

**GOVERNMENTAL ORGANIZATION WATER PROJECTS AND SOCIAL
DEVELOPMENT IN RULINDO DISTRICT, RWANDA**

BY

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DECLARATION

I, Iyamuduhaye Alice, do declare that the work presented in this research report was personally done by me under the supervision of Dr. Charles Kiiza and that it has never been presented to any Institution for any academic award.

.....IYAMUDUHAYE.....ALICE.....06th.....01.....2018.....

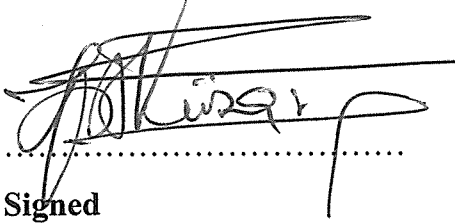
Signed



Date

APPROVAL

This research report was carried out by the candidate under my guidance as the University supervisor. It is ready for progress report hearing before the University research Defense Committee.

A handwritten signature in black ink, appearing to read 'Dr. Kiiza', is written over a horizontal dotted line.

Signed

Dr. Charles Kiiza

06 / 11 / 2018

Date

DEDICATION

I dedicate this thesis report to my lovely husband Mr. Sinabubariraga Idephonse and our two children.

ACKNOWLEDGEMENT

The successful completion of this dissertation was enabled by valuable contributions from various people.

First and foremost, I am grateful to the Almighty God for His blessings and protection from the beginning to the ending of this study programme.

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LISTS OF ABBREVIATIONS AND ACRONYMS

AFDB	African Development Bank
AWV	African Water Vision
CATs	Community Approach to Total Sanitation
DF	Damaging Fluctuations
DWS	Drinking Water Supply
EDPRS	Economic Development and Poverty Reduction Strategy
FGD	Focus Group Discussion
IBM	International Business Machine
JMP	Joint Monitoring Program
MININFRA	Ministry of Infrastructures
MDG	Millennium Development Goal
NRIS	National Research institute of Research
OECD	Organization for Economic Co-operation and Development
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Sciences
TOC	Theory of Constraints (TOC)
UNECLAC	United National Commission for Latin America and Caribbean
UNDESA	United Nations Department of Economic and Social Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization
WSS	Water Supply and Sanitation

TABLE OF CONTENTS

DECLARATION	ii
APPROVAL	iii
DEDICATION	iv
ACKNOWLEDGEMENT	v
LISTS OF ABBREVIATIONS AND ACRONYMS	vi
LIST OF FIGURE.....	x
ABSTRACT.....	xi
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.1.1 Historical Perspective	1
1.1.2 Theoretical Perspective.....	3
1.1.3 Conceptual Perspective.....	4
1.1.4 Contextual Perspective.....	5
1.2 Problem Statement.....	5
1.3 Purpose of the Study	6
1.4 Objectives of the Study	6
1.5 Research Questions.....	7
1.7 Scope of the Study	7
1.7.1 Geographical Scope	7
1.7.2 Theoretical Scope.....	7
1.7.3 Content Scope	7
1.7.4 Time Scope	7
1.8 Significance of the Study	8
1.9 Operational Definitions of Key Terms.....	8
CHAPTER TWO	10
LITERATURE REVIEW	10
2.0 Introduction.....	10
2.1 Theoretical Framework.....	10
2.2 Conceptual Framework.....	11
2.3 Related Studies.....	12
2.3.1 Non-government water projects.....	12
2.3.1.1 Safe Drinking Water Facilities.....	15
2.3.1.2 Sanitation Facilities.....	16

2.3.2 Social Development	17
2.3.2.1 Reduced Vulnerability	18
2.3.2.2 Social Inclusion.....	21
2.3.2.3 Improved Wellbeing	23
2.3.3 Empirical Studies	25
2.4 Gaps in the Reviewed Literature.....	26
CHAPTER THREE	27
METHODOLOGY	27
3.0 Introduction.....	27
3.1 Research Design.....	27
3.2 Study Population.....	27
3.3 Sample Size.....	27
3.4 Sampling Technique	29
3.5 Data Source.....	29
3.6 Research Instruments (Data Collection Tools)	29
3.6.1 Focus Group Discussions.....	29
3.6.3Documentary Review.....	30
3.7 Validity and Reliability	31
3.7.1 Validity	31
3.7.2 Reliability.....	31
3.8 Data Collection Procedure	31
3.9 Data Presentation	32
3.10 Data Analysis	32
3.11 Ethical Considerations	32
CHAPTER FOUR.....	34
DATA PRESENTATION, ANALYSIS AND INTERPRETATION	34
4.0 Introduction.....	34
4.1 Response Rate.....	34
4.2 Demographic Characteristics of the Respondents.....	35
4.3 How Water for People Projects have Provided Safe Drinking Water and Improved Sanitation Facilities for the People of Rulindo District	37
4.4 The Social Development of the People of Rulindo District As a Result of Water For People Projects.....	45
4.5 The Challenges Encountered During the Implementation of Water For People Projects in Rulindo District	50
CHAPTER FIVE	52

DISCUSSION OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	52
5.0 Introduction.....	52
5.1 Discussions	52
5.1.1 How Water for People Projects have Provided Safe Drinking Water and Improved Sanitation Facilities for the People of Rulindo District	52
5.1.2 The Social Development of the People of Rulindo District As a Result of Water For People Projects.....	54
5.1.3 The Challenges Encountered During the Implementation of Water For People Projects in Rulindo District.....	55
5.2 Conclusion	55
5.3 Recommendations.....	56
5.4 Contribution to Knowledge.....	57
REFERNCES	58
APPENDICES	66
APPENDIX I: FOCUS GROUP DISCUSSION QUESTIONS	66
APPENDIX II: INTERVIEW GUIDE QUESTIONS	68

LIST OF FIGURE

Figure 2.1: Conceptual Frame Work	12
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ABSTRACT

The purpose of the study was an investigation of the effect of water projects provided by Non- governmental organizations on the social development of the people of Rulindo District in Rwanda. According to the Rwanda Ministry of Health, Rulindo District was singled out as one of the districts most affected by problems related to lack of water and sanitation. The study was guided by the following objectives: i) to analyze how Water for People Projects have provided safe drinking water and improved sanitation facilities for the people of Rulindo district; ii) to assess the social development status of the people of Rulindo district as a result of water for people projects; and iii) to analyze the challenges encountered during the implementation of water for people projects in Rulindo District. This study adopted a descriptive cross-sectional survey design. The study population was 64,956 beneficiaries of the Water for People Project. The sample size was 398 respondents and 315 respondents participated in the research. Data collection was done through interviews and focus group discussion. The results indicated that through Water for People projects, the people of Rulindo are able to access safe and clean drinking water and improved sanitation facilities. Furthermore, the study found out that the social life of the people of Rulindo district are susceptible to vulnerability to the high poverty level which is attributed to low level of education and lack of formal employment. Lastly, the study found out that the challenges faced by the Water for People project was political interference, lack of adequate funding and project sustainability capacity. The study concluded that Water for People project is relevant in improving the social life of the people by providing accessible and affordable water system which will improve their wellbeing. The study made the following recommendations: the need to train more households on water storage and sanitation handling, and the use of technology to increase coverage with water and sanitation facilities.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Historical Perspective

In 1990, global coverage of the use of clean water and hygienic facilities stood at 76% and 54%, with respect to the Millennium Development Goals (MDG) targets of 88% and 77% by 2015 (WHO/UNICEF, 2015). Globally, 2.6 billion people have gained access to an improved drinking water source since 1990. In most regions, over one third of the populations gained access to clean water since 1990 was registered by the majority of the populations. Developing regions with low baselines and those experiencing rapid population growths have had to work much harder to maintain and extend coverage. Although sub-Saharan Africa missed the MDG target, over 40% of the current population has gained access since 1990 (WHO/UNICEF, 2015). In 2015, it was estimated that 663 million people worldwide still use unimproved drinking water sources, including unprotected wells and springs and surface water. Nearly half of all people using unimproved drinking water sources live in sub-Saharan Africa, while one fifth live in Southern Asia. Furthermore, use of clean water and hygienic facilities has increased in all regions of the world since 1990, but rates of progress have varied during the MDG period. Coverage in Eastern Asia increased dramatically – by 27 percentage points – and exceeded the MDG target, with over half a billion people gaining access in China alone. Access in Southern Asia and South-eastern Asia also rose steeply, by 20 and 19 per cent respectively, and these regions also met the MDG target (WHO/UNICEF, 2015).

Sub-Saharan Africa fell short of the MDG target but still achieved a 20 percentage point increase in the use of improved sources of drinking water (WHO/UNICEF, 2015). This means 427 million people gained access during the MDG period – an average of 47,000 people per day for 25 years. Furthermore, the African continent has a high population growth rate of 2.6% but rates of access to potable water and sanitation are the lowest in the world (African Development Fund, 2013). Indeed, only 62% of its population has safe drinking water compared with 82% at the global level. However, in the rural areas, where over 60% of the African population lives, the deficit is much worse, with only 34% of the population

having access to drinking water as against 71% at the global level. Paradoxically, the financing of drinking water supply (DWS) has hitherto been mainly directed towards urban centers to the detriment of the rural areas. At the African Development Bank Group (AfDB), for example, nearly 80% of investments in the drinking water sector have been in urban areas. There is also a lack of adequate sanitation services. (African Development Fund, 2013).

It is against this background that the AfDB launched an Initiative to accelerate access by rural communities of the African continent to drinking water and sanitation and thereby contribute to achieving the MDGs and the African Water Vision (AWV). A working document on the concept of the Initiative was produced at the beginning of 2003 and various international bodies have adhered to it, notably the International Panel on the Financing of DWS infrastructure, the G8 and the Conference of African Ministers in charge of Water.

Rwanda's water supply and sanitation (WSS) sector has experienced dramatic improvements in service, sustainability, and coverage since sector reforms began in 2000. Because of this, a National Water and Sanitation Policy was adopted in 2004 (Rwanda MININFRA, 2010) and a Water Supply and Sanitation Sub-Sector Strategic Plan was also developed to detail actions for meeting targets outlined in the Economic Development and Poverty Reduction Strategy (EDPRS) 2008-2012 and the MDGs by 2015. The Government sought to increase the rate of access to drinking water to 85% by 2015, and 100% by 2020. Goals for sanitation access were just as bold, with a 2015 target of 65 % and universal access by 2020. The estimated cost of achieving these 2020 targets was US\$ 820 million (EEDPRS), 2006).

In Rwanda, social development is targeted at guaranteeing access to quality health care and contributing to the well-being of families (Ruberangeyo et al. 2015). Furthermore, the National Social Protection Policy (NSPP) of Rwanda is as well oriented towards reducing vulnerability in general and the vulnerability of the poor and marginalized people in particular and towards promoting sustainable economic and social development centered on good social-risk management and good coordination of savings actions and the protection of vulnerable groups (National Social Protection Policy, 2005).

According to UNECA (1995), Africa's steady growth and positive socioeconomic indicators are yet to translate into benefits and opportunities for all men and women on the continent. Persistent inequality, poverty and inequality in access to social services particularly for youth, the aged, persons with disabilities and women, are creating deficits in human development, and slowing progress towards achieving development and democracy goals. Member states must develop and implement progressive social policies and practices to address this challenge.

