

**NATIONAL WATER POLICY (2002) IMPLEMENTATION AND THE
ACCESSIBILITY OF DOMESTIC WATER SUPPLY IN SANGASANGA,
LUBUNGO AND MAFURU VILLAGES IN MVOMERO DISTRICT**

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ACCESSIBILITY OF DOMESTIC WATER SUPPLY IN SANGASANGA,
LUBUNGO AND MAFURU VILLAGES IN MVOMERO DISTRICT**

BY

Malboard Mathew Kapinga

**A Dissertation Submitted to the Institute of Development Studies In Partial Fulfilment
of the Requirements of the Master's Degree in Development Policy (MSc – DP) of
Mzumbe University**

2015

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommended for acceptance by the Mzumbe University, a dissertation entitled **National Water Policy (2002) Implementation and the Accessibility of Domestic Water Supply in SangaSanga, Lubungo and Mafuru Villages in Mvomero District** in Partial Fulfilment of the Requirements for award of Degree of Master of Science in Development Policy (MSc. DP) of Mzumbe University.

Major Supervisor

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Acceptance for the Board of the Institute of Development Studies

DIRECTOR, INSTITUTE OF DEVELOPMENT STUDIES

DECLARATION

I, Malboard M. Kapinga, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature _____

Date_____

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DEDICATION

I would like to dedicate this work to my dear late parents Mathew Luwindo Kapinga and Mrs Costansia Mathew Kapinga. Both encouraged me to get education, the key to success in life. I also dedicate this work to my wife Elizabeth J. Kasimila for her tireless moral support during my study period.

LIST OF ABBREVIATIONS

CIPP	-	Context, Input, Process, and Product
Dps	-	Domestic points
DWE	-	District Water Engineer
GPRA	-	Government Performance and Results Act
LGAs	-	Local Government Authorities
MDG	-	Millennium Development Goals
MORUWASA-		Morogoro Urban Water Supply and Sanitation Authority
MSc-DP	-	Master of Science – Development Policy
MU-	-	Mzumbe University
NGOs	-	Non- Governmental organizations
NPM	-	New Public Management
NSGRP	-	National Strategy for Growth and Reduction of Poverty
O&M	-	Operations and Maintenance
PAF	-	Performance Assessment Framework
RWSN	-	Rural Water Supply Network
UN	-	United Nations
URT	-	United Republic of Tanzania
VEO	-	Village Executive Officer
WEO	-	Ward Executive Officer
WHO	-	World Health Organization

ABSTRACT

This study aimed at assessing the implementation of the National Water Policy (2002) in Mvomero District. The main objective of the study was to assess the extent to which the implementation of National Water Policy (2002) had contributed to accessibility of rural domestic water supply in Mvomero District. In order to achieve the assessment the study had four objectives as follows; The first objective examined the context in which the water policy is implemented. The second objective assessed the availability and adequacy of infrastructures. The third objective was to establish the nature and the extent of community involvement in the water policy implementation. The fourth objective was to determine the level of satisfaction of consumers. The research used cross-sectional design. Data collection was through face to face interviews, questionnaire, site observation and documentary review. The sample size was 120 involving 105 household heads and 15 key informants. Quantitative data were analysed using Statistical Package for Social Scientists (SPSS). Qualitative data were analysed by using content analysis. The results were presented in tables, charts, and figures. The findings for the first objective showed that the condition of water source was very bad, community awareness on the implementation of the National Water Policy (2002) was very poor, average distance to collect water for domestic use for the majority was between 400 and 1000 meters and there was frequent occurrence of water borne diseases such as diarrhoea due to lack of water treatment caused by wrong traditional beliefs. As for the second objective the findings showed that there were no sufficient and adequate water infrastructure in the study area. With regard to the third objective findings showed that there was negative community response to contribution in kind and cash for maintenance and running of water infrastructures. The findings for the fourth objective showed that the community in the study area was not satisfied with water supply services. Overall, the findings show that the implementation of the National Water Policy (2002) in the study area has not been fully achieved. The study recommends as follows: First, local the government should explore ways of utilizing Mindu dam which is close to the study area. Secondly, the local government should see how to collaborate with Mzumbe University to expand its water infrastructure so as to supply water in the study area. Thirdly, the

government should increase water budget in LGAs. Fourthly, there is a need of raising community awareness on the importance of treating water.

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CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter provides an overview of the problem that was investigated. It presents six parts which are: background to the problem, statement of the problem, research questions, and objectives of the study, significance of the study as well as limitations of the study.

1.2 Background

According to UN (2010), progress on the MDG 7 target '*to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015*' shows that the rural areas in developing countries across the world remain severely disadvantaged. Furthermore, it shows that with eight out of ten people not having access to an improved water supply and only 47% of the rural population of sub-Saharan Africa have access to an improved water source (UN, 2010).

The challenge of rural domestic water supply is jeopardizing progress. It is estimated that only two out of three hand pumps installed in developing countries are working at any given time (Rural Water Supply Network, RWSN, 2010). Without services providing a sustainable water supply, the number of people with access to an improved water supply will fall, and the achievement of MDG 7 will be compromised. Despite overall progress in drinking water coverage and narrowing of the urban-rural gap, rural areas remain at a disadvantage in all developing regions. The largest disparities are in Oceania and sub-Saharan Africa. The significant differences between urban and rural areas are found even in regions that have achieved relatively high coverage, for example, Western Asia and Latin America and the Caribbean (UN, 2010).

Despite significant investment in the water supply services in Tanzania since the early 1970s, water supply coverage is not satisfactory (URT, 2002). This is due to poor operational and maintenance arrangements, over 30% of the rural water schemes are not functioning properly (URT, 2002). According to the Water point Mapping inventory that was conducted by the Ministry of Water from December 2011 to February 2013, Mainland Tanzania has a

total of 75,777 water points. Out of the total, 46,697 (62 percent) are functioning and 29,080 (38 percent) are not functioning (URT, 2013). The water sector is obliged to rehabilitate malfunctioning water schemes and construction of new water supply schemes in rural settlements. The overall access to clean and safe water supply services provided by all water points in rural areas stood at 57 percent in December 2012. This is compared to the target of 60 percent set as an annual target by water sector PAF outcome indicators (URT, 2013).

Mvomero District is rural in nature and fits into the expected water statistical data presented above. Within the area, the implementation of the 2002 National Water Policy is in progress. However, URT (2013) shows that the average distance travelled by people in the study area to water points is one kilometre and access to clean and safe water stood at 53%.

1.3 Statement of the problem

The study was done due to social need that exists as the national water policy has addressed in the selected policy issue. Among others the furthest distance that the people have to travel seeking domestic water supply should be 400m, likewise the minimum consumption of water per person per day should not be less than 25litres and one domestic water point has to serve not more than 250 people. The policy statement is already in the mind of all community in Tanzania including the area of study. Thus, having noticed the difference in real implementation it was inevitable to conduct this study in order to find the gaps that have to be filled to meet the social need.

Several studies on water supply have been carried out. Jansz (2011), for example, focused on the issues regarding water supply sustainability in Mozambique. Abebaw, Tadesse, and Mogues, (2011) conducted a study on improved water sources and satisfaction of water provision services in Ethiopia. The World Bank (1993) water demand research team also conducted a study on the demand for water in rural areas: determinants and policy implications. Apart from the studies conducted by various researchers to-date still there is limited evidence of studies which have assessed the effectiveness and efficiency of implementation of the National Water Policy in the study area. Evidence on the link between water policy implementation and access to domestic water supply had not been explored in the study area.

Therefore, this study sought to assess the implementation of national water policy (2002) focusing on one of the policy issues concerned with domestic water supply minimum service level. The study aimed at coming up with appropriate recommendations to the government and other related water provision authorities for necessary decision making.

1.4 Objectives of the study

1.4.1 General objective

The overall objective of the study was to assess the extent to which the implementation of National Water Policy, 2002 has contributed to accessibility of rural domestic water supply in Mvomero District.

1.4.2 Specific objectives

In order to accomplish the above overall objective, the study focused on the following specific objectives:

- i. To examine the context in which the water policy is implemented in Sangasanga, Lubungo and Mafuru villages
- ii. To assess the availability and adequacy of infrastructure put in place for domestic water supply in the study area
- iii. To establish the nature and the extent of community involvement in the water policy implementation process.
- iv. To determine the level of satisfaction of consumers in the selected villages.

1.5 Research questions

The major research question was that: To what extent has the implementation of national water policy 2002, contributed to the accessibility of rural domestic water supply in Mvomero district.

The study was guided by the following specific research questions:

- i. What is the context in which the water policy is implemented?
- ii. How are the availability and adequacy of infrastructure put in place for domestic water supply?

- iii. How is the nature and the extent of community involvement in the water policy implementation process
- iv. What is the level of satisfaction of consumers in the selected villages

1.6 Significance of the study

The government is the key player in formulating various policies including the national water policy. The findings of this study will help the government through various actors like politicians, and other policy entrepreneurs formulate appropriate and deliberate plans. The plans that enable effective and efficient implementation of the same and realize anticipated results for sustainable development of all citizens of Tanzania. Moreover, the findings are expected to reveal the strengths, weaknesses and challenges of the implementation of National Water Policy (2002) for improvement purposes where applicable in all districts. The findings of this study stimulate other researchers to conduct further studies and come up with more relevant recommendations on effective implementation of the national water policy (2002).

1.7 Limitations of the study

The limitations encountered during the course of this study were mainly two namely, financial constraint and poor attendance by the respondents. As far as financial constraint is concerned during the study some of the respondents were not ready to provide information for the related study as they demanded remuneration in terms of cash payment first. They believed that the study conducted was benefitting the researcher and not themselves. The researcher solved this problem by explaining to them that the study was for academic purposes only and did not focus for profit motive. Also, the problem of attendance for some respondents in some sub-villages was realized. The solution to that problem was to spend more time to wait for the respondents and re-scheduling of the time table that led to use of more time and cost.

1.8 Organization of the Study

The dissertation is structured into five chapters. The first chapter covers Introduction that has seven sections namely: Overview, the background of the problem, statement of the problem, research questions, objectives of the study, It also includes significance of the

study and limitation of the study area. Second chapter discusses the review of related literature on National water Policy (2002) implementation. Third chapter describes the methods used to conduct the research. Chapter four presents the findings and discussion, while chapter five presents the summary, conclusions and recommendations as well as areas for further study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents the review of related literature in order to support the findings of the study through theoretical and empirical literature. Under theoretical literature the chapter starts by defining concepts and terms of policy, water policy, policy implementation, and the accessibility of domestic water supply. In empirical literature it covers the objectives of the related studies, methodology used as well as key findings.

2.2 Theoretical literature Review

2.2.1 Policy process, implementation and evaluation

The disciplines of public administration and policy sciences do guide the study of policy implementation (De Groff, & Cargo, 2009). The policy process under stages heuristic framework has conceptualized policy implementation in step five while evaluation is step six (Brewer, 1974; Jenkins, 1978; Laswell, 1956). Implementation and evaluation are characterized as two separate stages in this process. Through implementation the experience is provided that evaluation interrogates. Evaluation is providing the intelligence to make sense out of what is happening and assesses whether the intended outcomes have been or not met (Pressman and Wildavsky, 1984).

2.2.2 Definitions of key terms

The terms that are to be defined include: policy, policy implementation and accessibility of domestic water supply. These terms are key to this study that enable clear understanding of what was intended as far as this study is concerned.

Policy is a set of interrelated decisions concerning the selection of goals and the means of achieving them (Jenkins, 1978). According to Hill, (1993) 'policy' is defined as the product of political influence, determining and setting limits to what the state does. For further

clarification, when a government takes a decision or chooses a course of action in order to solve a social problem and adopts a specific strategy for its planning and implementation, it is known as public policy (Anderson, 1975).

According to Ottoson and Green (1987) suggest that “**Policy implementation**” is an iterative process in which ideas, expressed as policy, are transformed into behaviour, expressed as social action”. The social action transformed from the policy is typically aimed at social betterment and most frequently manifests as programs, procedures, regulations, or practices.

Accessibility of domestic water supply

In this study accessibility means the quantity of water delivered and used for households. Accessibility influences hygiene and therefore public health, distance and time used but also reliability and potentially cost (Bartram, 2003).

2.2.3 The guiding theory

The guiding theory in this study is Policy implementation theory (De Groff, and Cargo, 2009). Theory development began with the landmark case studies of the early 1970s (Derthick, 1972; Pressman and Wildavsky, 1973), which documented the challenges and complexities of bringing a policy to fruition in real-world circumstances.

This theory recognizes three factors that play an important role in today’s policy implementation process and its evaluation namely: **networked governance, socio-political context and the democratic turn, and new public management.**

For the networked governance, the policy theorists recognize that implementation involves coordinating action across multiple organizational actors and implementers (O’Toole, 2000). Evaluating policy implementation in a networked governance context poses several challenges given that complex social problems are usually addressed, accountability becomes fragmented, and the performance of the network itself is important to implementation success. Socio-political factors play out at all levels of the policy implementation process. Implementers ‘decisions about whose needs will be served, how they will be served, and which outcomes will be valued are determined in part by social and political factors. (Bardach, 1977; Chung, and Lounsbury, 2006).

