Kithito Borehole	2012-2013	1,600,000