Globally, social development focuses on the need to put people first in development processes. Social development is only about increasing people income but also empowering them to be independent and resist any form of exploitation such as corruption and physical harassment. The collaboration of NGOs, governments, civil society, and private sector promotes social development. Translation of research findings to social development actions influence increase to solutions for a quality life. Rulindo District is considered to be rural and has none of the urban water distribution systems found in larger cities, which are owned and operated by the national utility agency known as WASAC (Water and Sanitation Corporation). In contrast, the rural water systems are owned by Rulindo district government and are generally less complex, have simpler technology, and were built relatively recently. Residents of Rulindo district currently obtain water from a variety of sources, including unimproved springs, streams, swamps, ponds, "no tariff" improved, "tariff" improved water points (Rulindo District, 2013). Social development in Rulindo district is ensured via different programs such as Vision 2020, Umurenge Program (VUP), Girinka Program, mutual health insurance, and the work of different NGOs, such as Water For People Projects.

1.1.2 Theoretical Perspective

This study adopted the Theory of Social Development developed by Garry and Asokan (1999). This theory of social development states that society is a complex organism in which multiple systems and sub-systems work together to maintain the health of the community and support growth and development. Society consists of two interrelated aspects, that is, learning and application. Society discovers better ways to fulfill its aspirations and it develops organizational mechanisms to express that knowledge to achieve its social and

economic goals. The process of discovery expands human consciousness. The process of application enhances social organization. It is argued that society develops in response to the contact and interaction between human beings and their material, social and intellectual environment. The incursion of external threats, the pressure of physical and social conditions, the mysteries of physical nature and complexities of human behavior prompt humans to experiment, create and innovate. The experience resulting from these contacts leads to learning on three different levels of our existence, the physical, social and mental levels. At the physical level it enhances our control over material processes. At the social level, it enhances our capacity for effective interaction between people at greater and greater speeds. At mental level, it enhances our knowledge.

The social development theory has been adopted in this study because it provides a conceptual framework for discovering the underlying principles common to the development process in water for people projects in Rulindo District. It provides the framework for understanding the relationship between the accumulated knowledge generated by water and sanitation practices which later culminate into reduced vulnerability, social inclusion and improved wellbeing.

1.1.3 Conceptual Perspective

Non-Government Organizations (NGO) refers to a non-profit, voluntary citizens' group which is organized on a local, national or international level (Akpan, 2010). According to Steffeck and Hahn (2010), an NGO is a non-profit organization that is independent of governments and international governmental organizations.

Water for People Project is an NGO project works to provide access to safe drinking water and improved sanitation for the poor and vulnerable population so as to improve social service delivery and hygiene education.

Social development is fundamentally concerned with human rights, formal and informal power relations, inequality and possibilities for building greater equality among individuals and groups within societies. In addition, Morris (2010) defines social development as the bundle of technological, subsistence, organizational, and cultural accomplishments through

which people feed, clothe, house, and reproduce , explain the world around them, resolve disputes within their communities, extend their power at the expense of other communities, and defend themselves against others' attempts to extend power. Furthermore, Midgley (1995) defines social development as a process of planned social change designed to promote the well-being of the population as a whole in conjunction with a dynamic process of economic development. According to Bilance (1997), social development is the promotion of a sustainable society that is worthy of human dignity by empowering marginalized groups, women and men, to undertake their own development, to improve their social and economic position and to acquire their rightful place in society. In this study, social development was operationalized as reduced vulnerability, social inclusion and improved wellbeing.

1.1.4 Contextual Perspective

Water For People started its water projects in Rwanda in 2008. Since then, it has worked with various partners to provide sustainable drinking water, sanitation facilities and hygiene education to communities and public institutions (such as schools and health facilities) in the district of Rulindo through 'Everyone Forever'; a unique programmatic effort to provide water and sanitation services to everyone in Rulindo district (Sano, 2013). This means that when the goal of Water for People is met, the water and sanitation challenges in the district will have been greatly addressed.

Furthermore, a report by Water for People (2016) revealed that community water service has increased by 20 percent points to 49% in Rulindo district as a result of the various water projects. By the end of 2016, nearly 118, 000 communities were beneficiaries of these water projects because of 114 connections at 68% of the public institution water systems.

1.2 Problem Statement

There is low access to safe and clean water and improved sanitation facilities in Rulindo district. Only few people have running water in their homes. Some families can access water through community water points, where they are charged a nominal user fee for the water, according to either container size or monthly consumption. Whereas clean tap water can be found in homes and community facilities at a fee, Some families are unable to pay so they use local streams and

ponds which are risk of water infection diseases. The burden of looking for water is basically on female part of the population (REDA, 2014)". These impacts on the social development of the people in terms of increased vulnerability to water borne diseases, reduced social inclusion such as access to education, and poor wellbeing. For instance, Children are the most affected by the unhygienic water and environment (REDA, 2014).

According to the Ministry of Health Report (2015), Rulindo was singled out as one of the districts most affected by diarrhea among children under 5 years. Several NGOs over the years delved into the development progress in access to clean water and hygienic services such as use of soap after visiting toilets. Other NGOs had initiatives to improve health, through the promotion of hand washing with soap, to decrease prevalence and incidence of water-borne diseases. However, over 56% of the people of Rulindo district are believed not to have access to safe drinking water and improved sanitation facilities (Rwanda National Institute of Statistics (NRIS, 2015).

It is against the above background that the study sets out to investigate the effect of Water for People Projects on social development such as reducing the vulnerability of the people, improving their wellbeing and promoting social inclusion among the people of Rulindo district.

1.3 Purpose of the Study

The purpose of the study was to investigate the effect of water projects provided by non-governmental organizations on the social development of the people of Rulindo District.

1.4 Objectives of the Study

- i. To analyze how Water for People Projects have provided safe drinking water and improved sanitation facilities for the people of Rulindo district.
- ii. To analyze the social development status of the people of Rulindo district as a result of Water For People projects.
- iii. To analyze the challenges encountered during the implementation of water for people projects in Rulindo District.

1.5 Research Questions

- i. In what ways have Water for People Projects provided safe drinking water and improved sanitation facilities for the people of Rulindo district?
- ii. What is the social development status of the people of Rulindo district as a result of Water For People project?
- iii. What are the challenges encountered during the implementation of Water for People Projects in Rulindo district?

1.7 Scope of the Study

1.7.1 Geographical Scope

This study was carried out in Rulindo district which is located in the northern province of Rwanda. The district lies roughly halfway between Kigali and Musanze. Rulindo district is divided into 17 Sectors. However, the scope of this study covered 5 Sectors, namely: Burega, Cyinzuzi, Mbogo, Ngoma, and Rusiga. These sectors were selected based on the fact that many projects have been implemented in them over the years. Therefore, it is appropriate that the said sectors are investigated to provide valuable information for the current study.

1.7.2 Theoretical Scope

This study adopted the Theory of Social Development developed by (Garry et al., 1997) (For a description of this theory, see Section 1.1.2 above).

1.7.3 Content Scope

This study focused on how Water for People Projects have provided safe drinking water and improved sanitation facilities for the people of Rulindo district; the social development of the people of Rulindo district; and the challenges faced during Water for People Projects in Rulindo district.

1.7.4 Time Scope

The study focused on a period of 7 years, that is, from March 2010 to 2018. The actual timeframe for carrying out the study was from October 2010 to February 2018. The research was done in 3 different phases: Desk research was done from June to September 2017; Field

work (Data collection) was carried out in January 2018; and finally, presentation and analysis was carried out in February 2018.

1.8 Significance of the Study

It is hoped that the findings of this study helped policy makers by providing more reliable information on the actual state of rural water and sanitation which helped them to improve decision-making and strategy implementation.

This study provided information that enabled the NGOs to be focused on quality services instead of only targeting project implementation and completion. Furthermore, the findings of this study helped the government of Rwanda to promote capacity building targeted at improving the supply of sanitation products and services, educating the local masses about good hygiene practices to reduce their vulnerabilities to preventable diseases. This study also added new contributions to the existing body of knowledge which was be relevant to future researchers who may want to research further on the same subject area.

1.9 Operational Definitions of Key Terms

NGO: refers to a non-profit organization that operates independently of any government, typically one whose purpose is to address a social or political issue.

NGO Water Projects: refers to water projects supported by nongovernmental organizations with the intent of providing safe drinking water, providing improved sanitation, and providing hygiene education.

Safe drinking water facilities: Refers to the use of piped water into dwelling, protected spring water, public tap water, or borehole.

Sanitation facilities: Refers to the use of flush toilet system, or pit latrine with slab.

Hygiene education and practices: refers to the practice of washing hands with soap after using a toilet or latrine, cooking drinking water, eating warm food, covering leftover food and serving food on dry plates etc.

Social development: is about putting people at the Centre of development. This means a commitment that development processes need to benefit people, particularly but not only the poor, but also a recognition that people, and the way they interact in groups and society, and the norms that facilitates such interaction.

Reduced vulnerability: refers to the ability to prevent or reduce the risk of communities being exposed to a shock and to mitigate its impact on people, their livelihoods, food security, and nutrition.

Social inclusion: Right to speak and vote for the leader of one's choice, participate in decision making, right to access educational services, right to access health facility, right to use and access public water source, right to access public offices, and right to justice and to be heard in the court of laws.

Improved wellbeing: refers to financial liberty, good health, access to good balanced diet, ability to have enough rest, ability to achieve goals, having a sense of purpose and having a sense of belonging.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed literature from different scholars, authors and publications in accordance with the objectives of the study. The chapter covered; theoretical review, conceptual framework, and related studies.

2.1 Theoretical Framework

The study was premised on social development theory advanced by Garry and Asokan (1999). The theory states that society is a complex organism in which multiple systems and subsystems work together to maintain the health of the community and support growth and development. Development is the result of society's capacity to organize human energies and productive resources in order to meet the challenges and opportunities that life presents society with all the times. Society passes through well-defined stages in the course of its development. They are nomadic hunting and gathering, rural agrarian, urban, commercial, industrial and post-industrial societies. Pioneers introduce new ideas, practices and habits etc which are resisted in the beginning by the conservative element in society. At a later stage the innovations are accepted, imitated, organized and made use of by other members of the community.

The process of development, even the limited sphere of social development, is not driven exclusively by material motives or confined to material achievements. The goals societies and individuals seek are determined by their needs and their values. In the hierarchy of needs, physical survival, security, and comfort are primary. Vital, social and mental needs gain prominence when the basic physical needs are met. As society prospers, the vital urge for intensity, excitement, enjoyment, adventure, changing experience and self-expression become more important determinants. Beyond these lie the mental urge for curiosity, knowledge, creativity and imagination, and the aspiration for spiritual realization.

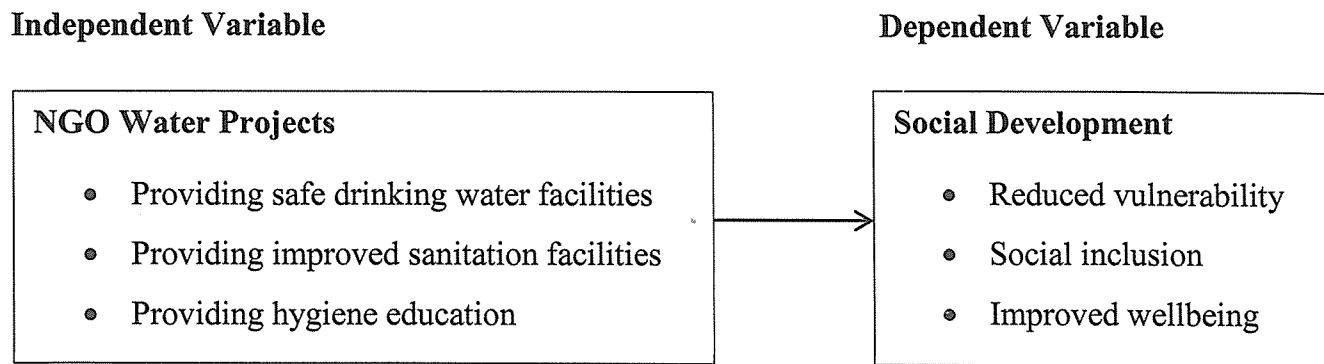
This concept of development holds very important implications for the future of humanity and the prospects for progress in the next century. It suggests that there are no inherent limits either to the speed or to the extent of the development process, other than those imposed by the limitations of our thought, knowledge and aspirations. If we change our view, the character of this process can be transformed from the slow, trial and error subconscious process we have known in the past to a swift, sure leaping progress from height to greater height (International Commission on Peace and Food, 1994).