New public management (NPM), a global, public management reform that emerged in the early 1990s, advocates, in part, outcome-based performance. In fact, performance is so central to NPM that it has been called “results-oriented government” (Osborne & Gaebler, 1992,). Performance, as measured through outcomes rather than outputs, is emphasized in NPM as a means to assess management and policy effectiveness, as well as a means of accountability (Peters, 2001).

The validity of these factors in this study is as follows. For the networked governance: The study investigated various institutions that either in partnership or in isolation participated in putting in place the water infrastructures and other water provision services. This gives answers whether the public- private partnership concept has been met in Tanzania. For socio-political factor: The study identified socio- political factors affecting the policy implementation process. Consideration was on who has a stake in shaping implementation and which stakeholders have the power to define both program details and their outcomes. The study investigated the relationships and interactions among organizational actors.

For New Public Management: The study sought information on the accessibility of domestic water to the selected villages in relation to concept of results based. The water infrastructures in place and water provision services are supposed to be outcome based and not only output based. For example healthy issues were among the concern that whether or not the potable water is suitable as far as healthy of the respective community is concerned. Issue of interaction of top down and bottom up approaches in water policy implementation was also dealt with by this study.

2.3 Empirical Literature Review

Jansz (2011) reports a study on rural water supply sustainability by Water Aid in Niassa province, Mozambique. The study was carried out due to the fact that over half of the rural population of Mozambique still did not have access to safe Water like in Tanzania according to official data from 2008 (Water Aid in Mozambique, 2010). The objective of the study was to overcome the challenges by investigating the key factors that affect rural water supply sustainability in Mozambique. The study used a qualitative methodology to explore the situation on the ground.

The key findings and recommendations obtained were: The Mozambique government had no strong collaboration with other stakeholders in implementation of its policies. It was recommended that it should work together under partnership with other stakeholders like Water Aid for effective implementation of the National Water Policy. Moreover findings of the study revealed that capacity in terms of knowledge and understanding of principles of sustainability was weak. Thus, it was recommended that should be improved where possible across local stakeholders and government at appropriate level (Carter, 2010)

Abebaw, Tadesse, and Mogues (2011) reports also a study on “Access to improved water source and satisfaction with services” in rural Ethiopia. The main objective of the study was to examine the sources of drinking water used by people in remote rural localities. Investigation on whether access to an improved water supply has increased users’ satisfaction with quality and availability was also another objective. The methodology used was quantitative approach where by survey data collected in 2009 from 1,117 rural households residing in eight districts were used. Regression analysis was applied to explain the effect of access to an improved water source on users’ satisfaction with the quality and availability of water. The key findings of the study were as follows.

First, improved water sources increased users’ satisfaction with both quality and quantity of drinking water and viceversa is true. However, household satisfaction with the availability is lower than satisfaction with quality. Second, access to improved water sources is limited and surface water obtained from rivers, lakes and ponds, seasonal streams and spring water is the major source of drinking water for about 58% of the households. Third, Women and children are responsible for fetching water in more than 90% of the sample households. The results imply households’ perception of the need for improved drinking water services. Likewise, they show that demographic, socio-economic, and location characteristics have strong influence on household access to an improved source of drinking water in the study area.

The World Bank Water Demand Research Team in 1987-90 reports a study on the demand for water in rural areas: Determinants and Policy implications in selected regions of Latin America (Brazil), Africa (Nigeria , Zimbabwe, Tanzania), and South Asia (Pakistan and India) (The World Bank, 1993).

The main objective of the study was to realize that effective policy and planning must take into account what the rural clients want and are prepared to pay for. The focus was on households' demand for improved water services. The research team used both direct surveys and indirect methods to estimate households' willingness to pay for different levels and types of improvement. The multivariate analysis of water use in respective selected areas for the study was used.

Household's willingness to use, or to pay for, an improved water supply is influenced by the following factors. The socio-economic and demographic characteristics of the household, likewise the characteristics of the existing or traditional source of water versus those of the improved water supply, including the cost both financial and in time required to collect water, the quality, and the reliability of the supply and households' attitudes toward government policy in the water supply sector and their sense of entitlement to government services.

The summary of the findings of the research in terms of three sets of determinants delineated above, are as follows. Overall, the findings suggest that household income, although often important, is not the overriding determinant of demand for improved services and empirical results generally confirm that better educated households are willing to pay more for improved water supplies. However, the gender of the respondent appears to be an important influence in households' expressed willingness to pay for improved services, but the direction of that influence depends on the specific cultural context, as in many cultures women do not have equal control over or access to the household's cash resources. Furthermore, the study findings showed that most households were spending 6-10 percent of their income annually buying water from vendors and not from the public taps due to unreliability of the government provision of water services.

Policy Implications were as follows. High willingness to pay for private connections but low willingness to pay for public taps was observed from rural communities in Southeast Asia, South Asia, Central and Latin America, and North Africa. A few will pay the full costs of private connections but the majority will pay the full costs of public taps as was observed in Nigeria, and poorer communities in Asia and Latin America.

Households are willing to pay for improved Service, but improvement is very costly as was realized in Pakistan and Newala district in Tanzania. Low willingness to pay for improved water service was observed in central Zimbabwe.

Ademun (2009) reports a study on “Domestic water supply: an evaluation of the impacts; challenges and prospects on women in rural households in Uganda.

The main objective of the study was to analyse the impact of domestic water supply on disadvantaged members in the society especially women in rural households. The focus was on household water use and collection, water supply systems and technology, roles and responsibilities for investment in water sources, water problems, management and maintenance of water sources. Generally the study was expected to enhance gender equality in water service provision that would lead to sustainable development of water supply projects in Ugandan rural areas. The study employed multiple research methods, which were both quantitative and qualitative. Field data from two districts namely; Amuria and Rakai districts in Uganda was collected through use of questionnaires, observations, site visits; semi structured interviews and focus group discussions. Secondary data was obtained through a detailed literature review.

The summary of the findings of the study show that the needs not fulfilled are; improved water quality, quantity, distance, time , cost, technology and reliability of the water sources. Some initiatives and innovations were taken by women’s groups and community members in order to adapt to the prevailing situation like construction of rainy water harvesting tanks with carrying capacity of more than 200,000 litres by use of locally available materials at low costs, also use of water treatment methods for example ash used as cleanser for drinking water at household likewise, boiling water and use of chlorination. Not all households treat water before use. This is because the available treatment methods are limited and they are expensive. However, women lack decision making on planning, implementation and management of the current water supply projects. Therefore, knowledge about active participation and involvement of disadvantaged members in the society especially women is inevitable for gender equality and for the achievement of sustainable development of water supply in rural areas.

Gbadegesin and Olorunfemi (2007) likewise, report a study on Assessment of Rural Water Supply Management in selected rural Areas of Oyo state, Nigeria. The main objective of the study was to examine the extent to which stakeholders are willing and able to adopt and implement sustainable, cost effective and environment friendly management options for water resources in selected rural areas of Oyo state, Nigeria. The focus of the related study was on the social solidarities, and hence the ideological preferences of the stakeholders. Moreover, it focused on the manpower capacity building for water resources management and knowledge base about the socio-economic technological and ecological dimensions of water resources management.

The study used a combination of qualitative and quantitative methodology, including Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) with stakeholders as well as structured and semi-structured questionnaires. Appropriate policy and programme documents of government were collected and reviewed. Data analysis involved the use of both qualitative and quantitative statistical techniques.

The summary of the study shows that the level of provision of water in the rural areas is still very low although the 2000 National water supply and sanitation policy of Nigeria stated that government shall sponsor capital investments for rural water supply. Also it was revealed that there was lack of policy dynamism with the changing trends in the society that has continued to affect water supply provision in the state, rural areas been worse hit. Further, the study shows that the respondents are not too concerned about the quality of water as they are of the availability of the resource. Not only that but also even though the policies are in place especially at the federal level, the structures to implement it are either in place but not functional or completely absent. The study however, indicates that many people in the study area are not aware of any government policy on water supply provision and management either at the federal or state level. Therefore the issue of the stakeholders willing to adopt and/or implement government policies at present does not arise. It was also noticed that public- private partnership is there. Efforts by other partners other than the government for example the private sector and international donors like United Nations Children and education Fund(UNICEF) and the Japanese government assisted Oyo state water and sanitation (WATSAN) yielded significant results in the provision of potable water for the rural areas of the state.

The results are in terms of in kind and cash/financial contributions to water infrastructures. Maintenance of water infrastructures in some of the rural communities studied is still a major problem. Lastly, the study findings shows that the existing manpower development programme of government in terms of the level of manpower, involvement of stakeholders and learning process virtually non-existent.

WHO (2003), reports a study on Domestic Water Quantity, Service level and Health. The purpose of the study was to review the evidence of the relationships between water quantity, access and health and to provide a basis for the establishment of minimum quantity and/or access targets for domestic water supplies. The study that was done in Jinja, uganda drew on an extensive literature review primarily based on the published literature. In some cases the study was drawing on grey literature where the data was believed to be of good quality and where clearer information was provided.

The findings of the study among others were that the average water consumption per person per day from traditional sources, springs or hand pumps was 15.8litres, while from stand post was 15.5litres, from yard tap was 50 litres and lastly from house connection was 155 litres.

From the studies mentioned above, I have learnt that no researcher has conducted a study on assessment of implementation of Tanzania National Water Policy (2002). Knowledge gap is viewed from the fact that the minimum water service levels as stipulated in the National Water Policy (2002) have not been dealt with. The study eventually comes up with findings after assessing the implementation of National Water Policy (2002) in regard to accessibility of domestic water supply. The focus is on minimum service levels of 25 litres of potable water per capita per day, distance of 400m from a household to water point and each outlet serving 250 persons.

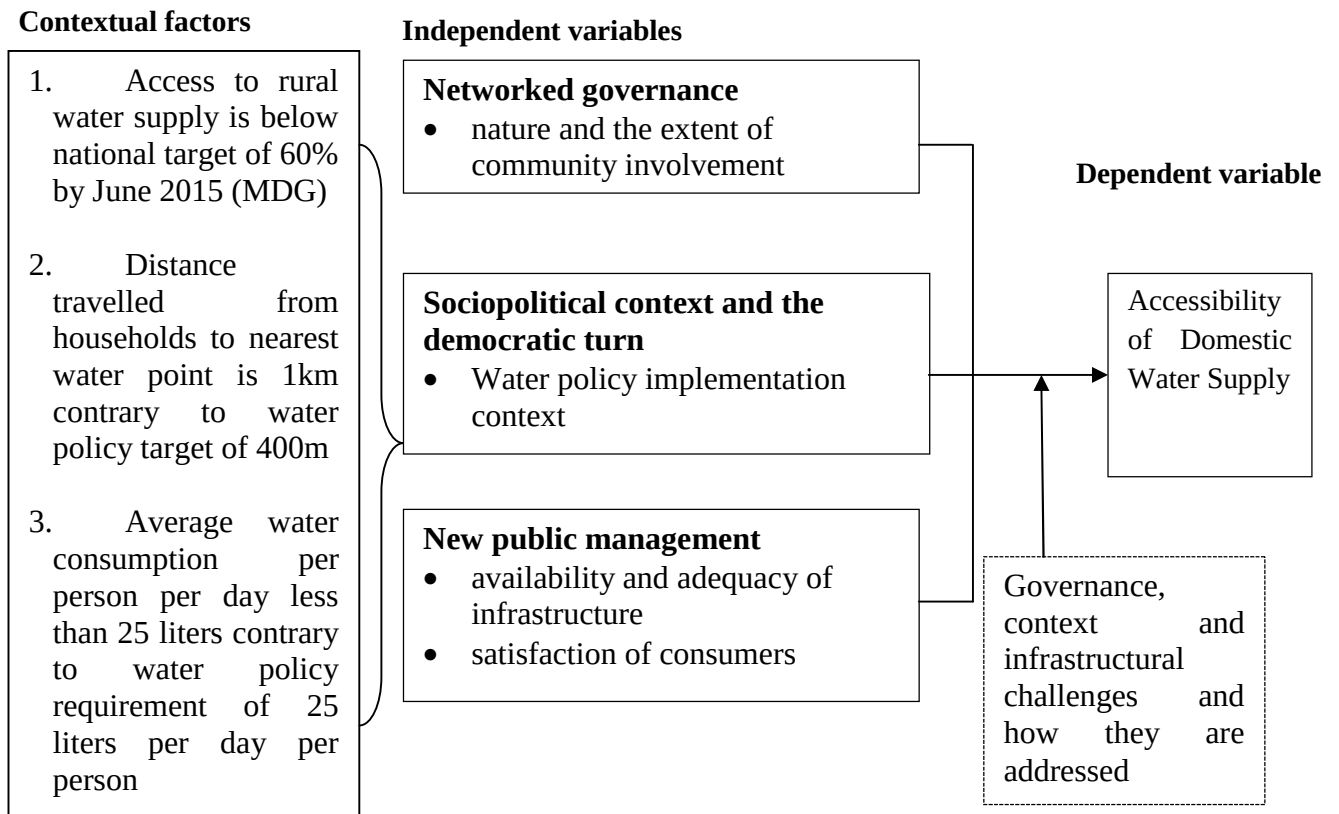
2.4 Conceptual Framework

The conceptual framework for the study is summarized in Figure 2.1 Accessibility of domestic water supply is conceptualized as a dependent variable. The researcher was motivated to carry out the study due to contextual factors that had been contained in the National Water Policy (2002) as minimum service levels that include distance travelled

from households to the nearest water point should not exceed 400meters, and average water consumption per person per day should not be less than 25litres were not fully achieved. Likewise, the target set in Millennium Development Goal no.7 that access to clean and safe water for rural areas should not be below 60% was also not attained. There is a direct relationship between the minimum service levels set in the National Water policy (2002), target of 60% in Millennium Development Goal no 7 and the accessibility of domestic water supply being dependent variable and vice versa. That is the more the contextual factors are met the more the accessibility of domestic water supply, the reverse is also true. Moreover, accessibility of domestic water supply conceptualized as a dependent variable is dependent upon three important factors which are independent variables. Such independent variables influencing domestic water accessibility include the networked governance, socio-political context and the democratic turn and lastly, the new public management.

For the networked governance nature and extent of community involvement is concerned. There is a direct relationship between collaboration of different actors in the implementation of National Water Policy (2002) and the accessibility of domestic water supply and vice versa. Another independent variable is the social political context which influences the accessibility of water. The more the socio-political environment is in favour of the Implementation of National Water Policy (2002), the more accessibility to domestic water supply to be realized and the reverse applies. Availability and adequacy of infrastructures also form a key part of the link to accessibility and influence of politicians who are law makers and conducive socio environment are inevitable in ensuring smooth accessibility to domestic water supply. Lastly, the influence of New Public Management is directly related to accessibility of domestic water supply and is very crucial as what is required is not only output but also, outcome and hence impact to the community for sustainable living conditions, The achievement of intended water accessibility will also depend on how governance, contextual and infrastructural challenges are addressed thoroughly.

Figure 2.1 Conceptual framework



Source: Author's Construct (2014)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes on the research approach, design and methods that were used to gather and analyse data for the study. It presents the overview of types of research design, study area, population, sample size and sampling techniques used, data collection methods and data processing, analysis and presentations.

3.2 Research Approach and Design

Both quantitative and qualitative research approaches were used in this study. The **qualitative** approach involved an enquiry process of understanding, based on distinct methodological concepts (Dahlgren, Emmelin and Winkvisk, 2004). In this study the qualitative approach was relevant as some qualitative information like satisfaction of water users in water services provision in the study area were required.

Quantitative approach was used for measuring the studied attributes/phenomena in terms of magnitude/level for example number/frequency, percentage, meter/kilometre and Tshs for example sources of water, water infrastructures and income levels.

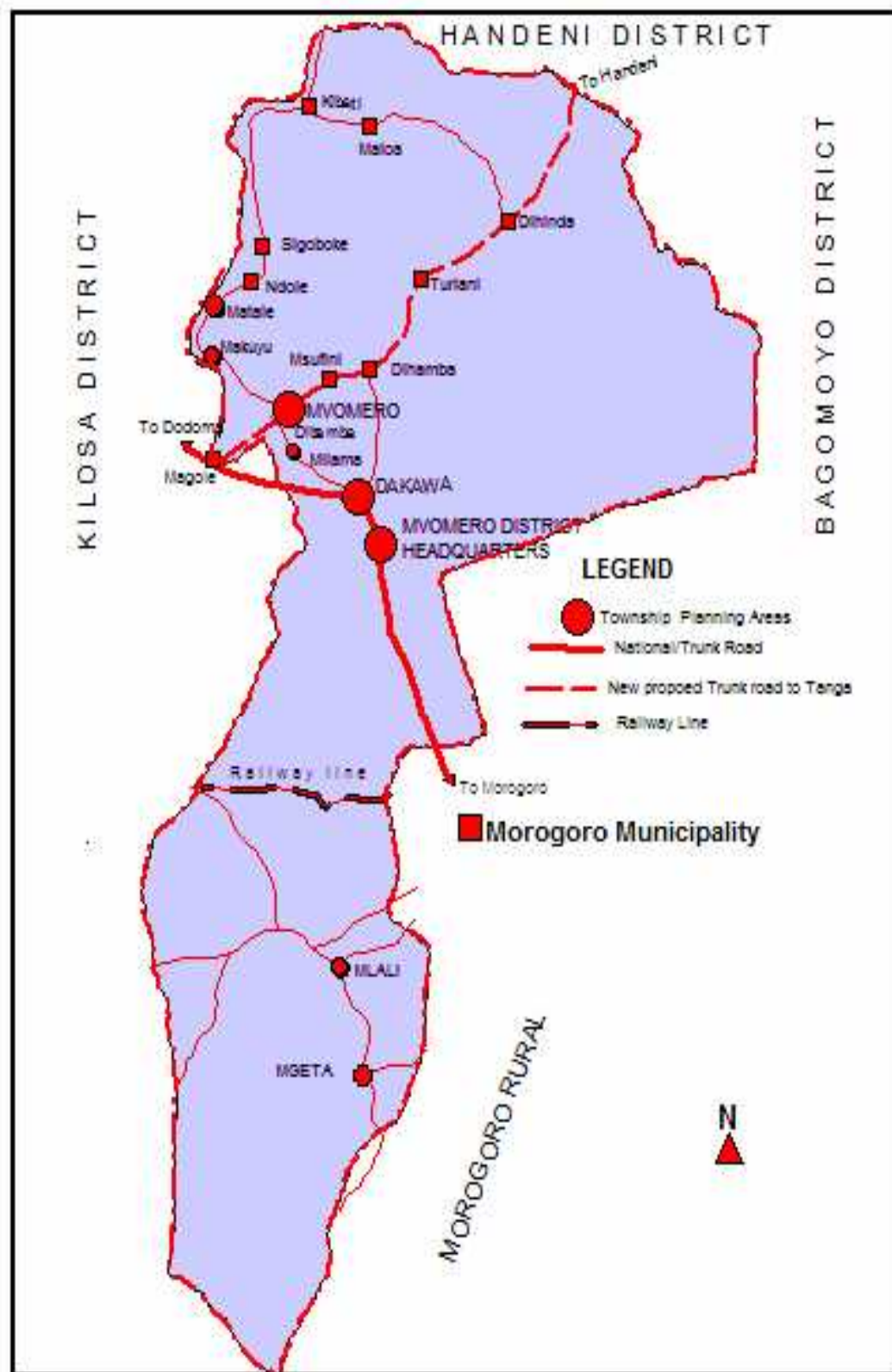
A cross sectional design was used in this study as the researcher carried out observations of a representative subset of all of a population in the selected villages at one specific point in time in July- August 2014 (Kothari, 2004).

3.3 Study Area

The study was carried out in Mvomero District at Sangasanga, Lubungo and Mafuru villages .Selection of the villages in the study area was done due to the fact that they are the most affected by problems of accessibility of domestic water supply (URT, 2013) Differences in levels of water services include aspects of storage capacity of the existing water infrastructures, non-availability of reliable sources for domestic water supply and water quality.

According to 2012 Population and Housing Census the population of Mvomero district Council was 312,109 people with annual growth rate of 2.4. The population for Mzumbe ward is 19,056 while that of the study area is 4,255 people. Access to clean and safe water within the distance not exceeding 400M is 53%. The average minimum walking distance is 1km from the household to located domestic water points (URT, 2013). See map of Mvomero district in figure 3.1

Figure 3.1 Map of Mvomero District



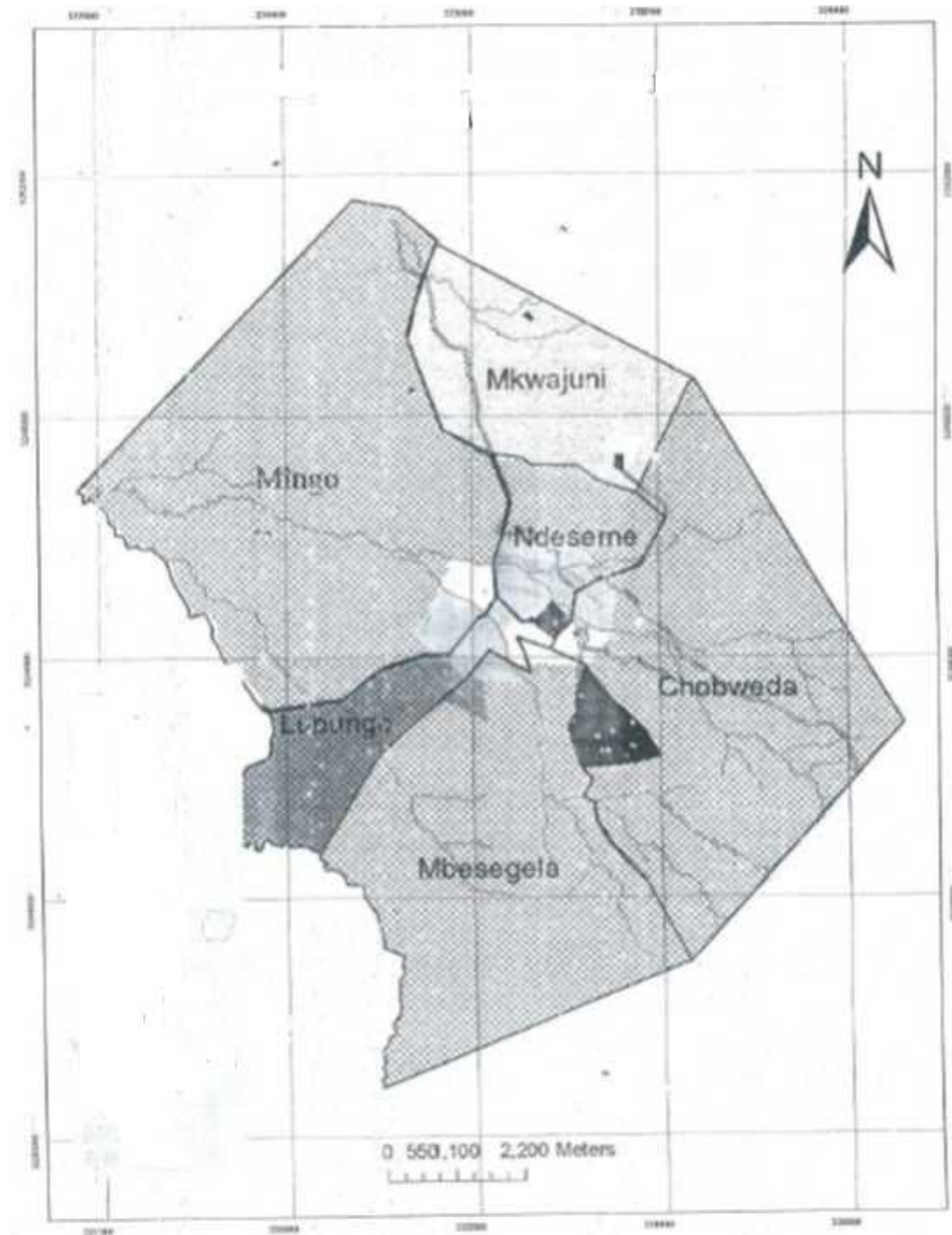
Source: Mvomero District Council, (2014)

A hand-drawn map of the Masanze area, showing various locations and landmarks. The map is divided into several sections by roads and boundaries. Key locations include:

- Top Left:** LUBANGO, KIKIPUP, CEM, and a small settlement.
- Top Right:** MAPURU, KIPURU, and a small settlement.
- Center:** MASANZE, KIPURU, and a small settlement.
- Bottom Left:** MZIMBAZI, KIPURU, and a small settlement.
- Bottom Right:** MZIMBAZI, KIPURU, and a small settlement.
- Bottom:** CHANGARWE, VIKENGE, and a small settlement.

The map also shows various roads, including a main road running horizontally across the middle, and several smaller roads connecting the different sections. There are also some small symbols and markings, such as a cross and a small building, which may represent specific landmarks or structures.

Figure 3.3: Village Map of Lubungo B



Source: Copy of village map Lubungo 'B' (2014)

3.3.1 Area Profile, Physical Characteristics, and Climate

The district occupies a total area of 6,632.9 km². The area which is suitable for agricultural activities is 549,375 hectares. The present cultivated area is 247,219 hectares. This is equal to 45% of the total area. The area which is suitable for livestock rearing is 266,400 hectares.

Mvomero District is located at latitude 06° 26' South and longitude 37° 32' East. It borders Handeni district in the North, Bagamoyo District in the East, Kilosa District in the West, Morogoro Rural and Morogoro Urban (Municipality) in the south. The total area is 7,325 square kilometres.