The theory is related to the study in a way that social development has always involved a tension between two poles of its existence, collective and individual. The collective strives to ensure its preservation, perpetuation and development, preparing and compelling its individual members to abide by its traditions, laws and values, and contribute their energy and effort to defend and support the community. At the same time, individual members strive to ensure their survival, to preserve and, whenever possible, to elevate their material and social positions, personal comfort and enjoyment. Rwanda's ability to meet water needs of the people is very much linked to water and sanitation education. The locals but be trained and awareness has to be created among the people regarding issues of water, sanitation and hygiene. This is where the Water For People Projects comes in to play the role of providing safe, clean and accessible water and sanitation facilities and educating the masses about the same issue.

2.2 Conceptual Framework

Figure 2.1 below shows the diagrammatic representation of the relationship between NGO water projects and social development of the people of Rulindo district.

Figure 2.1: Conceptual Frame Work



Source: Adopted from Water for People Report (2016) & World Bank (2012)

The independent variable is nongovernmental water projects (i.e. Water for People projects) and it was measured using safe drinking water, and improved sanitation facilities. In other words, the objectives of Water for People projects is to provide safe drinking water facilities, and improved sanitation facilities, to the people of Rulindo district. On the other hand, social development which is the dependent variable was measured using reduced vulnerability, social inclusion, and improved wellbeing. Therefore, people who have access to safe drinking facilities, good sanitation facilities, are more likely to be less vulnerable to diseases, will feel socially safe and secure, and their wellbeing will mostly likely improve emotionally, psychologically, and physically.

2.3 Related Studies

2.3.1 Non-government water projects

Davis et al. (2013) explains that the development of community water supplies and sanitation results in improved social and economic conditions and improved health. The benefits of improved water supply and sanitation are many, including prevention of disease, improved basic health care, better nutrition, increased access to institutions such as health centers and schools, improved water quality, increased quantity of and access to water, reduction in time and effort required for water collection, promotion of economic activity, strengthening of community organization, improvements in housing, and ultimately, improved quality of life (Okun, 2014).

Davis et al. (2013) argues that access to water supply and sanitation is a fundamental need and a human right. It is vital for the dignity and health of all people. The health and economic benefits of water supply and sanitation to households and individuals (and especially to children) are well documented. Of special importance to the poor are the time-saving, convenience and dignity that improved water supply and sanitation represent. Those without access are the poorest and least powerful.

According to the United Nations MDG report (2011), progress has been good on increasing access to clean drinking water. The global target was surpassed, although rural areas were lagging behind and more than one in ten people still did not have full access to safe drinking water by the 2015 deadline. While some regions, such as east and south-east Asia, have already gone beyond the target, progress varies widely. Sub-Saharan Africa remains far behind: Despite having almost doubled the number of people using an improved water source between 1990 and 2008, coverage was still only 60% in 2008. The 2011 report showed slower worldwide progress with regard to basic sanitation, where the picture is quite bleak. The percentage of the world's population using an adequate toilet rose by just 7percentage points from 1990 to 2008, from 54 to 61%. Almost half the population in developing regions did not have access to sanitary facilities, and an estimated 1.1 billion people practice open defecation, exposing themselves and their communities to major health risks. In sub-Saharan Africa, only 24% of the rural populations were using an improved sanitation facility (United Nations MDG report, 2011).

The global impact studies by WHO/UN-WATER (2010) showed that, where there was access to improved water source, varying proportions of households in the communities studied did not use it at all, or did not use it during part of the year. The reasons for this varied. They included long distance to the improved source, particularly in cases of scattered rural households; high number of users per water point causing long queuing time; availability of rain water as an alternative source during the rainy season; and decrease in the water output of some improved water sources, particularly during the dry season. For example, in Mozambique, the impact evaluation found that paying for water did not create barriers to access for poor households, but 31% of households in villages where an improved

water source was introduced still did not use it. In this case the continued use of traditional sources was mainly explained by long distances to the improved water source (WHO/UN-WATER, 2010).

According to WHO/UNICEF (2010), the impact of education and training on the construction and use of toilets has, in many cases, been limited, but there are recent examples of approaches with promising results. For example, within a few years, the 'Community Approach to Total Sanitation' (CATS), promoted by UNICEF in Mozambique, achieved an increase of almost 14 % in households' ownership of a private latrine and subsequent increased use of latrines in the communities studied. The hygiene of toilets also improved.

Another programme for which monitoring reports and external evaluations show promising results is the NGO BRAC's programme in Bangladesh. The approach combined a broad range of activities aimed at awareness, small loans for the building and improvement of toilets for poorer households, subsidies for the poorest and loans and training for local entrepreneurs. The percentage of the population with an (improved) toilet increased significantly (WHO/UNICEF, 2010).

As the MDG data show, developing country governments and their partners must devote more efforts and resources to implement more effective approaches in the rural sanitation sector. As a result of a predominantly technical orientation, government institutions are often not equipped for providing education and training for promotion of appropriate hygiene and sanitation behavior, undermining effectiveness of the implemented programmes (WHO/UNICEF, 2010). Programme components for promotion of sanitation and hygiene are often left to NGOs and funded by donors. Collaboration between water and health authorities remains limited. Developing countries are often reluctant to invest in basic sanitation, particularly if the strategy to be pursued is not capital intensive. Where governments install capital-intensive sewage systems and waste water treatment plants, they may over-design them and/or miscalculate willingness to pay for services (WHO/UNICEF, 2010).

A study by Prüss-Üstün et al. (2008) in five countries found that the percentage of operational water supply facilities had increased with support from the programmes over the

years. Eighty to ninety percent of the water supply facilities under review were operational at the time the studies were conducted, some of which were evaluated many years after the water supplies had been installed. The high percentage was explained by varying factors such as management of facilities by motivated organizations of water users at the community level; strong community leadership; dependence of communities on the water source; the water supply facilities still being new; and rehabilitation of broken facilities by the government with donor assistance.

According to WHO and UNICEF (2010) report, the root causes of failed water and sanitation systems are weak institutions, inadequate support of institutions, lack of institutional monitoring, poor capacity of community and government structures, over-reliance on NGOs, and external financing from NGOs.

Fewtrell et al. (2013) asserts that many programmes have tried to strengthen the role of the private sector in the installation of rural water and sanitation systems, especially in their maintenance, but with limited success. Often the markets are too small, scattered and sporadic to make such work a viable business proposition. An even bigger challenge is paying for maintenance in the medium to long term, when major parts and sometimes whole systems may need renovation or replacement. Covering the full cost of long term maintenance from user charges is rarely feasible; an element of subsidy will remain necessary for the time being. Governments and funding agencies are often reluctant to confront this reality.

2.3.1.1 Safe Drinking Water Facilities

In terms of water supply, those basic needs include access to a safe supply of water for domestic use, meaning water for drinking, food preparation, bathing, laundry, dishwashing, and cleaning (Bendahmane, 2013). In many cases, domestic water may also be used for watering animals and vegetable plots or gardens. Definitions of 'access' (distance to the nearest water-point and per capita availability) and 'safe' (water quality) may vary from country to country (Bendahmane, 2013).

According to Bourne (2004), the water supply system may be: a hand pump raising groundwater from a borehole or dug well; a stand post and tap connected to a pipe system (which may be supplied by motorized pumping or by gravity, from a borehole, stream, reservoir, or spring source, with or without any water treatment); systems which may consist of only a few stand posts in a village, or may be part of a larger regional or city-wide system; or a water butt supplied by rainwater from a roof catchment.

Dangerfield (2012) argues that a number of families share each hand pump or stand post (water-point), and family members (usually women and children) both collect water from it and often wash clothes or dishes there. Improved levels of service are provided by increasing the number of water points, so reducing the time and distance to collect water. Most convenient is the yard connection, where each family has a stand post on its own housing plot, or the house connection, where water is supplied into the house at a pressure which operates several taps in the bathroom and kitchen (Dangerfield, 2012).

However, Davis et al. (2013) expresses disappointment that in rural areas poor people have to work hard for their water, often fetching it from far-off sources and using it sparingly. The time spent in collecting water is a double burden, as it means less time is available for the productive activities on which subsistence economies depend. In cities, the urban poor suffer the indignities of inadequate sanitation and frequently have to purchase water from private vendors. Research in slum and squatter settlements in Jakarta showed that less than a quarter of the city's population has direct connections to a piped water system and 30% depend solely on purchasing water from vendors.

2.3.1.2 Sanitation Facilities

There are many possible definitions of sanitation. For the purposes of this research, the word 'sanitation' alone is taken to mean the safe management of human excreta. It therefore includes both the 'hardware' (e.g. latrines and sewers) and the 'software' (regulation, hygiene promotion) needed to reduce faecal-oral disease transmission. According to Manou-Savina (2012), sanitation also encompasses the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of controlling

all the factors in the physical environment which may have a deleterious impact on human health and well-being.

Okun (2014) explains that in developing countries, environmental sanitation normally includes drainage, solid waste management, and vector control, in addition to the activities covered by the definition of sanitation. Safe excreta disposal for poor people usually involves the use of a family latrine, which the family members themselves keep clean. The latrine will use one of many various designs of pit, slab, and superstructure, and may also include a lid, vent pipe, or water seal to control flies and odour. Poor slums and informal settlements are commonly found on low lying, flood-prone, or low-infiltration-capacity land with a high water table, leading to poor drainage and sanitation problems. Many poor people rely on drainage channels, canals, and rivers for bathing, laundering, and defecation which become clogged with garbage, and flood when solid waste management is inadequate. Research in São Paulo, Brazil showed that only 2% of slum dwellers have any form of sanitation (Hardoy et al., 2011). Improved access to natural sources of water or a piped water supply, along with appropriate and affordable sanitation, are essential ingredients in facilitating the social and economic development of poor rural and urban communities.

2.3.2 Social Development

Social development is about improving the well-being of every individual in society so they can reach their full potential (Sakamoto, 2013). The success of society is linked to the well-being of each and every citizen. Social development means investing in people. It requires the removal of barriers so that all citizens can journey toward their dreams with confidence and dignity. It is about refusing to accept that people who live in poverty will always be poor. It is about helping people so they can move forward on their path to self-sufficiency (Sakamoto, 2013).

Social development was defined by United Nations (1995) using three basic criteria: i) poverty predication, ii) employment generation, and iii) social harmony. Addressing social development issues can improve and sustain human development and reduce individual and community vulnerability. According to Browne and Millington (2015), poverty, gender

inequality, social exclusion and geographic location can all affect a person's ability to realize their right to a decent standard of living. Moreover, individuals and groups may face multiple barriers to realizing their rights. Browne and Millington (2015) posit that these barriers can negatively reinforce each other. For example, girls and women living with disabilities, or poor women living in rural areas, are likely to face greater barriers than most women living in better-off urban settings. Challenges to human development can change throughout a person's life and especially at particular periods. For example, the early years of life, the transition from school to work and from work to retirement are periods when human development challenges are high (Browne & Millington 2015).

Hinds (2013) add that realizing rights to human development involves understanding and addressing the social drivers of development. Without doing so, the gains made will be undermined. By taking social development issues on board, development actors will achieve better results and better value for money.