The climate varies from semi and warm tropical to cool high altitude tropical. Rainfall is unimodal, with short rain season in October to December and long rain season in March – May every year. Rainfall ranges between 700mm in lowland areas to 2300mm in high altitudes and adjacent areas.

3.3.2 Administrative Set-up and Population

The District is administratively divided into 4 Divisions, 23 Wards, 115 Villages and 640 hamlets as indicated in Table 3.1.

Table 3.1: Distribution of administrative units in Mvomero district

S/no	Division	Wards	Villages	Hamlets
1	Mvomero	7	32	163
2	Turiani	5	27	161
3	Mgeta	7	28	176
4	Mlali	4	28	140
Total		23	115	640

Source: Mvomero District Council (2014)

3.3.3 Employment and Economic Activities

The labour force has been categorized into peasants, livestock keepers, employees and businessmen. Peasants constitute 81.6%, pastoralists' occupations 7.6%, craftsmen 2.1%, small business managers 1.7%, service and shop sellers 1.7%. Technicians and associate professionals constituted 1.2 % of the main occupations (Mvomero District Profile, 2014)

3.4 Population, sample size and sampling techniques

This section describes on the issues of population in relation to the study area. The population is nothing other than all objects or individuals having common characteristics. Moreover, this section deals with sample size that represent the intended population whose findings will be valid to the same. Moreover this section indicates the sampling techniques on how the sample size was derived for this study.

3.4.1 Population

The population for whom the findings will be generalised (or for which information is desired) included the whole community in the study area. It comprised all household heads and key informants namely: farmers, pastoralists, women, businessmen, and workers. The total target population in the study area based on population and housing census report of 2012 count to 4,487 (URT, 2013).

3.4.2 Sample size

The sample size for this study was 120 respondents that included 105 heads of households dealing with fetching water and 15 leaders as seen in Table 3.2 and justified in Appendix I.

Table 3.2 Sample size and distribution by Sex

Study area	Respondents Title	No.of respondents	%	Male	Female
District level	District water Engineer	1	0.83	1	0
	Sub Total	1	0.83	1	0
Ward level	Councillor	1	0.83	1	0
	Ward Executive officer	1	0.83	0	1
	Sub Total	3	2.5	2	1
Village level	Village chairpersons	3	2.5	3	0
	Village Executive Officers	3	2.5	3	0
	Water committee chairpersons	3	2.5	3	0
	Water committee secretaries	3	2.5	3	0
	Sub Total	12	10	12	0
	Grand Total Key Informants	15	12.5	14	1
Respondents	Households responsible in fetching water				
Sangasanga Village	Sub Total	40	33.3		
Lubungo “B” Village	Sub Total	46	38.3		
Mafuru Village	Sub Total	19	15.8		
Sub Total		105	87.5		
Grand Total		120	100		

Calculations of sample size

Total sample size is sample size (h) = 105 households + 15 leaders = 120

N = population size/ average household size (4.3)...Source: Mvomero District Profile (2014)

$b = N/n$, where b =fixed interval, n =average household size and N =number of households

i. Sangasanga village

Population is 1,716 = 38% of the total population in three selected villages (4,487 people).

$$N = 1,716/4.3 = 399, n = 38\% \times 105 = 40 \text{ and } b = 399/40 = 10$$

ii. Lubungo "B" village

Population is 1,969 = 44% of the total population in three selected villages (4,487 people).

$$N = 1,969/4.3 = 458, n = 44\% \times 105 = 46 \text{ and } b = 458/46 = 10$$

iii. Mafuru village

Population is 802 = 18% of the total population in three selected villages (4,487 people).

$$N = 802/4.3 = 187, n = 18\% \times 105 = 19 \text{ and } b = 187/19 = 10$$

The sample size of the study will be as follows: A total of 120(100%) respondents that include 105(87.5%) village level community heads of households on issues of fetching water for domestic use and 15 key informants (12.5%). Key informants at village level will involve 12 (10%) respondents involving 3 village chairpersons, 3 village executive officers (VEOs), 3 water committee chairpersons and 3 water committee secretaries.

At ward level there will be 2(1.7%) key informants including one Councillor and one Ward Executive Officer (WEO). At the district level there was a District Water Engineer (0.83%). Involvement of those key informants was due to their leadership positions they held. Their leadership position had an influence on data collection in the way that: Firstly, the leaders were the ones who mobilised the intended respondents and informed them accordingly, thus it became easier for the researcher to get them and collect data smoothly. Secondly, they were very helpful during the exercise of collecting data by use of observation method as they were conversant with their local areas. Thirdly, the leaders were custodians of different

documents like maps, progress reports etc, so through their influence the researcher was able to collect appropriate data as planned.

Lastly, the influence of leaders as far as the issue of data collection was concerned fell under giving accurate and reliable information as they were more knowledgeable and conversant with many things due to their expertise in different fields of work.

3.4.3 Sampling techniques

Sampling techniques used in this study were systematic random sampling and purposive sampling. A total of 105 households at village level were selected randomly at a fixed interval of 10 households to be interviewed. Justification for this comes from the fact that total number of households to be interviewed at the 3 selected villages was as follows; 399, 458, and 187 households respectively. The average household size in Mvomero District is 4.3(URT, 2013), thus in dividing number of households against household size the interval is 10 as justified in section 3.5.1 above. Justification for using systematic random sampling came from the fact that the sampling unit of this study in probability sampling was households which in one part of the study area households were concentrated in one area and others were scattered.

In order to get valid and suitable sample that was good representative of the population and that minimized biasness the systematic random sampling was inevitable for collecting data in this study.

In non-probability sampling the researcher used purposive sampling for 15 respondents. These were experts in their field of work like District engineer, Ward Executive Officer, Village Executive Officer and Village Water Committee Secretaries.

3.5 Data Collection Methods

The study used primary and secondary data collection methods namely Interviews, questionnaires, and observations for the first and documentary review for the later. Data collection tools included interview schedules questionnaires, and observation checklist for primary data collection.

3.5.1 Interview

Face to face interview by using semi-structured interview guide was used. This method allowed the freedom to ask supplementary questions in case there was need or editing. Interview was administered to 15 leaders. At village level it included 12 respondents while at ward level there were 2 respondents and at district level it involved one respondent

3.5.2 Questionnaires

The questionnaires were distributed to a total of 105heads of households involved in fetching water. Questionnaires were prepared in Kiswahili as most of the respondents speak Kiswahili as their mother language.

3.5.3 Observation

Systematic observation of the water users, various sources of domestic water supply were done. It helped the researcher to assess their number and learn about their living conditions, physical appearances and behaviour. Through this method it was possible to assess the magnitude of the problem with regard to the implementation of water policy. An observation checklist was used to collect data from observation.

3.5.4 Documentary Review

Existing literature including village maps, published and unpublished were reviewed. That was done in order to acquire enough information and experience on the assessment of accessibility of domestic water supply in the selected villages.

No.	Research Questions	Data collection methods	Types of data	Sources of data	Data processing and analysis
1	Examine the extent in which the water policy is implemented	interview and questionnaire	Primary data: distance travelled and opinions, time spent and opinions, household income and opinions, means of transport, water management committees, number of consumers per water source	heads of households and village, ward and district leaders	content analysis, regression analysis, sums, averages and percentages
		Documentary review	Secondary data: household social and economic status and water sector norms and standards	water users and national water policy	content analysis
2	Assess the availability and adequacy of infrastructure put in place for domestic water supply in the study area	Questionnaire and observation	Primary data: sources of water, water infrastructures, source of funds for water infrastructure projects, and water adequacy.	village, ward, and district leaders	sums, averages and percentages
			sources of water and water infrastructure	heads of households responsible in fetching water	content analysis
			Secondary data: status of infrastructure	village and district offices	content analysis
3	Establish the nature and extent of community involvement in the water policy implementation process	interview and questionnaire	Primary data: community contributions and opinions, awareness on the national water policy and operations & maintenance (O&M) on water infrastructures.	heads of households responsible in fetching water and village, ward and district leaders	content analysis. sums, averages and percentages
4	Determine the level of satisfaction of consumers in the selected villages	interview	Primary data: quality of water	heads of households	content analysis
		questionnaire	quantity of water per person a day, number of times water is procured	village, ward, and district leaders	sums, averages and percentages

Table 3.3 Summary of methods of data collection and analysis.

3.7 Data Processing, Analysis and Presentations

The data analysis was done both qualitatively and quantitatively. First, qualitative analysis was done through translating, interpreting and categorizing the data into themes and sub-themes through content analysis. Quantitative analysis was limited to simple and abstract methods of data analysis such as tallying, calculation of sums, averages, percentages and regression analysis by use of Statistical Package for Social Scientists (SPSS). Results were presented by using figures, tables and charts.

CHAPTER FOUR

THE FINDINGS AND DISCUSSION

4.1 Introduction

The aim of the study was to assess the extent to which the implementation of the National Water Policy, 2002 has contributed to accessibility of rural domestic water supply in Mvomero District. To achieve this goal, we examined the context in which the water policy is implemented in Sangasanga, Lubungo and Mafuru villages. We also assessed the availability and adequacy of infrastructure put in place for domestic water supply in the study area. Thereafter we; explored the nature and the extent of community involvement in the water policy implementation process and determined the level of satisfaction of consumers in the selected villages. This chapter presents the findings of the study. The findings are presented according to the research questions.

This chapter is divided into five major sections. The first section presents the respondents' demographic characteristics. While the second section presents the context in which the water policy is implemented in SangaSanga, Lubungo and Mafuru villages. The third section assesses the availability and adequacy of infrastructure put in place for domestic water supply in the study area, the fourth section analyses the nature and the extent of community involvement in the water policy implementation process. Finally the fifth section presents the level of satisfaction of consumers in the selected villages in the study area.

4.2 Demographic Characteristics of Respondents

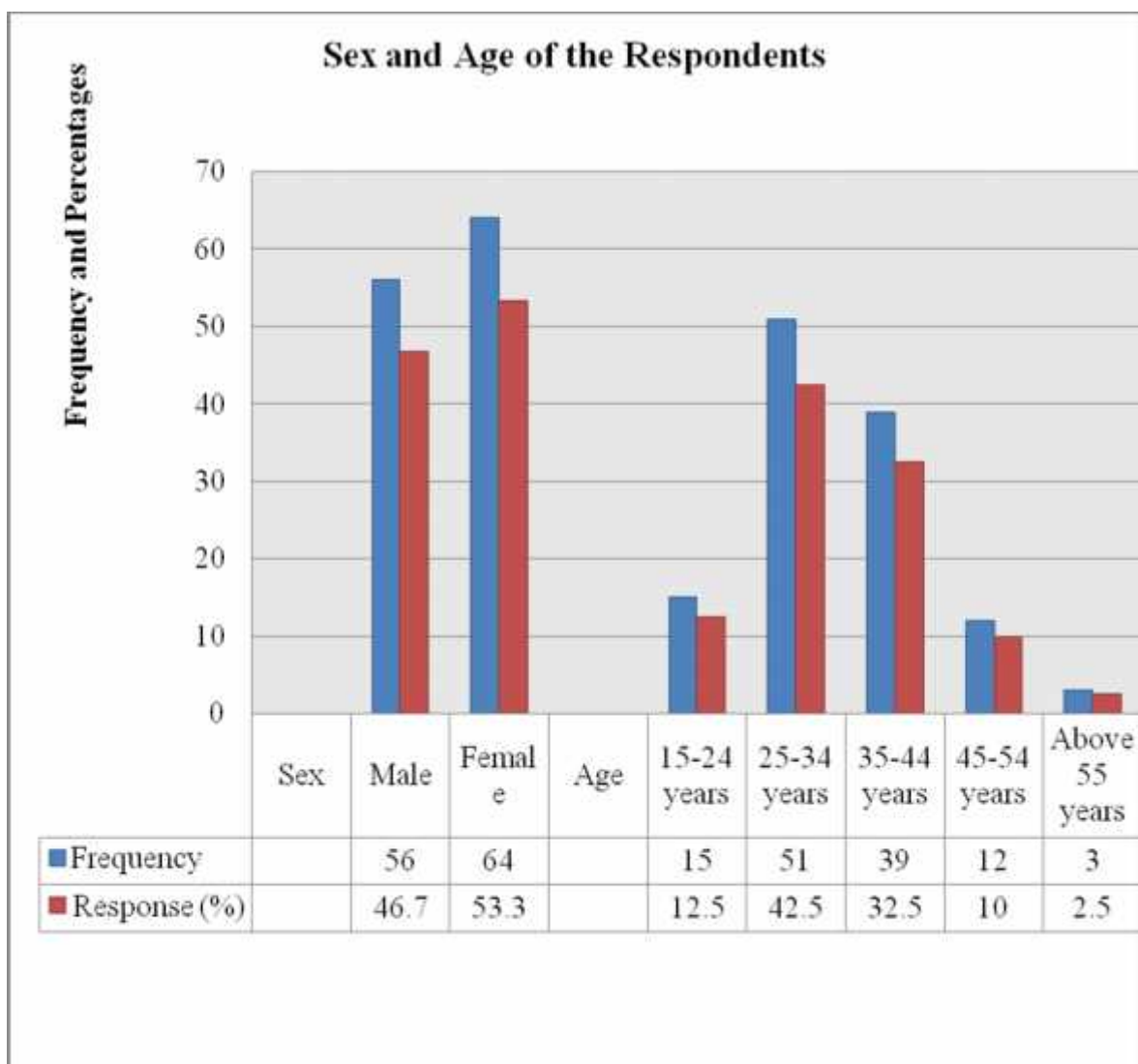
This section describes different characteristics of the respondents that in one way or another have effects to the study in question. The characteristics of the respondents will focus on sex, age and level of education.