The World Bank (2017) report revealed that social development is only about increasing people income but also empowering them to be independent and resist any form of exploitation such as corruption and physical harassment to "put people first" in development processes. Poverty is more than simply low income – it is also about vulnerability, exclusion, unaccountable institutions, powerlessness, and exposure to violence. According to the World Bank (2017), empowering the masses with services will in the long run cause social inclusion and development. In other words, by working with governments, communities (including Indigenous Peoples' communities), civil society, and the private sector, social development translates the complex relationship between societies and states into operations.

2.3.2.1 Reduced Vulnerability

Vulnerability refers to exposure to contingencies and stress, and the difficulty in coping with them. Garg (2015) define vulnerability "as the risk of adverse outcomes to receptors or exposure units (human groups, ecosystems, and communities) in the face of relevant changes in climate, other environmental variables, and social conditions." Vulnerability has also been defined as "a human condition or process resulting from physical, social, economic and

environmental factors, which determine the likelihood and scale of damage from the impact of a given hazard” (Jakobsen, 2011).

The starting point in disaggregating vulnerability is the internal/external distinction proposed by Simelton et al., (2010): “Vulnerability thus has two sides: an external side of risks, shocks, and stress to which an individual is subject to; and an internal side which is defenseless, meaning a lack of means to cope without damaging loss. Loss can take many forms-becoming or being physically weaker, economically impoverished, socially dependent, humiliated or psychologically harmed”.

Ahmed (2010) also utilizes a two-step model of vulnerability but uses the concepts of sensitivity and resilience to significantly change the focus and emphasis of Chamber’s internal/external distinction. “Analyzing vulnerability involves identifying not only the threat but also the resilience or responsiveness in exploiting opportunities, and in resisting or recovering from the negative effects of a changing environment. The means of resistance are the assets and entitlements that individuals, households, or communities can mobilize and manage in the face of hardship. Vulnerability is therefore closely linked to asset ownership. The more assets people have, the less vulnerable they are, and the greater the erosion of people’s assets, the greater their insecurity”.

The definition of the ‘space of vulnerability’ by Tonmoy (2013) shows exposure (risk of exposure to hazards) as the external side of vulnerability, whilst capacity (risk of inadequate capacity to mobilize resources to deal with hazards) and potentiality (the risk of severe consequences) form a more complex understanding of the internal side of vulnerability.

Scheffran and Remling (2013) describe exposure to Damaging Fluctuations (DF) (this is increased with size, frequency, earliness and bunching and this correlates to the description of exposure by Watts and Bohle), the vulnerability to exposure (this increases with unpredictability, co-variance with other DFs and exposure relatively to the portfolio of assets and activities, this correlates roughly to capacity), and aversion (this increases with exposure, vulnerability and experience, and correlates to potentiality).

According to Bharti (2016), chronic exposure to risks is a crucially important source of vulnerability. Risks are varied in nature and can range from macroeconomic shock, natural disaster, health hazard, personal insecurity, and socially compulsive expenses such as dowry. Each of these categories contains a rich subset of varieties. Macroeconomic shocks can be caused by changes in the external trading environment and/or consequences of domestic policies (Rurinda, 2014). Natural disasters involve crop damage, housing and similar damages caused by cyclones, floods, river erosion as well as drought and rising salinity. Health hazards include both expenditures on member illness and livestock death through diseases. Personal insecurity includes theft, eviction from land, money cheating, land litigation, physical assault, physical threats, police harassment, court/police expenses, rape and abandonment of women. Dowry includes expenses incurred on a daughter's marriage. Others include death of the main breadwinner (Shahi, 2013).

Many factors contribute to vulnerability. These factors act to undermine capacity for self-protection, block or diminish access to social protection, delay or complicate recovery, or expose some groups to greater or more frequent hazards than other groups (Sharma, 2009). They include rapid population growth, poverty and hunger, poor health, low levels of education, gender inequality, fragile and hazardous location, and lack of access to resources and services, including knowledge and technological means, disintegration of social patterns (social vulnerability) (Grasso et al., 2014). Other causes include; lack of access to information and knowledge, lack of public awareness, limited access to political power and representation (political vulnerability), (Nguyen, 2015). When people are socially disadvantaged or lack a political voice, their vulnerability is exacerbated further. Economic vulnerability is related to a number of interacting elements, including its importance in the overall national economy, trade and foreign-exchange earnings, aid and investments, international prices of commodities and inputs, and production and consumption patterns. Environmental vulnerability concerns land degradation, earthquake, flood, hurricane, drought, storms (Monsoon rain, El Niño), water scarcity, deforestation, and the other threats to biodiversity (Nguyen, et al., 2017).

2.3.2.2 Social Inclusion

Social inclusion is defined by World Bank (2013) as the process of improving the terms for individuals and groups to take part in society and the process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society. According to Commission of the European Communities (2010), social inclusion is a process which ensures that those at risk of poverty and social exclusion gain the opportunities and resources necessary to participate fully in economic, social, political and cultural life, and to enjoy a standard of living that is considered normal in the society in which they live. It ensures that they have greater participation in decision making which affects their lives and access to their fundamental rights.

Social inclusion has been defined as a process in which those at risk of poverty and social exclusion gain the opportunities and resources that are needed to fully participate in societal activities (Frazer & Marlier 2013). In this process, adequate income and employment have been treated as key means to tackle social exclusion, poverty and inequality.

The notion of space in relation to inclusion has been examined with regards to the African continent, where regional disparities are seen as a major obstacle to structural transformation (AfDB 2013; AfDB et al. 2015). Spatial inclusion has been defined here as a goal of connecting people to assets and goods regardless of their location and it is argued to be critical for poverty eradication and inclusive growth in the region (AfDB et al. 2015). Social inclusion has also been referred to as the endpoint of overcoming social exclusion, where social exclusion is characterized by the “involuntary exclusion of individuals and groups from society’s political, economic and societal processes, which prevents their full participation in the society in which they live” (UNDESA 2010:1).

The related concept of social cohesion, while traditionally encompassing shared values or a sense of belonging, has over time expanded towards integrating a wider variety of conditions, interests and identities that exist in societies (Rawls, 2002). Some, for instance, have used this concept to promote a society that offers opportunities of upward social mobility (OECD, 2012). For others, it has ensured that all citizens have access to

fundamental social and economic rights (Council of Europe 2001). In its regional approach to social cohesion, UNECLAC (2010) has incorporated subjective information by emphasizing not only the relationships between the mechanisms of inclusion and exclusion that involve equity, political legitimacy, institutional factors and values, but also citizens' reactions and perception of how such mechanisms operate.

Suchowerska (2016) posits that a socially inclusive society is defined as one where all people feel valued, their differences are respected, and their basic needs are met so they can live in dignity. A socially inclusive society is one where all people are recognized and accepted and have a sense of belonging. Social inclusion is seen to be defined in opposition to social exclusion. Some analysts have argued that both inclusion and exclusion are two sides of the same coin. Social exclusion is the process of being shut out from the social, economic, political and cultural systems which contribute to the integration of a person into the community (Cappo, 2012). Social inclusion, community inclusion, social connectedness, normalization, social integration, social citizenship - all these are terms that relate to the importance of the links between the individual members of a society and the role of each person as a member in that group.

For the purpose of this study, social inclusion is defined as the process of improving the terms of participation in society for people who are disadvantaged on the basis of age, sex, disability, race, ethnicity, origin, religion, or economic or other status, through enhanced opportunities, access to resources, voice and respect for rights. Thus, social inclusion is both a process and a goal.

According to Denny (2014), in discussing social inclusion, one should also be aware of the multidimensional nature of "inclusion": inclusion of whom (for example, social groups or communities), inclusion of what (goods, services, resources), inclusion into what (labour market, welfare system or space, whether physical, political, social or cultural), how (equally, fairly, voluntarily or involuntarily), for what purpose and on what terms. Caution is needed regarding the terms on which social inclusion is carried out. Many impoverished and exploited people are in fact included, but on highly adverse terms. In this situation, social inclusion may not be automatically beneficial for the poor, nor is it necessarily wanted by them (Schöninger,

2013). For example, the terms of contract farming arrangements may involve inclusion in value chains that could be detrimental to farmers and result in “adverse incorporation” (Akhavan, 2012). Furthermore, certain patterns of social inclusion can promote inclusion in economic and political systems that are exploitative, repressive or ecologically unsustainable or can lead to an unwanted imposition of uniformity that may undermine a way of living of indigenous peoples, minorities and other social groups and suppress cultural diversity (Mosselman, 2016).

If the goal of social inclusion is to achieve a society for all, then it can be seen as an absolute phenomenon. At the same time, inclusion can also be relative in the sense that people, no matter how difficult their situation is, are involved in a broader network of social relations. Thus the problem arises not so much because they are unintegrated into wider social systems, but because present patterns of inclusion promote unjust or destructive outcomes in some situations (Pradhan, 2011). The challenge for policy is then to ensure that patterns of human relations in a society promote fair opportunities and guarantee equitable outcomes for all.

Scoones (2009) points out that poor people are often forced to live very precariously, with no cushion against the adverse effects of the vulnerability context; their livelihoods are, to all intents and purposes, unsustainable. For such people, reducing their vulnerability to the downside and increasing the overall social sustainability of their livelihoods may well take precedence over seeking to maximize the upside.

2.3.2.3 Improved Wellbeing

Well-being is a general term for the condition of an individual or group, for example, their social, economic, psychological, spiritual or medical state; a high level of well-being means in some sense the individual or group's condition is positive, while low well-being is associated with negative happenings (Litmanen, 2014). Feelings of well-being are fundamental to the overall health of an individual, enabling them to successfully overcome difficulties and achieve what they want out of life. Past experiences, attitudes and outlook can all impact on well-being as can physical or emotional trauma following specific incidents (Wang et al., 2014).

According to Davis et al., (2011), wellbeing is not just the absence of disease or illness. It is a complex combination of a person's physical, mental, emotional and social health factors. Wellbeing is strongly linked to happiness and life satisfaction. In short, wellbeing could be described as how one feels about oneself and one's life. Kluczyk, M. (2013) posit that every aspect of one's life influences their state of well-being. Researchers investigating happiness have found the following factors enhance a person's well-being: happy intimate relationship with a partner, network of close friends, enjoyable and fulfilling career, enough money, regular exercise, nutritional diet, sufficient sleep, spiritual or religious beliefs, fun hobbies and leisure pursuits, healthy self-esteem, optimistic outlook, realistic and achievable goals, sense of purpose and meaning, a sense of belonging, the ability to adapt to change, and living in a fair and democratic society (Bos et al, 2016; Huseyin & Ioannidis 2015).

According to Scoones (2009), people value non-material goods. Their sense of well-being is affected by numerous factors, possibly including: their self-esteem, sense of control and inclusion, physical security of household members, their health status, access to services, political enfranchisement, maintenance of their cultural heritage, etc. Chambers (1992) argues that such a well-being approach to poverty and livelihood analysis may allow people themselves to define the criteria which are important. This may result in a range of sustainable livelihood outcome criteria, including diverse factors such as self-esteem, security, happiness, stress, vulnerability, power, exclusion, as well as more conventionally measured material concerns (Chambers, 1992).

Cleveland and Garry (2012) argue that well-being describes the life satisfaction of people, and is partly a function of a person's ability to make choices and live the type of life that they want to lead. They state that well-being is not simply about access to income and resources. It is also related to health, education, social, cultural, environmental and political outcomes. For example, well-being includes free and open participation in family, wider kinship and community groups. It includes participation in formal and informal political processes that constitute governance at all levels in society, and also involves participation in cultural processes that create and sustain individual, group and collective identity (Cleveland and Garry, 2012).

De Neve and Norton (2014) say that at a very general level, the objective of government is to improve both the overall level, as well as the distribution of well-being. In other words, while policy is focused on improving the average well-being of all members of society, it is also constrained by a need to ensure that: all individuals achieve some level of well-being above some basic minimum; there is opportunity for all to have a fair chance to achieve their potential; and the well-being of future generations is protected (De Neve& Norton 2014).

2.3.3 Empirical Studies

Improving the health of the poor is a frequently cited goal of water and sanitation projects. The relationship is difficult to establish in practice at the project level, but over the longer term it can be demonstrated that there are significant health-associated benefits from improvements in water supply and sanitation provision, particularly when these are associated with changes in hygiene behavior. The Water and Sanitation for Health programme (Esrey, 2012) found that in the 144 epidemiological studies that it had reviewed, the health impact of improved water supply and sanitation facilities was high, measured by significant reductions in morbidity rates (sickness) and higher child survival rates.

The White Paper on International Development treats water as both an economic and a social good in the context of the goals of sustainable development. The benefits of safe water supply and sanitation provision go beyond improvements to health, well-being, and quality of life. Access to convenient and affordable water can save people time and energy and enhance their livelihood opportunities. Improvements in sanitation will improve privacy and retain human dignity, both of which are significant and legitimate social development concerns. These less quantifiable benefits are among the advantages of water supply and sanitation most often reported by people in low-income communities (Simpson-Hébert et al., 2012).

The dismal situation created by inadequate access to water and sanitation services is aggravated still further by large numbers of broken down or malfunctioning water and sanitation services. The health benefits of an improved water supply can be destroyed overnight if people are forced to revert to contaminated sources when the public supply fails.

Capital investment in new services is wasted unless there is adequate provision for the reliable operation and maintenance of installed facilities (Almedom et al., 2013).

Telmo (2012) carried out a study on water supply and sanitation in Mali and found that the two types of water supply technologies present were hand dug wells and borehole pumps. There were also three types of hand dug wells: improved traditional wells, not improved traditional wells, and modern wells. Well depths ranged from 5.2 to 9.0 meters. Twenty-seven of the 38 water sources had water available year round, and all households had access to a water source with year round availability. The distance traveled to collect water ranged from 3 to 260 meters and the average distance traveled was 44 meters. Although all households had reasonable access to a water supply, not all households collected water from an improved source. The only improved water supply technologies in the village were two borehole pumps. Simple pit latrines were the only type of sanitation facilities present in the village and they are considered to be improved sanitation technologies.

2.4 Gaps in the Reviewed Literature

A number of studies including those of Esrey (2012); Simpson-Hébert et al. (2012); Telmo (2012); and Almedom et al. (2013) have been carried out on the subject of water supply and sanitation. However, none of them has covered the aspect of social development vis-à-vis water supply and sanitation projects, hence, providing a content gap that this study attempted to address. Secondly, none of the above studies was done in Rulindo district, hence posing a contextual gap which the current study covered. In addition, all of the above mentioned studies were conducted at least 5 years ago, yet the world is developing at a terrific pace and, therefore, the findings in those studies may have become dated, necessitating the current study to provide up to-date and relevant information within the current dynamic environment.

CHAPTER THREE METHODOLOGY

3.0 Introduction

This chapter covers the research design, study population, sample size, sampling techniques, data sources, research instruments, validity and reliability, data collection procedures, data analysis, ethical considerations, and limitations of the study.

3.1 Research Design

Research design is the plan or strategy for conducting the research. This study adopted a descriptive cross-sectional survey design, because it aimed at studying a particular phenomenon (or phenomena) at a particular time. Cross-sectional studies often employ the survey strategy (Easterby-Smith et al., 2008). The researcher sought to describe the incidence of a phenomenon, for example, (non-governmental water projects and social development). Furthermore, the study relied more on the qualitative approach which is predominantly used as a synonym for any data collection technique (such as focus group discussions or interviews) or data analysis procedure (such as categorizing data) that generates or uses non-numerical data (Creswell, 2014).

3.2 Study Population

Rulindo District has a total of 17 Sectors, however, due to financial and time factors, the researcher limited her study to 5 Sectors, namely: Burega, Cyinzuzi, Mbogo, Ngoma, and Rusiga. This researcher preferred these sectors because they are the ones that have most of the activities of Water For People Projects. Thus, based on the 5 Sectors the target population is 64,956 informants (National Bureau of Statistics, 2012). The informants included the beneficiaries of Water for People Project.

3.3 Sample Size

Sample size refers to the identification of a minimum number of respondents chosen to represent the population of the study (Amin, 2005). In this study, Slovene's formula was used to determine the sample size.

Slovene's formula: $n = \frac{N}{1+N(\alpha)^2}$

Where; n=sample size, N=target population, $\alpha=0.05$ level of significance.

$$n = \frac{64,956}{1 + 64,956(0.05)^2}$$

$$n = 398$$

Therefore, the sample size of this study was 398 informants

The summary of the beneficiary informants, their target population and the sample size of the five selected sectors within Rulindo district were presented in table 3.1 below.

Table 3.1: Target Population

Sectors	Target Population	Sample Size	Sampling approaches
Burega	12,730	78	Simple random
Cyinzuzi	13,662	84	Simple random
Mbogo	16,795	103	Simple random
Ngoma	10,881	66	Simple random
Rusiga	10,888	67	Simple random
Total	64,956	398	

Source: Water For People Report (2016)

The qualitative sample size was presented in table 3.1 below.

Table 3.2 Qualitative Sample Size

Key Informants	Local Leaders	Opinion Leaders	Project Officials	Sampling approaches
Burega	5	8	3	Purposive
Cyinzuzi	5	8	3	Purposive
Mbogo	5	8	3	Purposive
Ngoma	5	8	3	Purposive
Rusiga	5	8	3	Purposive

3.4 Sampling Technique

The sampling technique describes how the researcher was selected, with reasons, the units and subjects that was made up his/her study sample population (Amin, 2005). According to Mugenda and Mugenda (2003), the sampling technique is very necessary in any social study because it helps in answering questions pertaining to what type of respondents will be called upon to respond to the research questions, whether the selected group of respondents is adequately representative of the population, how wide a coverage would be acceptable and other questions that would help the researcher in the selection of his sampling design.

In this study, the researcher used simple random sampling to select the beneficiaries of the water project. This was achieved by the researcher writing the names of the beneficiaries on different pieces of paper. The pieces of paper were then put in a bowl and shaken to randomize them. The researcher randomly selected the names of the respondents on the pieces of paper and continued to do so until she was satisfied with the number of respondents that she needed. This sampling technique was preferred because it gives equal opportunity to each participant to be included in the study without bias.

Furthermore, the study used purposive sampling to select the local leaders, opinion leaders and project officials based on the judgement of the researcher of the expert knowledge they have regarding the study.

3.5 Data Source

This study used both primary and secondary data. The primary data was collected using focus group discussion, while the secondary data was collected using document reviews from journals, articles, government reports, NGO water projects annual reports, published dissertations and theses, and books.

3.6 Research Instruments (Data Collection Tools)

3.6.1 Focus Group Discussions

Focus Group Discussion (FGD) are useful if the researcher wishes to explore group perceptions, experiences and understanding with regard to a particular issue. It involves having a discussion with a specific group of respondents on a particular topic or subject. A

small group of people of about 8-10 respondents are recommended for the focus group discussion. The FGD helped this study to generate primary data on issues of Non-Governmental Organization Water Projects, where each focus group contained opinion leaders among the beneficiaries, project officials and five Area local (Sectors) leaders from Burega, Cyinzuzi, Mbogo, Rusiga and Ngoma. The FGD was carried out with the help of research assistants recording the discussions, while the researcher engaged the respondents on various issues related to the purpose and objectives of the current research. In each Sector the researcher organized seven (7) FGDs, each comprising 10 respondents.

3.6.2 Interview Guide

This study included face to face interviews. The interviews addressed topics on Non-Governmental Organization Water Projects. The key interview informants included local leaders (5 from each sector), project officials (3 from each sector), and opinion leaders (2 from each of the 5 sectors). The key informants were interviewed because of their extensive knowledge of the research issues; the respondents' own words were recorded, and clarified and incomplete responses from FGDs were followed up with the key informants.

3.6.3 Documentary Review

This is an approach in qualitative research in which documents are interpreted by the researcher to give voice and meaning to the various research variables. The approach helps to generate secondary data. This analysis adopted themes in line with the objectives of the research and helped generate secondary data critical for the current research. In addition, government newsletters and water project reports were also reviewed to establish the progress, challenges and successes of water and sanitation projects in Rulindo District. Other important documents that were consulted included publications from UNICEF, WHO, MDGs, SDGs, WSP and GLASS. These acted as a source of information on global perspective of water and sanitation projects.



3.7 Validity and Reliability

3.7.1 Validity

Validity refers to the ability of the instrument to collect justifiable and truthful data i.e. the extent to which the instrument measures what it is intended to measure (Amin, 2005). Validity is therefore about soundness or effectiveness of study instruments. This study used content validity to establish the validity of the instruments. Content validity is the extent to which the items in the instrument represent the content of the attribute being measured. The researcher achieved this through the judgment of the instruments with the help of two supervisors and other experts in the field of project planning. The researcher adjusted the instrument accordingly as recommended by the experts.

3.7.2 Reliability

Reliability of an instrument is the ability of the instrument to collect the same data consistently under similar conditions (Odiya, 2009). Reliability is about accuracy and consistency of the instruments. Reliability enhances repeatability and generalization of study findings. It can be ensured through: test re-test method, split-half method, parallel form reliability method and internal consistency method. This study preferred to use the test retest method. In the test retest method, the researcher pre-tested twice the instrument on a sample of 5 experts in the field of project planning in order to check consistency, accuracy and trustworthiness of their responses. The researcher made adjustments and simplification of the questions in an understandable manner. The adjustment provided clarity and removed all anomalies and ambiguities in the questions.

3.8 Data Collection Procedure

An introduction letter was obtained from the Directorate of Higher Degrees and Research, Kampala International University (KIU) for the researcher to solicit approval to conduct the research on Water for People Project.

During the administration of the research instruments on the selected respondents, the respondents were properly and adequately oriented on the study and why it was being carried out. The key interview informants were verbally requested to consent to the study.

3.9 Data Presentation

After the data collection stage, the researcher proceeded with analyzing, describing and interpreting them. At this level, three stages were taken into consideration: the first stage was concerned with combining similar information from different informants so as to get the right orientation of their points of views. At the second stage, collected data was summarized by presenting it in tables under different themes. The data was presented with numbers showing how many informants shared particular piece of information and percentages to evaluate the rate or the incidence. Lastly, analysis and discussion of collected data was done. Attempts to respond to the researcher questions and objectives were done, and this formed the basis for drawing conclusions.

3.10 Data Analysis

Qualitative data was analyzed using manual coding on the transcripts to identify the significant statements across individual interviews. Subsequent readings of the significant statements helped in identifying the meaning of units or sub-themes emerging within the patterns. For presentation of thematic findings, both *textural* and *structural* descriptions were used in the results section. Textural descriptions are significant statements used to write what the respondents experienced. Structural descriptions are the interpretation of the context or setting that influenced participants' experiences. For textural descriptions, the quotes of respondents were given in italics, while the structural descriptions were interpreted by the researcher and provided in plain text.

3.11 Ethical Considerations

In order to address ethical issues in the research process, the researcher observed the following principles:

Authorization: The researcher got transmittal letter from the Directorate of Higher Degrees and Research, Kampala International University for purposes of soliciting approval to conduct research in Rulindo district.

Anonymity and Confidentiality: The names or identifications of the informants were treated anonymous and information collected from them was treated with utmost confidentiality.

Integrity: The researcher acted honestly, fairly and respectfully to all the informants who participated in this study.

Ascriptions of authorship: The researcher accurately recorded the sources of information in an effort to acknowledge the works of past scholars or researchers. This ensured that no plagiarism was practiced.