4.2.1 Respondents by sex and age

Figure 4.1 shows respondents' sex and age. The results showed that 56 (46.7%) respondents were male and 64 (53.3%) were female. This shows that there was more or less gender

balance in the composition of the sample. Furthermore, Figure 4.1 shows that 15 (12.5%) respondents were in the age group of 15 and 24 years, 51(42.5%) respondents were between 25 and 34 years, 39 (32.5%) respondents were between 35 and 44 years, 12(10%) respondents were between 45 and 54, and 3 (2.5%) respondents were in the age of 55 years and above. These results suggest that the age group between 25 and 34 years who were energetic in economic production spent most of their time in water collection duties in the study area.

Figure 4.1: Sex and Ages of respondents



Source: Survey data(2014)

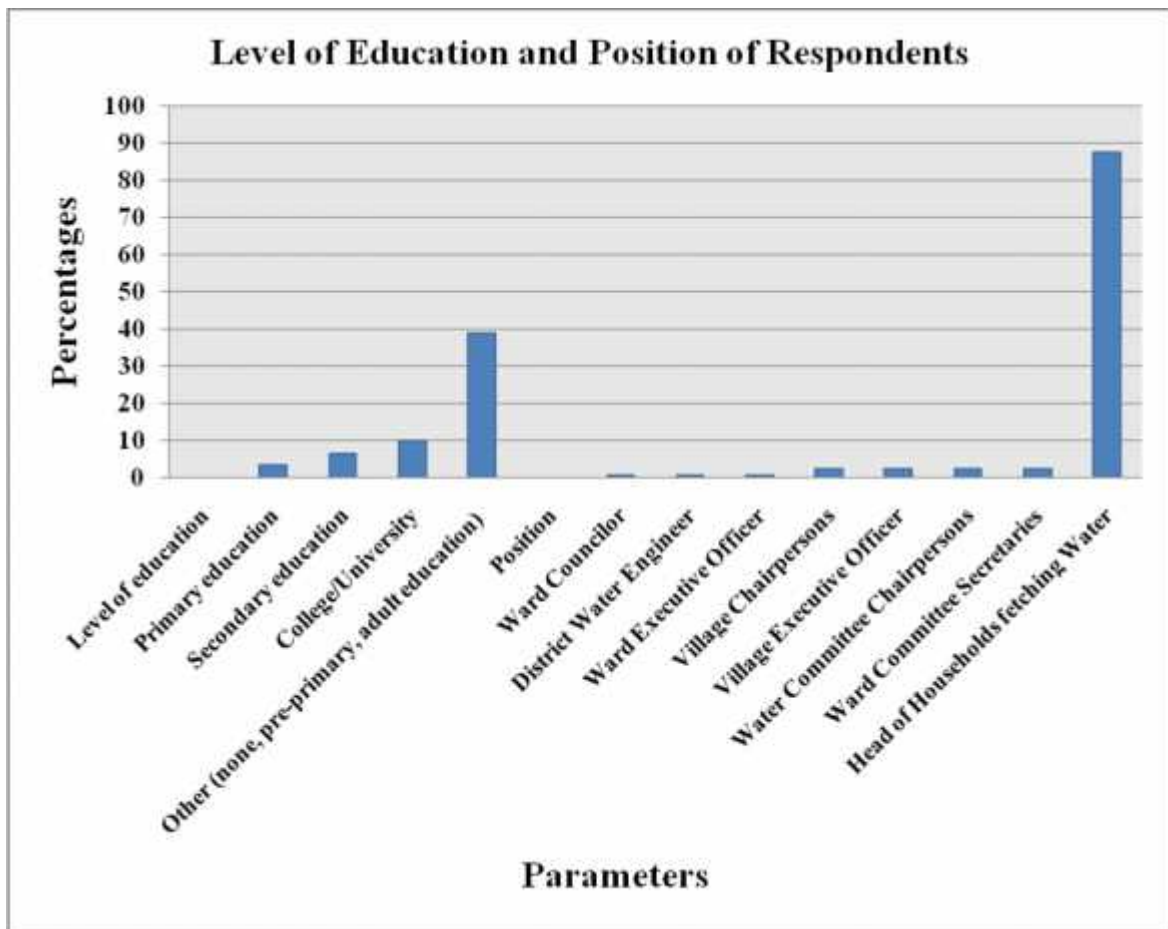
4.2. Level of education and position of respondents

Figure 4.2 shows respondents' education level. The results showed that 3.3 % of respondents had primary education, 6.7 % had ordinary secondary education, and 10 % had advanced level secondary education.

Further results showed that 38.9 % of respondents had attained diploma level, 11.1% had advanced diploma, 15.6% had undergraduate degree, 7.8 % had post graduate degree and 6.7% had master's degree. These results suggest that a large number of respondents had sufficient education which could help in their understanding of the National Water Policy, 2002. They were therefore in a position of judging whether its implementation was successful or not.

Furthermore, Figure 4.2 shows that 2.5% of respondents comprised the Ward Councillor, Ward executive Officer and District Water Engineer and 10% of respondents comprised the Village Chairpersons, Village executive Officers, Water Committee Chairpersons and Water Committee Secretary and 87.5% of respondents comprised heads of households are water users.

Figure 4.2: Level of education and position of respondents



Source: Survey data (2014)

Education level of respondent is an important factor in determining the comprehensiveness of an individual to access effectively and efficient utilization of the resource.

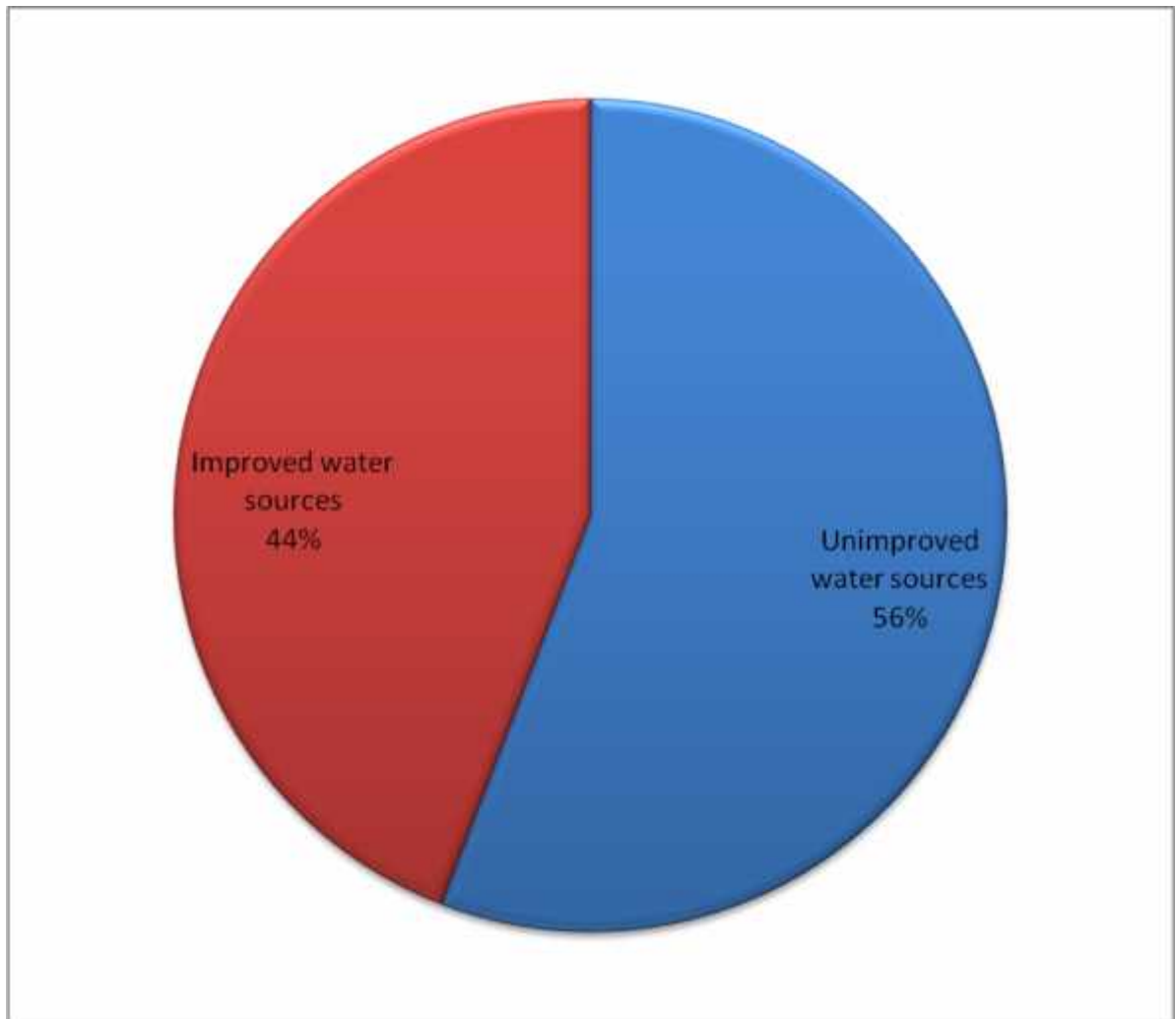
4.3 Context of Water Policy Implementation

The first objective was to examine the context in which the water policy was implemented in the study area namely Sangasanga, Lubungo and Mafuru villages. In order to achieve this objective data were collected on main water sources used for domestic use, community awareness of the implementation of the national water policy 2002, average distance travelled to collect water for domestic use, water health and the average number of people enjoying water provision services from water collection points.

4.3.1 Main water sources used for domestic use

Through questionnaire the respondents were asked to mention *the main water sources used for domestic use, and to state whether these water sources are well maintained* It was found that many people used unimproved water sources for domestic water supply and common sources of water used by households for domestic uses in the study area were spring water, ponds, seasonal streams and unprotected shallow wells. Results showed that; 56percent of the household used unimproved water sources and only 44percent of the households used improved water sources.

Figure 4.3: Main water sources



Source: Survey data(2014)

However, it was also found that there were some few improved water sources namely 9 hand pumped shallow wells, 2 machine drilled boreholes one was not working and needed major maintenance, 4 domestic points for tape water located at Sangasanga village with 2dps not functioning. Lastly it was found that there were 3 rainwater harvesting tanks at Lubungo primary school with carrying capacity of 30,000litres each (Table 4.1).

Table 4.1: Improved water sources

Type of improved water source	Number of sources	Functioning	Not functioning
Hand pumped shallow wells	9	9	-
Machine drilled bore holes	2	1	1
Tape water points	4	2	2
Harvesting tanks	3	3	-
Total	18	15	3

Source: Survey data(2015)

Furthermore, it was found that during the dry season when water supply is too scarce the community at the study area used water from contaminated traditional shallow wells as shown in Figure 4.1. As a result people do experience frequent waterborne diseases. During rainy season there are seasonal streams and ponds most of them are not safe and unprotected.

These results are similar to those by Abebaw, Tadesse, and Mogues (2011) in their study on access to improved water source and satisfaction with services in rural Ethiopia. They found that many people in rural areas continued to rely on unimproved water sources namely surface water obtained from seasonal rivers and streams, traditional wells and ponds was the major source of drinking water for about 58% of the households.