Scientific adjudication: The researcher worked according to generally acceptable norms of research.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents the data collected from the field, analysis and interpretation of the data. It follows the major themes and objectives of the study. After a description of each of the finding, an interpretation is given in the context of the study objective.

4.1 Response Rate

The study targeted 398 beneficiaries, however, only 315 participated in the study. This gave a response rate of 79%. According to Amin (2005), if the response rate is more than 70%, the results are generalizable. Table 4.1 gives the summary of the response rate.

Table 4.1: Summary of Respondents and Participation in the Study

Sector	Respondents prior to interviews			
	Beneficiaries	Local leaders	Opinion leaders	Project officials
Instruments	FGD	Interviews	Interviews	Interviews
Burega	78	5	8	3
Cyinzuzi	84	5	8	3
Mbogo	103	5	8	3
Ngoma	66	5	8	3
Rusiga	67	5	8	3
Total	398			
Sector	Respondents Interviewed			
Instruments	FGD	Interviews	Interviews	Interviews
Burega	61	3	4	1
Cyinzuzi	59	2	4	2
Mbogo	88	3	3	2
Ngoma	52	1	4	1
Rusiga	55	2	2	1
Total	315	11	17	7

Source: primary data, 2017/2018

4.2 Demographic Characteristics of the Respondents

The demographic characteristics of the respondents were assessed in terms of gender, age, education level, employment status and monthly income. Table 4.2 gives the summary of the findings.

Table 4.2: Demographic Characteristics of the Respondents

Demographic Characteristics	Frequency	Percentage (%)
Gender		
Male	143	45.5
Female	172	54.5
Total	315	100.0
Age		
18-29 years	38	12.1
30-39 years	126	39.9
40-49 years	76	24.1
50-59 years	64	20.4
60 and above	11	3.5
Total	315	100.0
Education Level		
No formal education	60	19.3
Primary	37	11.6
Secondary	113	35.9
Post-secondary	105	33.2
Total	315	100.0
Employment Status		
Peasant-farmer	58	18.3
Self-employed/private business	95	30.2
Casual laborer	42	13.4
Civil servant	90	28.6
Unemployed	30	9.5
Total	315	100.0
Monthly Earning (Rwandan Franc)		
Less than 100,000	94	29.9
100,000-500,000	138	43.7
500,000-1million	74	23.4
More than 1 million	9	3.0
Total	315	100.0

Source: primary data, 2017/2018

The results presented in table 4.2 revealed that majority, 54.5% of the respondents were female while the male were represented by 45.5%. The dominance of the female respondents was because the project is a water project which mostly affects women because it is the women who fetch water, boil it to make it safe for drinking and cooking and manage the sanitation aspects of the home.

Furthermore, table 4.2 revealed that majority, 39.9% of the respondents were within the age group of 30-39 years, followed by 24.1% who were within the age group of 40-49 years. On the other hand, respondents within the age group of 50-59 years and 18-29 years were represented by 20.4% and 12.1% respectively. Only 3.5% of the respondents were above 60 years of age. The dominance of the respondents within the age group of 30-39 years implies that they are mature enough to practice proper sanitation and safe water consumption.

Similarly, table 4.2 revealed that majority, 35.9% of the respondents had secondary level of education, followed by 33.2% who had post-secondary education while those with no formal education and primary level education were represented by 19.3% and 11.6% respectively. The dominance of the respondents with post-secondary education level implies that most of them understand very well the importance of keeping water safe for drinking and promoting better hygiene within the family.

In addition, table 4.2 revealed that majority, 30.2% of the respondents were self-employed in private businesses while 28.6% were civil servants. The respondents who were peasant farmers and casual laborers were represented by 18.3% and 13.4%. Only 9.5% of the respondents were unemployed. The dominance of the respondents who were self-employed implies that there is reduced vulnerability for their families and therefore having an improved wellbeing.

Last but not least, table 4.2 revealed that majority, 43.7% of the respondents earn monthly income of 100,000-500,000, while 29.9% earn less than 100,000. However, respondents with monthly earnings of 500,000-1million and more than 1million were represented by 23.4% and 3% respectively. The dominance of the respondents with monthly earnings of 100,000-

500,000 imply that they have access to better water and sanitation facilities and are not vulnerable in their social life.

4.3 How Water for People Projects have Provided Safe Drinking Water and Improved Sanitation Facilities for the People of Rulindo District

The first objective was to analyze how Water for People Projects have provided safe drinking water and improved sanitation facilities for the people of Rulindo district. The objective was achieved by involving the beneficiaries of the Water Project in a focus group discussion. Different views of the respondents were summarized in the following paragraphs.

Water Facility

The researcher asked the respondents the question: “what type of water source do you use (e.g. piped water, spring water, tap water, borehole, stream water etc.?” The results were mixed, though out of 315 participants, 129(41%) indicated that they use spring water, 101(32%) use boreholes, 60(19%) used piped water, 19(6%) used tap water and only 6(2%) still use stream as their main source of water.

The above results imply that the use of spring water is common among the rural dwellers of Rulindo district. This could be because spring water is cheap and easy to maintain. It should be noted that a properly tapped spring can improve a communities’ water supply substantially if combined with adequate protection measures.

Furthermore, the researcher asked the key interview informants this question: “How far is the water source from your home residence?” The responses of the majority of them indicated a distance of 2km on average, while some people indicated 1km, others said they have water at their homes. This, therefore, implies that the water projects in the district are tremendously solving water problems in the district. Therefore, gone are the days when women and children used to walk long distances in search for water, today they can access the nearest spring, borehole or tap water within a walkable distance. Others have piped water in their houses, hence, no need to walk anywhere in search of water.

Similarly, the researcher posed this question to the participants: “How do you ensure that the water is safe for drinking (e.g. through boiling, filtering etc.)?” Given the rural setting of the study, majority of the key informants indicated that they boil their water to keep it safe, others said they use filtering methods, similarly a few indicated that they use distillation method, however, some respondents said they do not do anything, they just use it the way it is. Their reasoning is that since, it is borehole, spring, and tap which are their main source of water, therefore they believe it is already safe for drinking and for other domestic use.

However, the study established that the common method the people of Rulindo district use for keeping their water safe and drinkable is by boiling. This is because boiling water allows the chlorine from tap water or piped water to escape, which could improve the taste of some heavily-chlorinated waters. This also ensures that any other germs that could have been in the water dies at a temperature of 100°C, hence rendering the water germ-free.

All in all, Water for People projects is “Improving the water facilities including tap water and rainwater harvest for schools. Encourage the culture of ensuring hygienic environments in schools through committees. Therefore, it is important to note that adequate drinking water, sanitation, and hygiene are all essential ingredients to ensure human health. The same is true for proper wastewater management, which is a basic prerequisite for environmental health. Improving upon these services will bring economic gains while also helping to build resilience given increasing climate variability.

Sanitation Facility

The researcher asked the respondents the question: “What sanitation facility do you use at your home (e.g. flush toilet, pit latrine etc.)?” From the responses of members in both focus group discussions and interviews, majority of the responses indicated that the people use traditional shallow pit latrines, others use flush toilets while a few still practice open defecation.

The above responses imply that the Water for People Projects is doing a commendable job to provide the local people with the sanitation facilities they need. Shallow pit latrines have been built in several homes and schools, toilets have also been constructed in a number of

homes that have piped water in their dwelling places. This attempt is going to reduce vulnerabilities to diseases that come as a result of unhygienic practices.

Furthermore, the researcher asked the key interview respondents of where they throw their rubbish. The responses indicated that most of the people throw their rubbish in the bins provided by Water for People project, while others throw them in open bushes and a few of them throw in pits they dug around the home surrounding.

The above responses indicate that the use of bins as a rubbish dumping container is common among the people from Rulindo and therefore it makes their homes clean and hygienic without much littering with unwanted wastes. When rubbish is in the bins, it is easier to collect and dump in a well supervised manner. Bins also help one to separate food wastes from any other wastes so as to allow easy decomposing; where necessary easily decomposable wastes can be used as manure in home gardens.

In addition to the above, the researcher asked the respondents of what hygiene education practice they received during the sanitation training. The responses indicated the following as the most common hygiene practice education training received by the local community: water sources, water treatment, water collection, water storage, water drinking, water use, food handling, and waste water disposal.

Water source: the training could have probably demonstrated that all children, women, and men in the community should use safe water sources for drinking and food preparation. This implies that adequate water should be used for hygienic purposes such as bathing, household cleanliness, and clothes washing. In addition, water should be efficiently used and not wasted. Wastewater should be properly drained away. Improved water sources should be used hygienically and be well maintained. In other words, there should be no risk of contamination of water sources from nearby latrines, wastewater drainage, cattle, or agricultural chemicals.

Water treatment: training on simple purification procedures, e.g. chlorination, could have been carried out on the water source if necessary, or on how to filter to remove any solid material, or guinea worm.

Water collection: education training on collecting drinking-water in clean vessels without coming into contact with hands and other materials could have been taught to the local people. This includes measures of transporting water in clean and covered containers.

Water storage: better storage methods could have been a composition of the training materials given to the people. This is because water should be stored in vessels that are covered and regularly cleaned. Drinking-water should be stored in a separate container from other domestic water wherever possible.

Water drinking: Drinking-water should be taken from the storage vessel in such a way that hands, cups, or other objects cannot contaminate the water.

Water use: training on how water is used is also of great importance to the local people, most especially in times when there is drought. They need such knowledge on proper use of water. Adequate amounts of water should be available and used for personal and domestic hygiene. It is estimated that a minimum of 30–40 litres per person per day are needed for personal and domestic hygiene.

Food handling: a good lesson and knowledge on food handling is relevant in promoting better hygiene within the house and at home in general. In other words, this training implies that hands should be washed with soap or ash before food is prepared or eaten. Vegetables and fruits should be washed with safe water, and food should be properly covered. Utensils used for food preparation and cooking should be washed with safe water as soon as possible after use and left in a clean place.

Fecal disposal: all men, women, and children should use latrines at home, at work, and at school. The stools of infants and young children should be safely disposed off. Household latrines should be sited in such a way that the pit contents cannot enter water sources or the ground water table. Hand-washing facilities and soap or ash should be available, and hands should always be washed after defecation and after helping babies and small children.

Wastewater disposal: Household wastewater should be disposed of or reused properly. Measures should be taken to ensure that wastewater is not allowed to create breeding places for mosquitos and other disease vectors or to contaminate safe water.

Furthermore the researcher asked the key interview informants this question: “Generally, how have you benefited from the water and sanitation project in your community?” Their responses were summarized as below:

One of the beneficiaries had this to say:

At least I have water nearby my home. used to walk a distance of more than 4km just to get to the nearest stream and get water. but today, I walk a distance less than 1km because a borehole has been drilled just near my home so water is not a problem to me anymore.

In addition another beneficiary indicated that:

I have benefited from this project because my family now has a good pit latrine that is sustainable for us. We also have tap water in the house to help us practice better hygiene measures. In fact, our children no longer suffer from diseases like diaphorea or cholera because of poor hygiene.

Similarly, the project manager of Water for People had this to say:

Safe sanitation services give families dignity and promote community health by eliminating contamination of water supplies. For us, promoting safe sanitation services means developing sanitation markets. We want to make sure families have affordable options for materials to build bathrooms, contractors to build and maintain their bathrooms, and safe waste management services. For this to happen, we invent new sanitation technologies and empower sanitation entrepreneurs like masons and pit latrine emptiers throughout the sanitation value chain. We partner with microfinance institutions to provide families with loans to build bathrooms and work with communities to reduce open defecation rates, creating behavior change around sanitation practices.