Figure 4.4: Traditional shallow wells at Sangasanga village



Source: Survey data(2014)

The scarcity of water was also noted through observation where long queues of women were seen at domestic water points as shown in figure 4.5

Figure 4.5: Working public tape in Masanze hamlet of Sangasanga village in Mzumbe ward



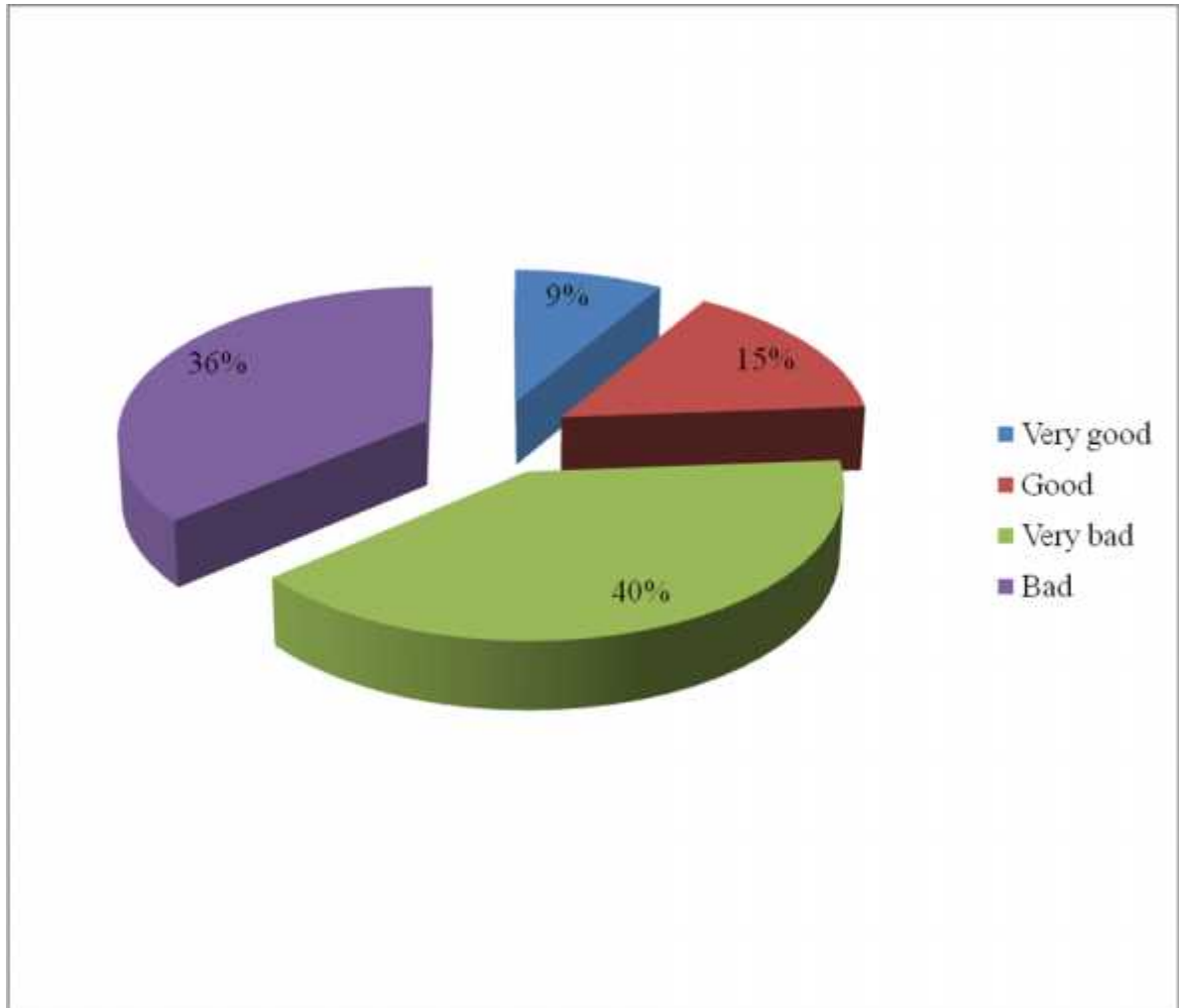
Source: Survey data (2014)

Figure 4.6: Boreholes in the hamlets Mtambani, MnaziMnoja andGezauzole respectively of Sangasanga village in Mzumbe ward



Source: own pictures by Kapinga, M.(2014)

Figure 4.7: Condition of Water Sources in the Study Area



Source: Survey data, 2014

Figure 4.6 shows the results of the condition of water sources. The results showed that 40% of the respondents said that water sources were very bad; 36% said water sources were bad; 15% indicated that water sources were good and 9% indicated that water sources were very good. These results imply that the majority of respondents (79%) see the condition of water sources to be bad, meaning that there are only few who use the public tapes. The majority uses spring water, ponds, seasonal streams and traditional wells. So it is obvious that the condition of water sources such as spring water, ponds and seasonal streams must be bad particularly during the rainy season in terms of hygiene. Likewise during the dry season the amount of water obtained in such sources was smaller and not sufficient.

4.3.2 Community Awareness of the Implementation of the National Water Policy 2002

Table 4.2: Community awareness on implementation of National Water Policy 2002

Parameters	Frequency	Percent
Good	6	40.0
Average	1	6.7
Poor	8	53.3
Total	15	100.0

Source: Survey data, 2014

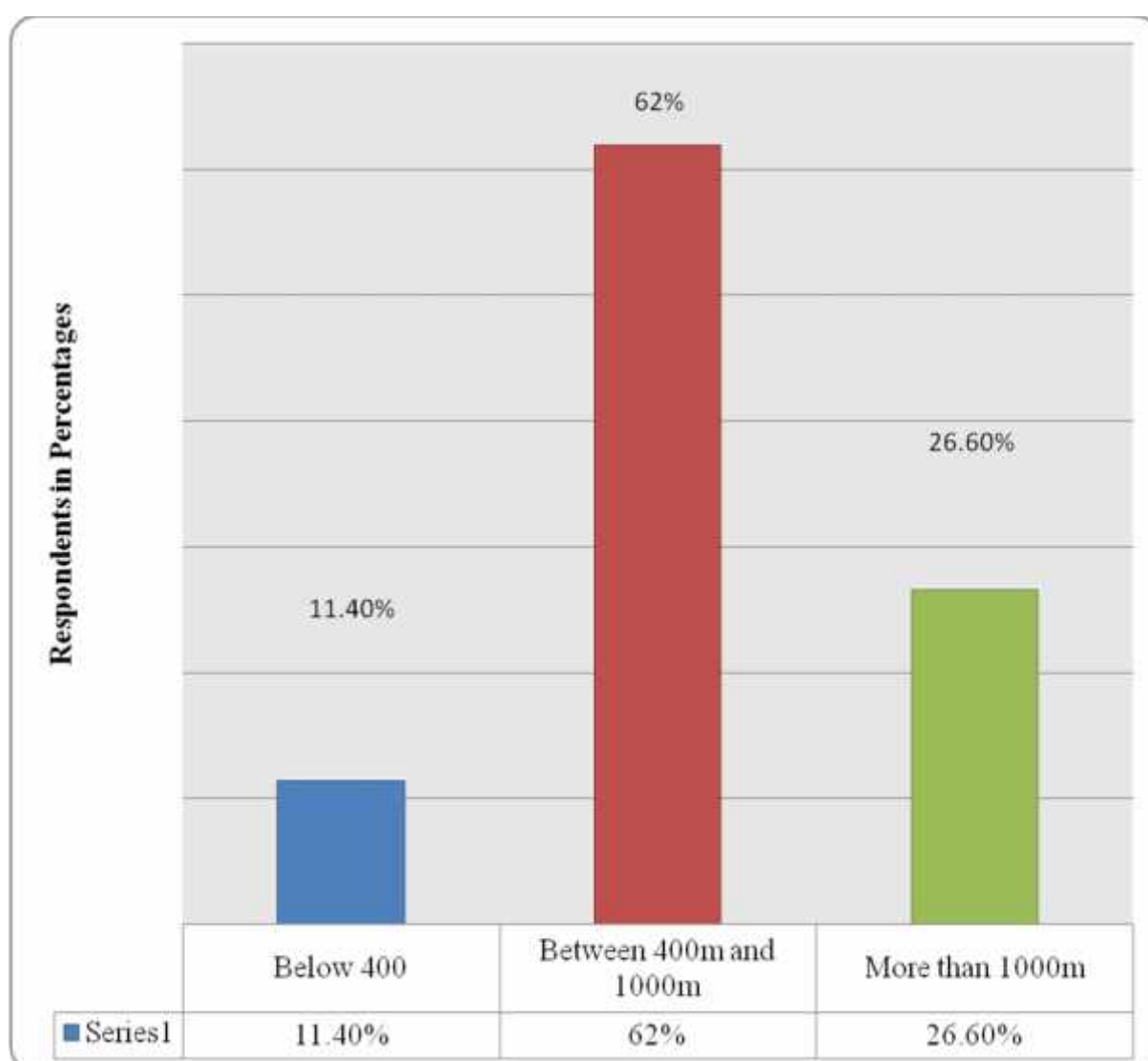
Furthermore, a follow up interview was used to solicit information from 15 respondents who were leaders from three Villages of Sangasanga, Lubungo and Mafuru. They were asked the following question: *what is the level of community awareness of the implementation of national water policy 2002 in your community?* Table 4.2 shows the results. The table shows that forty percent of the respondents were aware of the implementation of the national water policy, 53.3% were poorly aware and 6.7% were moderately aware. These results suggest that the entire community was not aware of the implementation of the National water policy 2002. As a result water accessibility and supply in the study area was negatively affected due to lack of political will from leaders and low community participation in the implementation of the policy itself. These results are consistent with those by Gbadegesin & Olorunfemi (2007) who indicated that many people in Oyo state Nigeria were not aware of any government policy on water supply provision and management both at the federal and state level. Therefore, the issue of stakeholders' willingness to adopt and/or implement government policies did not arise.

4.3.3 Average distance households travelled to collect water for domestic use

Leaders through interview guide were asked; *what is the average distance from one household to the water collection points for domestic use?* The results in Figure 4.7 showed that 12 (11.4%) respondents used an average distance of below 400m; 65 (62%) travelled an average distance between 400m and 1000m and 28 (26.6%) used an average distance of more than 1000m. These results suggest that the targets set by the National water policy 2002 were not attained. Hence, household members particularly women spent more time walking long distances to fetch water for domestic use. This in turn caused time wastage, which could be used in other home affairs and income generating activities such as farming, gardening and small business activities.

These could in turn help to raise household earnings and Government revenue through taxation. These results are consistent with a study by Jansz (2011), who found that the average distance from the household to the water collection point was about 700m in Niassa province, Mozambique and statistics by URT (2013) showed that the average distance travelled from one household to the water collection point was 1000m.

Figure 4.8: Average Distance Household members walked to fetch Water for Domestic use



Source: Survey data(2014)

The assumption here was that people living far from water sources do not easily access the water that is the farther a person was from the water source the less accessible he/she was to the water supply. Those people close to the water source access it more often.

Regression Analysis

Generation of economic model: Accessibility (number of visits per week) of water is the function of Sex, Education level, Distance from the water point, Income and Age.

$$A = f(S, E, D, I, A, m)$$

Where; A = accessibility (number of visits per week) of water.

S = sex of respondent

E= education level of respondent

D = distance from Water points

I = income of the respondent

A = Age.

m, = Disturbance term

Regression analysis was run to determine the influence of socio-economic variables to the number of visits an individual makes per week to the water points.

Table 4.3: Results of regression analysis

Socio-economic Characteristics	Standardized Coefficients	
	B	Std. Error
(Constant)	1.013	.223
Education level	-.005201	.043
Sex	-.06697	.071
Distance	0.01700	.016
Age	0.06790	.096
Income	0.0012	.000

A Dependent Variable: Accessibility of Water.

Source: Survey data 2014.

The log linear equation:

$$A = 1.013 - 0.0067\text{Sex} + 0.0017\text{Dist} - 0.00052\text{Edu} + 0.00679\text{Age} + 0.0012\text{Income}$$