Another project official added that:

While water and sanitation infrastructure are important, people must also understand the importance of using it. Behavior change and education about safe hygiene practices are included in all our interventions. On the community level, our hygiene work includes social art performances that motivate hygiene behavior change. In schools, we create hygiene curriculum and support teachers who lead Sanitation Clubs or set up Hygiene Corners in their classrooms. We make sure schools have hand-washing stations and toilets and support menstrual hygiene management, so girls have the education and resources they need to stay in school when they get their periods.

In response to benefit of the water project, a local leader had this to say:

The project is helping us to have access to clean and safe drinking water and reduce vulnerabilities to diseases that come as a result of poor hygiene. This is because safe water reduces water-borne diseases like diarrhea and cholera and saves hours every day spent fetching water – especially for women and girls. Safe and reliable water keeps families healthy and lets children stay in school.

One of the opinion leaders was quoted as saying:

This project is expected to provide the households in target area with easy access to safe drinking water....and increase the number of families able to practice safer hygiene and behaviour change towards hygiene and sanitation.

His colleague also reiterated that:

These projects will be equally important to ensure that all the 'partially covered' habitations having a supply level of less than 10 liters per capita per day (lpcd) and those habitations facing a severe water quality problem are fully covered with safe drinking water facilities on a sustainable basis.

In agreement with the opinion leaders, a local leader was quoted as saying:

They have come and they are building latrines for households which are too poor to do it themselves.....they are also training us on issues related to safe handling of drinking water, disposal of waste water, safe solid waste disposal, home sanitation and food hygiene, personal hygiene, particularly, washing one's hand with soap, and sanitation in community.

A beneficiary pointed out that:

They intervene on one hand in maintenance and operation of hand pumps as well as supporting local people to own them by establishing committees for better management...together with their counterparts, they rehabilitate broken parts and sensitize the users to collect money which can serve them in case the hand pumps are broken.

Furthermore, a project official clearly pointed out that:

Water For People works to reach Everyone in the district. This means reliable water and sanitation services for every family, clinic, and school. We want every single person – even the hardest-to-reach, the most vulnerable, and the marginalized – to have access to safe water and sanitation services.

Another project officials said that:

Water For People has redefined impact from commonly used inputs (beneficiaries, numbers of projects completed) to outcomes (water flowing over time, finance available for repairs and replacement, and water and sanitation services extending as new people move into communities). This is unique in the water sector. Our impact is embodied in our Everyone Forever initiative.

Water for People Project manager also pointed out that:

Our project is based on five principles which are intended to make the water project very beneficial to the people intended to. Our first principle is that we will reach every single person, even in the hardest to reach places and situations throughout the district. Secondly, the local government and community contribute financially to their development. Water For People's funds are catalytic but are never offered alone; this creates accountability and less dependence on international assistance. Thirdly, success is defined when these districts no longer need the external support of NGOs like Water For People. You cannot just say your work is "sustainable." You have to create the conditions for these districts to never need additional external support again. Fourthly, we will monitor the water system for 10 years to verify results and address challenges as they emerge. This is unprecedented in the water and sanitation sector. And lastly, replication; success means that other districts in the countries where we work adopt the principles of Everyone Forever and this initiative spreads without Water For People's direct financial support for further implementation. We have to show how our work can be applied by others to achieve scale so that entire nations have water and sanitation services that reach everyone and are poised to last forever.

The above responses imply that the people of Rulindo district have benefited from the water project by the fact that many people have access to clean, safe and affordable water supply. This implies that the water project was successful. This is because Water For People Project conducts pre-campaign and post-campaign household surveys to determine the increase in coverage for each sanitation improvement, and follows up with households to help finish the longer projects such as latrine construction.

In fact the Water for People Project Team works with the community Village Health Teams to create 'model households'. The Village Health Teams demonstrate all the sanitation improvements at their own homes, including tippy taps, latrines, plate stands, drainage systems for cooking areas, and rubbish pits. The Water for People Project Team

often gathers teams of high school and university students, local government officials, and the community Village Health Teams for the Sanitation Campaign. Each team works in one neighborhood of the village, going house-to-house during the sanitation campaign and making improvements to the homes it visits.

4.4 The Social Development of the People of Rulindo District As a Result of Water For People Projects

The second objective was to analyze the social development of the people of Rulindo district. This objective was achieved in focus group discussions with the project beneficiaries.

The researcher asked the respondents this question: “Can you afford nutritional food on a daily basis, if not, why?” The study found out that most of the people cannot afford three meals a day. Their reasons were summarized as below:

One elderly lady indicated that:

I no longer have the energy to dig or do any business. I mostly depend on handouts from my children who already have huge responsibilities of looking after their own families. I make sure at least I eat breakfast and supper. But I cannot afford milk, meat, chicken or rice. I mostly depend on sweet potatoes, posho and beans.

Another beneficiary also indicated that:

I have five children, and I and my wife we do not have good jobs to enable us earn enough money. I stopped in primary school, my wife is not educated, so we just do small garden work for people in the neighborhood so as to get something to eat. We cannot afford to eat all three meals a day. In a good day, we can afford two meals, but mostly we eat once a day.

Furthermore, a beneficiary responded that:

I cannot afford nutritious food because they are very expensive. Buying chicken is very costly for me. I do not have that kind of money. At least we try to eat three meals

a day but not expensive foods. We eat beans, millet, cassava, sweet potatoes and posho, but things like rice, milk, beef, eggs, or bread, we just see them as luxuries.

In addition, a beneficiary pointed out that:

I can afford nutritious foods because I and my husband both work. My husband works with the government, he is a secondary school teacher while I operate a small business salon. We still have only two children and the responsibility is not much. At least we are able to afford good food and even throw some if we get defeated to eat them.

The above responses imply that majority of the people in Rulindo district are still poor to afford nutritious foods. This implies that most of them are likely to be vulnerable to sickness due to poor feeding.

The researcher also asked the respondents this question: “Are you able to afford hospital bills if you or your family members fall sick, if not, why?” Most of the responses indicated that they donot have the capacity to afford hospital bills. Their reasons were summarized as below:

A middle class woman said:

The hospitals around here are very expensive. You have to consult, test, get diagnosed, buy medicine and then treated. However, this becomes too much for a common person. Some of them have decided to try elsewhere. Others have decided to buy drugs from small drug shops in their surroundings and the results have been catastrophic since most drugs are operated by unqualified medical workers.

Another informant pointed out that:

I prefer using traditional medicine if the sickness is not at its advance stage. Hospitals and clinics are expensive to afford.

Furthermore, a key informant indicated that:

I cannot cope with the hospital bills because if you get admitted and spend even one night, the bill increases greatly. I prefer at least using local homemade remedies for simple diseases such as cough, cold, flu, headache, stomach and skin rushes.

From the above response, it is evident that most people in Rulindo district cannot afford medical bills for various reasons, but the most significant reason is poverty.

Similarly, the researcher asked the key interview informants this question: “What kind of personal assets do you have (e.g. land, houses, animals etc.)?” Their responses were deduced by the researcher that majority of the people in Rulindo district owned mostly bicycles, animals, houses and a few owned land, and cars. This implies that the people are still susceptible to vulnerability in case of a sudden natural calamity or disaster because they do not have the ability to sustain themselves for lack of reasonable assets.

Furthermore, the researcher asked the key interview informants this question: “Are you often allowed to vote for the leader you want in your community, if not, why?” The people responded that they are allowed to vote as long as one is 18 years of age.

The above response shows that the most fundamental right citizens have in a democracy is that which allows citizens to choose their leaders. Constitutional right to vote gives citizens a powerful tool with which to vote their political leaders, as well as not to vote those who may not represent their interests or aspirations. Besides, not only does the Constitution provide a right to vote, but also enunciates government obligations to facilitate citizen participation in election of their leaders. A stand-alone right to vote is an international standard in democratic constitutions. In fact, a majority of the world’s democratic constitutions have articles or clauses outlining citizens’ entitlement to choose their representatives at all levels of government.

In addition the researcher asked the respondents this question: “Can you take a case to court and you are heard, if not, why?” The responses from the key informants indicated that they can take a case to court and be heard. However, some of them also reported that some cases

are disposed off due to high level of corruption in the Judiciary. Rich people will often bribe their way out of a situation and leave the less privileged to suffer.

Furthermore, the researcher asked the key informants this question: "How, do you feel about yourself (e.g. happy, lively, sickly etc.)?" Their responses were summarized as below:

A female Informant responded that:

I have been good and friendly to different people....my attitude has been good and most of the times I feel happy.

A father had had this to say:

Indeed I have been just like this...I just don't know the way life is treating us... sometimes no food, sometimes no money....it's hard to raise five children. I'm sad and sorrowful most of the times. I'm worried of my children's future.

A business lady who doubled as a farmer had this to say:

Somehow when I harvest my crops and get a good sale, I buy what makes me happy...like fish...or meat ,...hmm.... but sometimes drought dries the crops and you can have nothing to sell or eat, so life becomes very hard.

A young girl of university age indicated that"

I love going to visit my friends and chat with them and talk about the future, politics, marriage, football and the other things....i feel good with my friends andSometimes, I miss them.

An orphan boy pointed out that:

I lost my parents in the genocide when I was only 7 years, so life has never been very easy for me...I could not finish my primary because there was no money.....life is not easy, that's what I can tell you....i feel so lonely and downcast....but I must survive anyway.

A working class woman responded this way:

Ever since my children went back to school, I have been feeling peace and having time to relax a bit...I feel free from pressure,.....i am just happy these days.

The above responses signify that the quality of life of the people of Rulindo district is mixed with some people happy, a fraction of them sad and depressed and others unsatisfied with what life is offering them.

Finally, the researcher asked this question: “Do you think you have enough money to support your family, if not, why?” Most of the responses indicated that they do not have enough money to support their families. The reasons given were summarized as below:

A key informant had this to say:

I do not have enough money because I do not have a good job that earns me reasonable income. I am a business man and there are too much expenses incurred including taxes, rent, electricity and payment of workers. At the end of the day I remain with very little just to maintain the business and save little to support my family.

Another indicated that:

Im not employed because I do not have a formal education. Sometimes I get small labour jobs within the community but the money is so small that I can barely meet my family needs.

Another informant added:

Money can never be enough.....but so far what I earn can help me manage life with my family.....i can buy for them food, take the children to school and also pay rent.....just like that.

Similarly, an informant indicated that:

Im still poor but of course not so poor....but sometimes when I do not get money, we sleep hungry.....i feel bad but I only keep praying that one day I'll get a better job than this one.

Furthermore, another participant indicated that:

To some extent my income has increased.....i can afford what I want and buy for my family whatever they want.....life is not so bad like five years ago.....at least I'm earning something fairly enough for me and to support us at home.

The above responses imply that some people can afford to support their families with the money they earn, while others can hardly do that. It implies that the education level of most people is still so low to earn them decent jobs, at the same time it could point out the lack of industrialization in the district that can afford even the uneducated at least manual jobs.

4.5 The Challenges Encountered During the Implementation of Water For People Projects in Rulindo District

The third objective of this study was to analyze the challenges encountered during the implementation of water for people projects in Rulindo District. The questions were addressed to key informants' interviews such as project officials, opinion leaders and local leaders in face-to-face interviews. The researcher specifically asked the question: "What challenges have you experienced during the project's implementation?" Their responses were summarized as below:

A project official indicated that:

It was difficult to mobilize the beneficiaries and get them involved at an early stage of the project, especially women were reluctant to join and take up positions in the project because of local beliefs, customs and opinions that they are inferior, a notion they have accepted unconsciously. Some women also discouraged their fellow women from taking part in the project.

Another project official added that:

Most of our projects have been affected by the unwillingness of the local community to participate in the maintenance of facilities such as public taps, boreholes and spring wells. Most of them after getting technical problems, the communities shun them and look for other sources of water elsewhere.

The project manager was quoted as saying:

The projects are progressing well, only that sometimes funds delay, hence, delaying the different phases of the projects and affecting coverage.