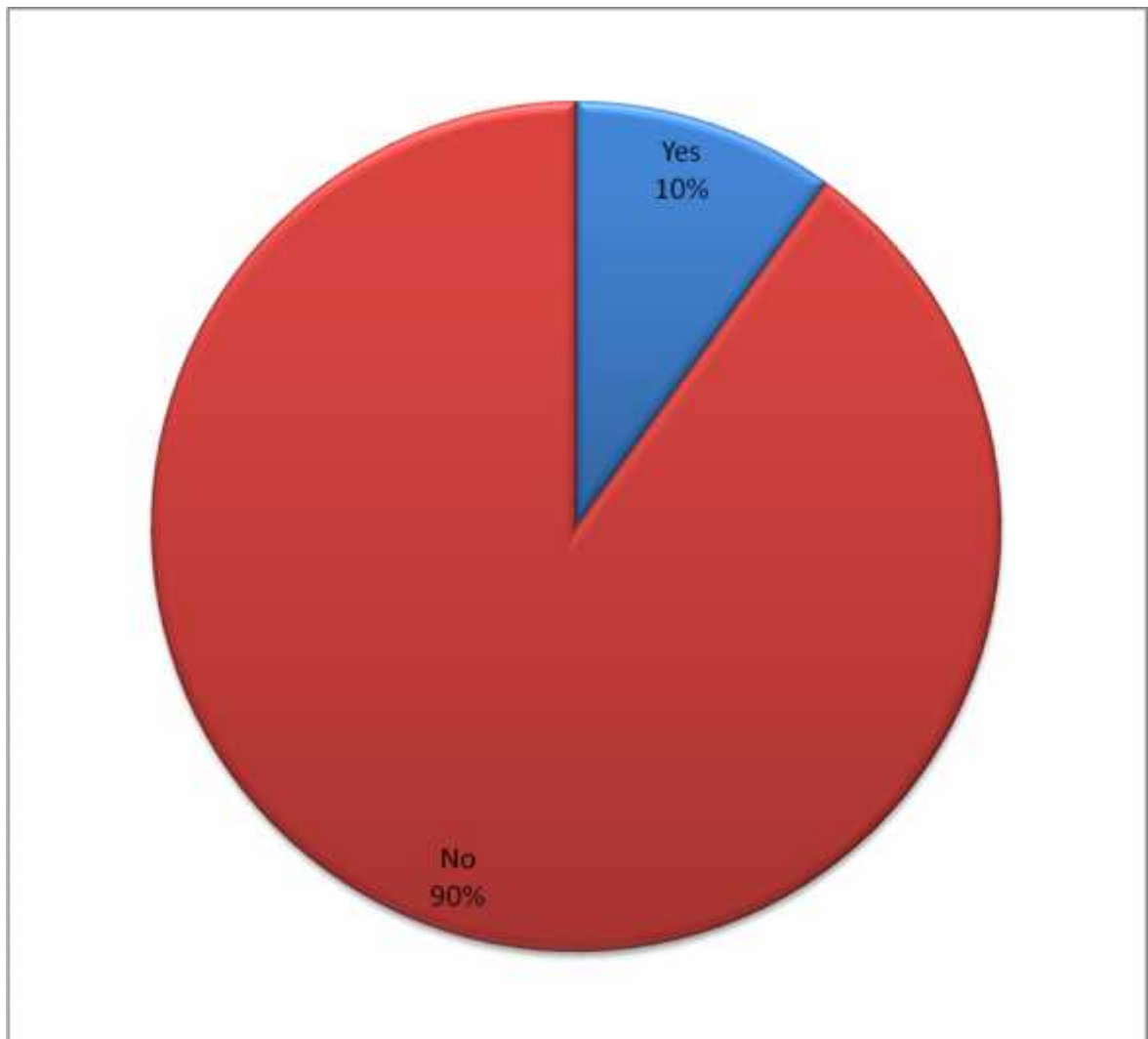
From the regression equation one can point out that there are other exogenous factors (1.013 constant) termed as disturbance terms, which also determine accessibility of water points. The coefficient for distance was found to be 0.0017; it was statistically significant at 1% level of significance, meaning that for a unit increase in distance there was 0.0017 increases in water accessibility. Likewise for education, age, income and sex the increase in water accessibility were 0.00052, 0.00679, 0.0012 and 0.0067 respectively.

4.3.4 Water Health

Figure 4.6 shows respondents' views via interview guide on water health. The results show that 90% of respondents said that in their area there was not any water treatment and only 10% said there was water treatment. These results imply that there was no water treatment in most water sources. This is contrary to the National water policy 2002 that insists on water treatment by purifying it and adding chlorine for domestic use.

These findings are similar to those by Ademun (2009) who found out that in the studied Ugandan rural communities not all households treat water before use because of limited and higher costs of treatment methods.

Figure 4.9: Water health



Source: Survey data (2014)

Figure 4.8: Water health

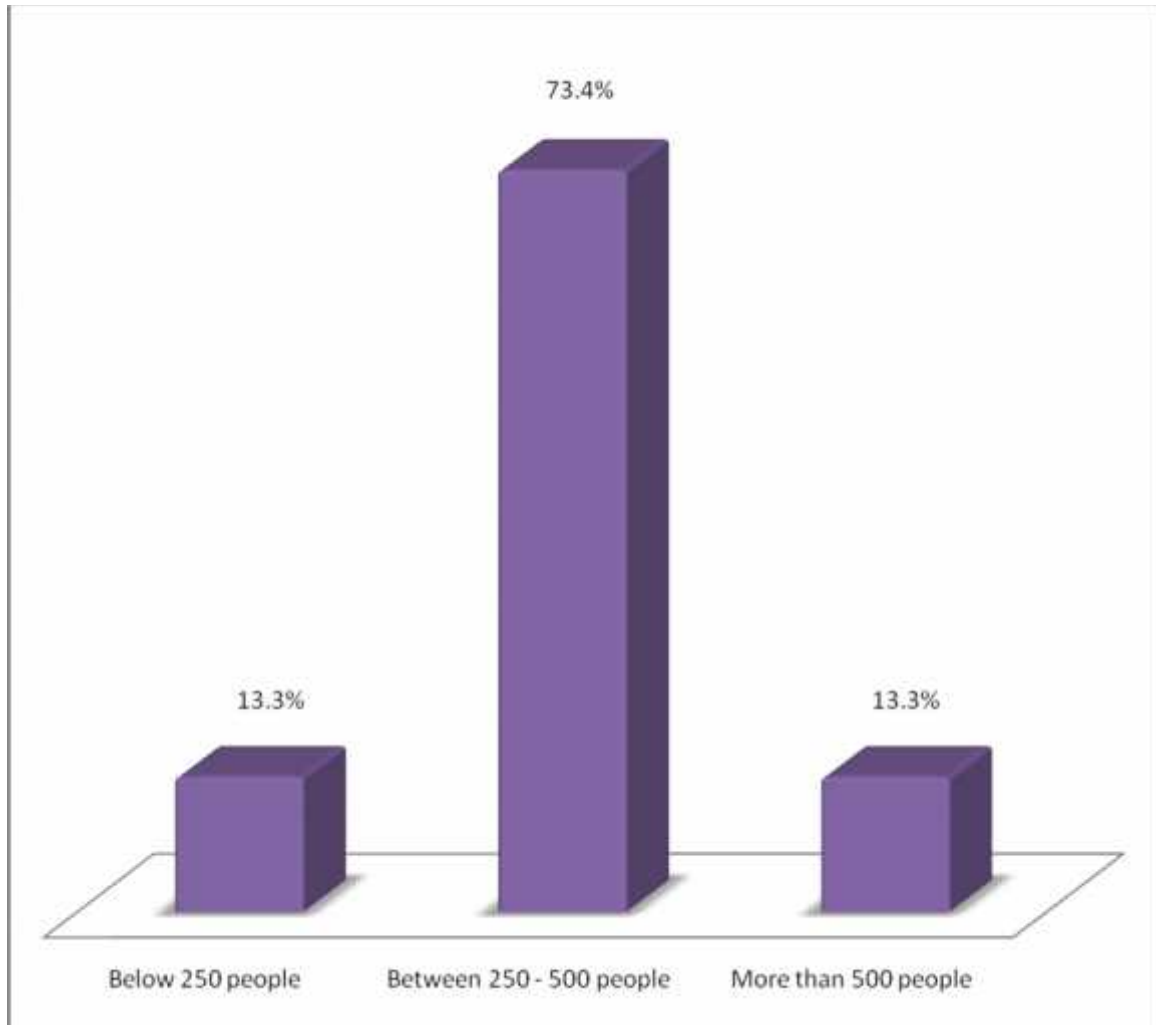
4.3.5 Average number of people enjoying water provision services from water collection points

Figure 4.9 shows the average number of people enjoying water provision services from water collection points. Village, ward and district leaders were asked to state *the average number of people enjoying water provision services from water collection points*.

The results showed that 13.3% of the respondents said the number was below 250 people, 73.4% said the number was between 250 to 500 people and 13.3% said the number was more than 500 people.

The majority of respondents said that the average number of people enjoying from the water provision services was between 250 and 500 people. The National water policy of 2002 says that the number of people per a single water collection point should not exceed 250 people, so these findings are contrary to the national water policy 2002. Respondents' reasons for that were first inadequate water infrastructure facility, second scarcity of water supply especially during dry season, thirdly for the available infrastructural facility no maintenance of water infrastructure. These findings are similar to the study by Ademun (2009) in Arakai and Amuria districts in Uganda who found that on average 498 persons share a single water collection point.

Figure 4.10: Average number of people enjoying water provision services from water collection points



Source: Survey data (2014)

4.4 Availability and Adequacy of Water Infrastructure in the Study Area

The second objective was to find out whether the national water policy of 2002 implementation had facilitated availability and adequate construction and maintained water infrastructures to promote accessibility of domestic water supply in the study area.

Figure 4.10 shows construction, operation and maintenance of water infrastructure. The results showed that 12% of the respondents said that the central government/local authorities were the major actors and responsible in construction and maintenance of water infrastructures, 14% said the responsibility was on the hands of the community, 34% said

the responsibility was on the hands of donors and 40% said the responsibility was on the hands of Non-Governmental Organizations. It was found that the rate of participation on operation and maintenance of water infrastructures for provision of water for domestic use in the study area was low by both central government and community members.

The national water policy 2002 requires that one domestic point should serve not more than 250 people. The study found that total population in the study area was 4,487 and there were 10 domestic points that were functioning throughout the year that is 1 machine drilled borehole, 2 tape water domestic points and 7 shallow wells. Moreover, there were 3 rainwater storage tanks in Lubungo village with carrying capacity of 30,000 litres each but not sufficient and lasts only for one month after rainy season.

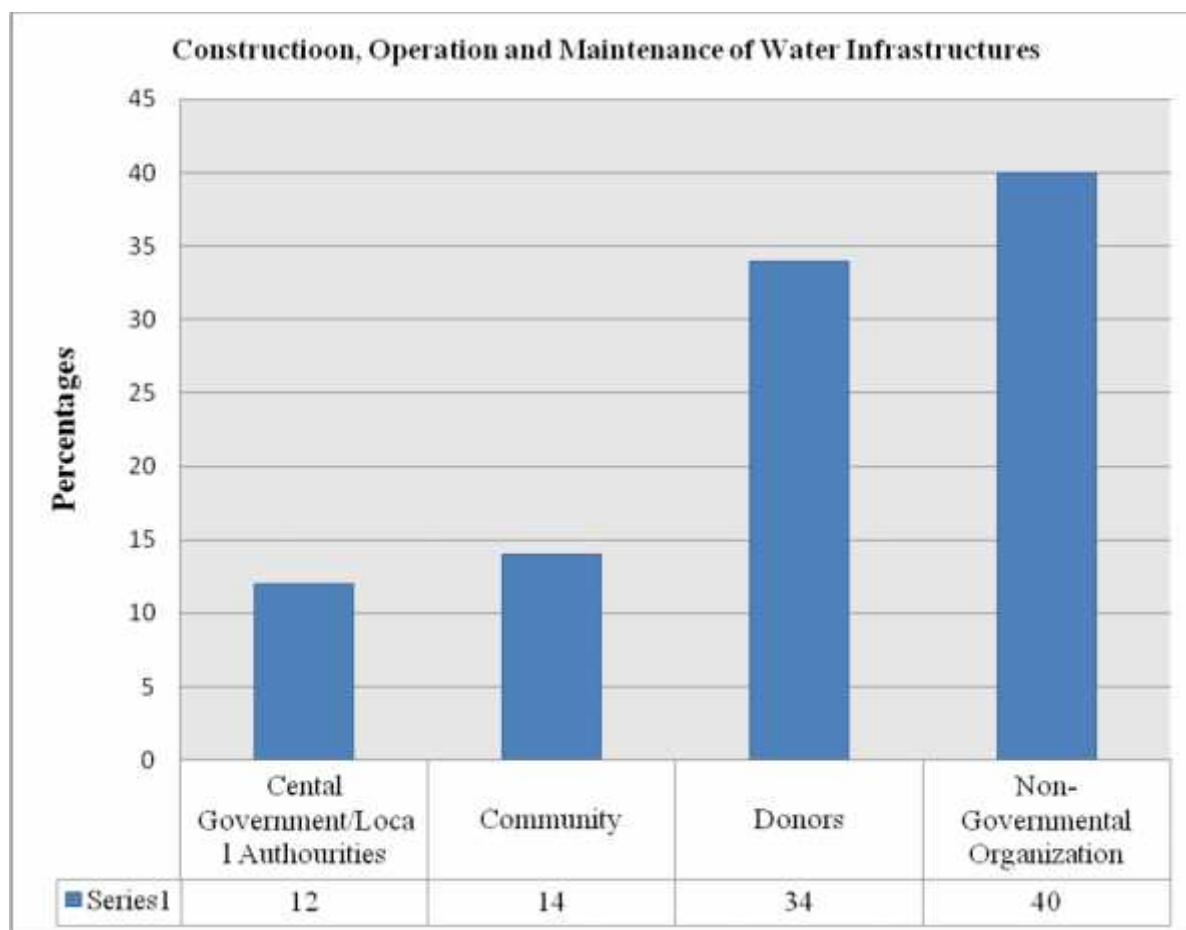
These results showed that on average one domestic point for water supply was serving more than 400 people contrary to the national water policy 2002. There was only one source of gravity water supply at Tangeni village which sometimes during dry season the supply of water is too scarce. However, there was also one storage tank with small carrying capacity located at Changarawe village that serve two villages of Changarawe and Sangasanga. Due to increased population in the stated villages the storage tank cannot meet national needs of the people in terms of water supply for domestic use. These results showed that implementation of national water policy of 2002 was low in terms of construction, operation and maintenance of water infrastructures. That involves Construction and repairs of water infrastructures like pipes and fittings, water purification and treatment as well as administration in terms of running costs and salaries.