One local leader indicated that:

We have trouble with the local politicians, they are always interfering with project activities and this is not good for business.....in one case, they mobilized the local community to protest the compensation that was to be given to the affected people because their land would be used for the project purposes.

In addition, an opinion leader indicated that:

This country still faces challenge of institutional framework where there is a lot of bureaucracy....before a simple procurement supply and logistics is approved for the water project, a lot of government officers must append their signatures, hence causing a lot of delays.

The above responses imply that the government and the local politicians should make sure they work hand in hand with the donors, project managers and the members of the community in order to ensure smooth running of the project and its successful completion and implementation. However, for water services to be sustainable, local leadership is key. Without it, communities like Rulindo District, would not be able to count on water that would flow for generations to come.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the research findings and draws conclusions and recommendations. The conclusions are made based on the research findings and the challenges revealed by the study, while recommendations include suggested solutions to the revealed challenges.

5.1 Discussions

5.1.1 How Water for People Projects have Provided Safe Drinking Water and Improved Sanitation Facilities for the People of Rulindo District

The first objective was to analyze how Water for People Projects have provided safe drinking water and improved sanitation facilities for the people of Rulindo district. The study revealed that the main source of water for the people of Rulindo district was spring water, followed by boreholes and lastly piped water. This is because spring water and boreholes are the cheapest one sources that have the potential of serving very many people within the community. Furthermore the study found that due to the activities of the Water for People projects, water distance had tremendously reduced to an average of 2km. This implies that access to clean and safe water is evident within such a short distance.

African women and girls often walk over six kilometres per day, spending many hours, to collect 15 to 20 litres of water. For girls, this severely limits the time for attending school. According to World Bank Report (2012), in Morocco, the Rural Water Supply and Sanitation Project, supported by the World Bank and covering six provinces, found that girls' school attendance increased by 20 % in four years, attributed in part to the fact that girls spent less time fetching water. Moreover, improved access to water reduced the time spent fetching water by women and young girls by 50-90%.

This implies that access to safe drinking water is a basic human right and essential for achieving gender equality, sustainable development and poverty alleviation. In particular it is essential to free women and girls from spending long hours fetching water. Water points

nearer the home reduce the distance women have to walk, thus allowing time for other activities, including childcare, food production and income generation. The United Nations Committee on Economic, Social and Cultural Rights, in General Comment 15 on the right to water, adopted in November 2002, states: “The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.”

In Rwanda, through the implementation of *Everyone Forever* in Rulindo district, Water For People-Rwanda is increasing access to safe water and establishing the sustainable environments that support water infrastructure. Through multi-year commitments with district governments, partners are investing financial and technical resources to reach Everyone. According to a report by Water for People (2016), in Rulindo districts, there is program that focuses on water system management and appropriate tariffs that are affordable and allow for cost recovery and technical support to ensure water infrastructure is repaired when needed and replaced when required.

Furthermore, the study established that most of the people in Rulindo district mostly boil and filter water to ensure that it is safe for drinking and other domestic use. This is because water boiled before drinking is one of the recommended practice by health officers especially in the third world countries where their source of drinking water is not safe and sometimes the causes for some incidence of common illness for children.

According to WHO Report (2014), those living in the remote areas, in the farms and far flung barrios are the number one victims of these infectious diseases of catching water-borne diseases because of drinking unsafe water. To ward-off the impending occurrence of water-borne diseases, boiling drinking water is the safest way. Study by Telmo (2012) shows, that water boiled for three minutes kills bacteria, including disease-causing organisms and giardia cysts. However, boiling concentrates inorganic impurities such as nitrate and sulfates. Water that undergoes heating process also tastes flat because the carbon dioxide is removed.

Furthermore, the study established that majority of the people practice good sanitation measures because of the education and training they received from the Water for People

program. This is because Water For People-Rwanda is working with a partner organization to sensitize households to the need for improved sanitation services through household meetings, hygiene and sanitation campaigns, and support of community hygiene and sanitation clubs. These activities led to the construction and rehabilitation of hundreds of latrines in 2015 in Rulindo.

5.1.2 The Social Development of the People of Rulindo District As a Result of Water For People Projects

The second objective was to analyze the social development of the people of Rulindo district. The study found out that majority of the people in Rulindo district cannot afford nutritious foods, hospital bills for their sick or school fees for their children. Very few have valuable assets which make them capable of supporting their families. This implies that the level of poverty is still high in the district and therefore much is yet to be done since majority of the people are still susceptible to vulnerability. According to Chambers (1989), vulnerability occurs when a person is unable to wade himself/herself off risks, shocks, and stress to which an individual is subject to; and defenseless, meaning a lack of the means to cope without damaging loss. Loss can take many forms-becoming or being physically weaker, economically impoverished, socially dependent, humiliated or psychologically harmed.

Scoones (2009) points out that poor people are often forced to live very precariously, with no cushion against the adverse effects of the vulnerability context; their livelihoods are, to all intents and purposes, unsustainable. For such people, reducing their vulnerability to the downside and increasing the overall social sustainability of their livelihoods may well take precedence over seeking to maximize the upside.

Furthermore, the study found out that majority of the people of Rulindo district do not have enough financial resources to support their families, hence, facing the problem of social exclusion and poverty. According to Cleveland and Garry (2012), well-being describes the life satisfaction of people, and is partly a function of a person's ability to make choices and live the type of life that they want to lead. They state that well-being is not simply about access to income and resources. It is also related to health, education, social, cultural,

environmental and political outcomes. In his opinion, Almedom et al., (2013) adds that water projects are intended to promote and enhance the wellbeing of the people so as to make them feel safe and healthy. This is because the dismal situation created by inadequate access to water and sanitation services can easily cause health concerns in a community. The authors note that the health benefits of an improved water supply can be destroyed overnight if people are forced to revert to contaminated sources when the public supply fails (Almedom et al., 2013).

5.1.3 The Challenges Encountered During the Implementation of Water For People Projects in Rulindo District

The third objective of this study was to analyze the challenges encountered during the implementation of water for people projects in Rulindo District. The study revealed that most of the challenges faced by the water for people projects included political interference, lack of funding, sustainability issues and poor institutional framework. It should be noted that most Water For People projects used to take longer than expected to be implemented and several causes have been behind such delays. However, despite the effort of the government to mitigate the projects mismanagement, many projects are still having problems related to their management. Different people have argued that most projects implementation delays result from financial resources diverted to different projects, others have blamed capacity and professionalism of local and regional contractors and others have questioned the credibility of project planners and managers. Considering these arguments from different people including opinion leaders and local leaders, it has been thought that all of them are justified since these arguments are interrelated and all of them affect the Water for People projects performance.

5.2 Conclusion

The study found out that the major sources of water in Rulindo district are spring, boreholes and tap water. People are also able to ensure that their water is safe through boiling and filtering. The distance to water sources has been reduced due to Water for People project. As for sanitation, people are aware of proper dumping methods, hygienic practices such proper

use of toilets, hand washing, food handling due to education and training provide by Water for People Program.

However, the socio-economic status of most of the people in Rulindo district is unappealing due to the high level of vulnerability. The people do not have the capacity to afford nutritious foods, hospital bills, or educate their children. Due to poverty and lack of formal employment, most of them do not have valuable assets, neither can they convincingly support their families.

The study found out that water and sanitation projects affect social development status of the people in Rulindo District. This implies that having proper water and sanitation facilities through different projects can help promote access to clean and safe water and proper sanitary establishment which will help improve people's welfare. This is because, a household with better water and sanitary facilities will enable them to be less vulnerable to diseases and improve their wellbeing.

The challenges to Water for People projects have mostly been political interference, lack of adequate and timely funding and poor sustainability mechanisms.

5.3 Recommendations

The study provides the following suggested solutions with regard to the discussed challenges.

The local leaders should make sanitation and hygiene practices compulsory at the village, sector and district level where the communities are trained. This practice can be achieved by penalizing households that are found without pit latrines, or rubbish bins. The training can be done by respondents from the ministry of health on various topics such as boiling drinking water, proper waste disposal methods, general cleanness of the house, compound, plates, cups, clothes, saucepans etc.

There is need for NGOs and the district leaders to carry out research into appropriate and cheap technologies, aiming at a large-scale transition from traditional to hygienic latrines at

affordable cost to households. That is, instead of using wood as the latrine floor, slabs can be used as well as proper ventilation.

Furthermore, there is need for the management of the Water For People project to promote behavioral change and sensitize community members about water usage practices – such as cleaning and maintaining the water point, practicing good hygiene, and why it is important to clean water containers and boil drinking water.

The government and the donors should make sure there are sufficient funds to maintain and eventually replace the water points. In addition, Water For People personnel should educate the community about the importance of paying tariffs for water service. For example, through the committee selected by the local people, the people should be educated to take the water point as their own and know the importance of paying for water services. Such money can be used as contribution for the maintenance of the water point.

5.4 Contribution to Knowledge

This study established that water and sanitation projects are capable of promoting social development status in Rulindo district. Several studies were done in this area but the results were mixed. The new knowledge added by this study is that proper use of clean water for domestic consumption and practice of proper sanitation methods have the power to promote the wellbeing of the people.

5.5 Areas for Further Research

This study was done only in Rulindo District. However, the Water For People projects is implemented in three districts, namely: Gicumbi, Kicukiro and Rulindo. There is need for further study to be conducted in all the three districts for the generalization of the findings.

Furthermore, there is need for further study to be done on the involvement of the local community in water and sanitation projects and its impact on people's welfare.

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APPENDICES

APPENDIX I: FOCUS GROUP DISCUSSION QUESTIONS

NB: For beneficiaries only

Part A: General Information

1. Mention your gender
2. Mention your age
3. Mention your education level
4. Mention your employment status
5. Mention your monthly income

Part B: water and sanitation projects in Rulindo district

1. What type of water source do you use (e.g. piped water, spring water, tap water, borehole, stream water etc.)?
2. How far is the water source from your home residence?
3. How do you ensure that the water is safe for drinking (e.g. through boiling, filtering etc.)?
4. What sanitation facility do you use at your home (e.g. flush toilet, pit latrine etc.)?
5. Where do you throw your rubbish (e.g. in the bin, bush etc.)?
6. What hygiene education practice did you receive during the sanitation training in your community?
7. Generally, how have you benefited from the water and sanitation project in your community?

Part C: Social Development in Rulindo district

1. Can you afford nutritious food on a daily basis, if not, why?
2. Are you able to afford hospital bills if you or your family members falls sick, if not, why?
3. Are you able to afford the school fees for your family members, if not, why?
4. What kind of personal assets do you have (e.g. land, houses, animals etc.)?

5. Are you often allowed to vote for the leader you want in your community, if not, why?
6. Can you take a case to court and you are heard, if not, why?
7. How, do you feel about yourself (e.g. happy, lively, sickly etc.)?
8. Do you think you have enough money to support your family, if not, why?

APPENDIX II: INTERVIEW GUIDE QUESTIONS

NB: Meant for key local leaders, opinion leaders and Project officials

Topic: Water for people project

1. Which water projects have been successfully completed and implemented in Rulindo district?
2. To what extent has Water For People Projects provided safe drinking water facilities for the people of Rulindo district?
3. What are the most common types of water sources used by the people of Rulindo district?
4. Where do most people of Rulindo district throw their rubbish?
5. What kind of sanitation facilities are commonly used by the people of Rulindo district?
6. How is sanitation handled and why?
7. What are some of the hygiene education programs pioneered by Water For People Projects?
8. How has the hygiene education program affected the people of Rulindo district in terms of sanitation?
9. What have been the general benefits of the water and sanitation projects to the people of Rulindo district?
10. What challenges have you experienced during the projects implementation?

The End



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193

2018