Therefore, the provision of safe and clean water for domestic use in the study area were not efficient and effective, and accelerated to outbreak of water borne diseases like typhoid, diarrhoea, cholera and bilharzias. Consequences are bad human health and death; inadequate water supply to meet community needs, households walking far distances more than one kilometre to fetch water from water collection points. National water policy 2002 states 400 meters maximum distance from household home to water collection point and one water collection point to serve 250 households fetching water.

These findings are similar to the study by Gbadegesin and Olorunfemi (2007) which found that the government of Nigeria through its 2000 National water supply and sanitation policy

was the major sponsor in capital investments for rural water supply but still the level of provision of water in the rural areas was very low.

Figure 4.11: Construction, Operation and Maintenance of Water Infrastructure



Source: Survey data (2014)

Figure 4.12: Maintenance of hand pumped shallow well at Mafuru village



Source: Survey data (2014)

4.5 Community Involvement in Water Policy Implementation process

When respondents were asked how the community was involved in the implementation of national water policy they replied that the extent of community involvement in the water policy implementation process was by paying annual contribution of Tsh 6,000 or Tsh 500 per month for maintenance of water sources. To this end, one respondent said:

“... Villagers have to pay Tsh 6,000 annually or Tsh 500 per month as the maintenance fee for water sources...”

When asked to elaborate the extent to which the community participates in the operation and maintenance of the water infrastructures once they are broken, community members and leaders through interview guide and questionnaires said that water sources were maintained by the community under close supervision of the village water committee with some assistance from the village government when need arises. Though, the community contribution in cash is low due to low financial capabilities of most households however a lot of the households were not responding in the cash contribution. Also, the community helps by digging trenches for the water pipes and/or contributes construction materials for the water infrastructure.

Water source needs to be repaired; the community pays a technician from Morogoro town. Once repaired, the borehole works for around 3 to 5 months. A breakdown of a borehole in a hamlet causes large problems as citizens then have to fetch water from a source that is located further away. It can take up to a week before the borehole is repaired. On the other hand, researcher found weak community involvement in water project management that may lead to water project sustainability. There were no Community Owned Water Supply Organizations (COWSOs) and Water User Associations. Day to day operations of water provision services were undertaken by Village/hamlet Water and Sanitation Committees that have low managerial skills.

This shows that the sense of ownership, community involvement and issue of sustainability of projects will be achieved at a lower speed not as anticipated in the national water policy 2002 itself.

These findings are similar to the study by Gbadegesin and Olorunfemi (2007) who found that one means of community involvement is by financial contribution to water infrastructures.

4.6 The level of satisfaction of consumers in the selected villages

The fourth objective of our study was to determine the level of satisfaction of consumers in the selected villages. In order to achieve this objective, data were collected on satisfaction with water provision services basing on the current water infrastructure, how often the community purchase water for domestic use, average water consumption per person per day, sufficiency of daily water consumption per day and community members' satisfaction with water supply service.

4.6.1 Satisfaction with water provision services basing on the current water infrastructure

Furthermore, a follow up questionnaire was used to solicit information from 105 heads of households from three villages of Sangasanga, Lubungo and Mafuru. They were asked the following question: *based on the available water infrastructures are the community satisfied with water provision services in this village?* Figure 4.9 showed respondents' satisfaction with water provision services basing on the current water infrastructure. The results showed that 60% of the respondents said that their satisfaction with water provision services basing on the current water infrastructure was just average, 40% were totally not satisfied with water provision services and none was satisfied with water provision services basing on the current water infrastructure.

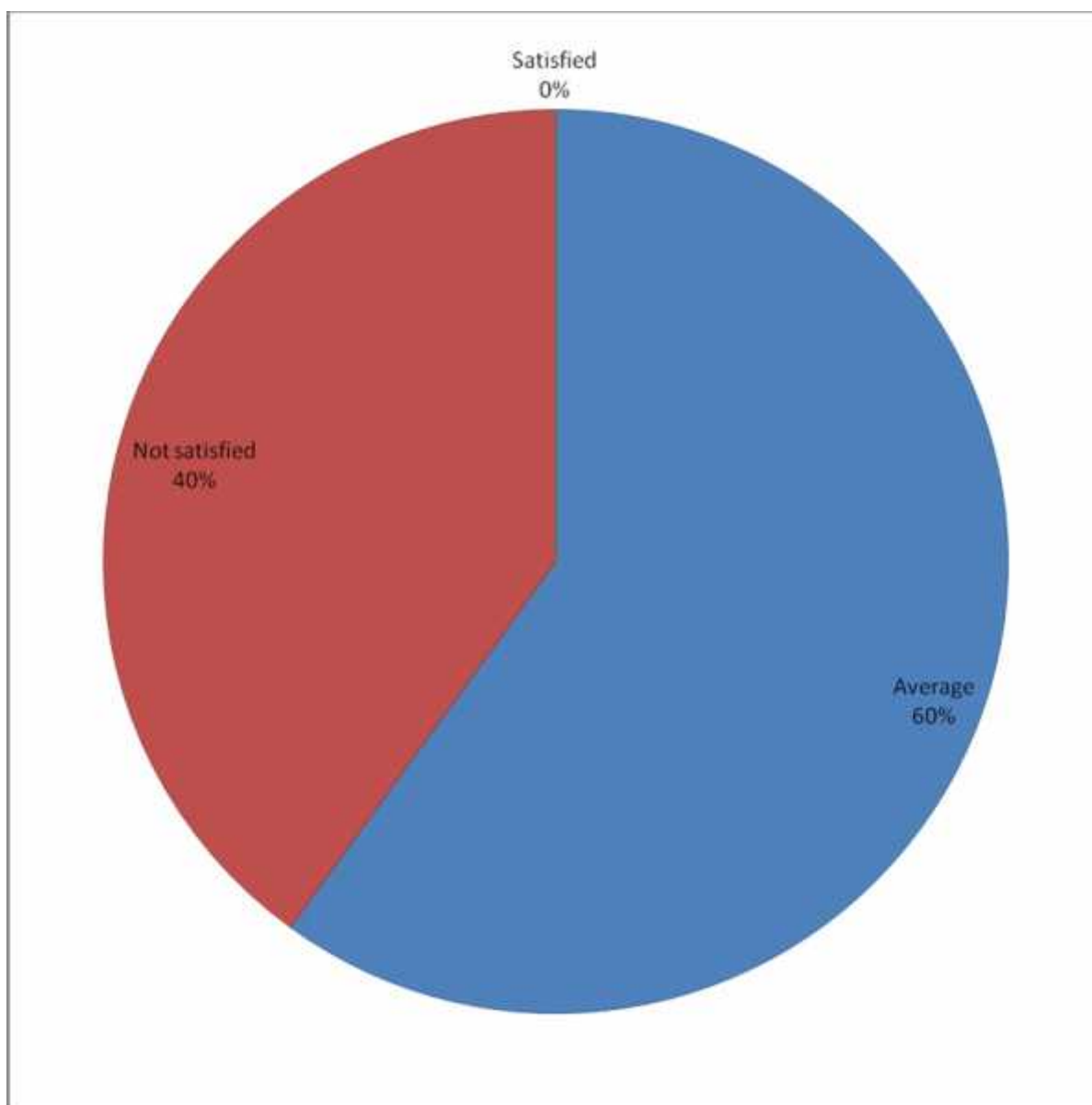
The main reasons for these responses were that there was inadequate water points serving the community and some of the water infrastructures were broken and need maintenance. For example, in Sangasanga village the results showed that there were 4 domestic points from the source of tape water but only 2Dps were functioning while the rest 2 Dps are not working and needed major repairs and maintenance. Likewise, in the study area the total

number of hand pumped shallow wells and machine drilled boreholes was 11 out of which 8 were functioning and the remaining 3 need maintenance.

There were 3 rainwater harvesting tanks at Lubungo Primary school with carrying capacity of 30,000litres each but did not meet water needs as they only last for one month after rain season.

These findings are similar to the study by Abebaw, Tadesse and Mogue (2011) who found that unimproved water sources/infrastructures decreased users' satisfaction with both quality and quantity of drinking water and vice versa was true. However household satisfaction with the availability is lower than satisfaction with quality.

Figure 4.13: Satisfaction with water provision services basing on the current water infrastructure



Source: Survey data (2014)

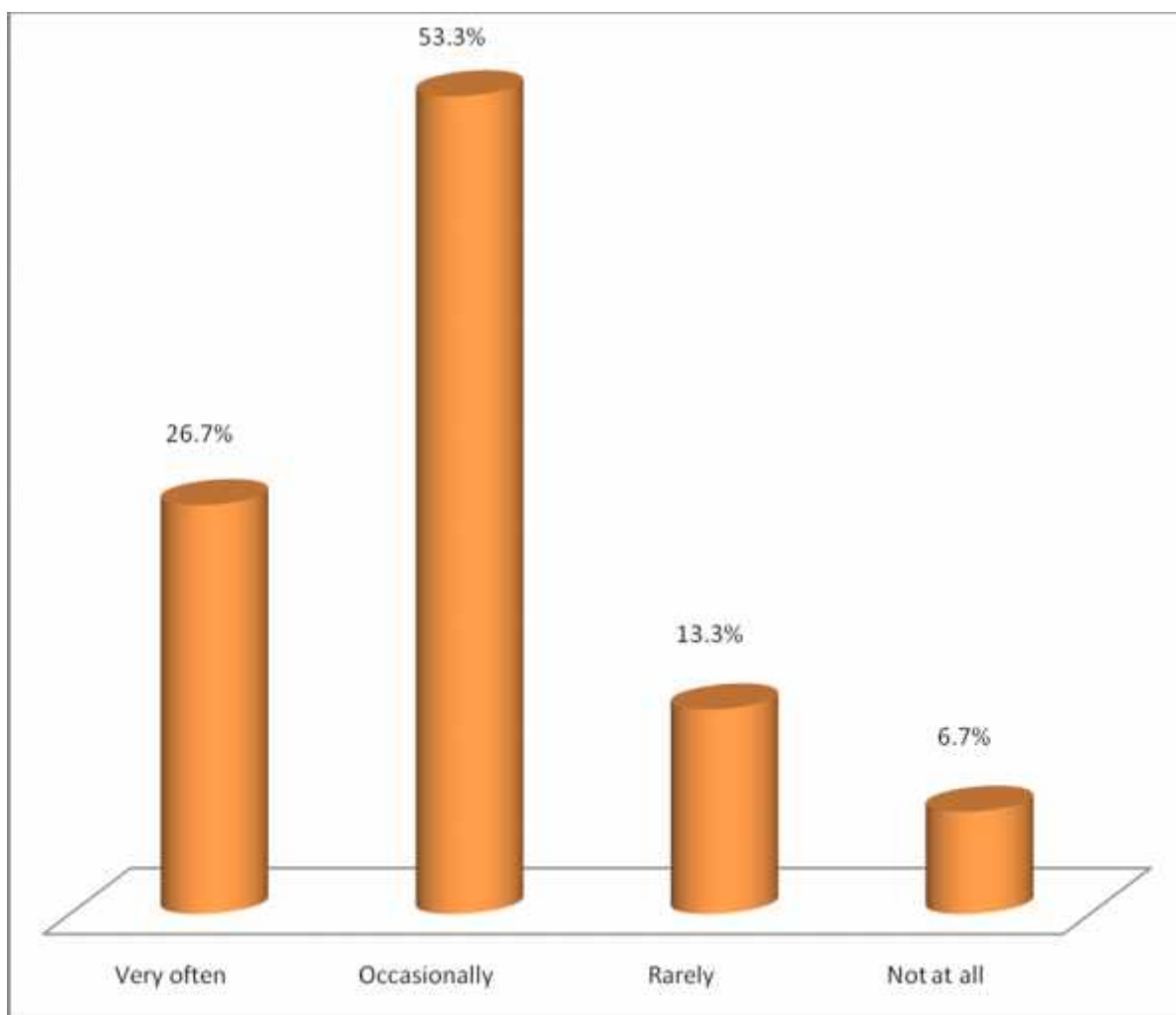
4.6.2: How often the community purchases water for domestic use

Figure 4.13 shows how often respondents purchased water for domestic use. The results showed that 53.3% of the respondents said they did purchase water occasionally, 26.7% said

they did purchase water very often. Furthermore, the result showed that 13.3% said they did purchase water rarely and 6.7% did not purchase water at all.

These results showed that the community members were forced to purchase water due to frequent breakdown of infrastructure and also during the dry season. For example, when asked to explain whether they pay for water and how much they pay per litre, community members through interview guide said that Sangasanga village depends on water which is basically shared with Changarawe village, which itself has only one storage tank being not sufficiently supply water to more than one village. But further more water supplied in Sangasanga village was not that sufficient because the residents of neighbouring village of Changarawe do tape water into their residential houses before being supplied to Sangasanga village. These results are similar to those by The World Bank (1993) who found that most households spend 6 – 10 percent of their income annually buying water from vendors and not from the public taps due to unreliability of the government provision of water services.

Figure 4.14: How often respondents purchase water for domestic use



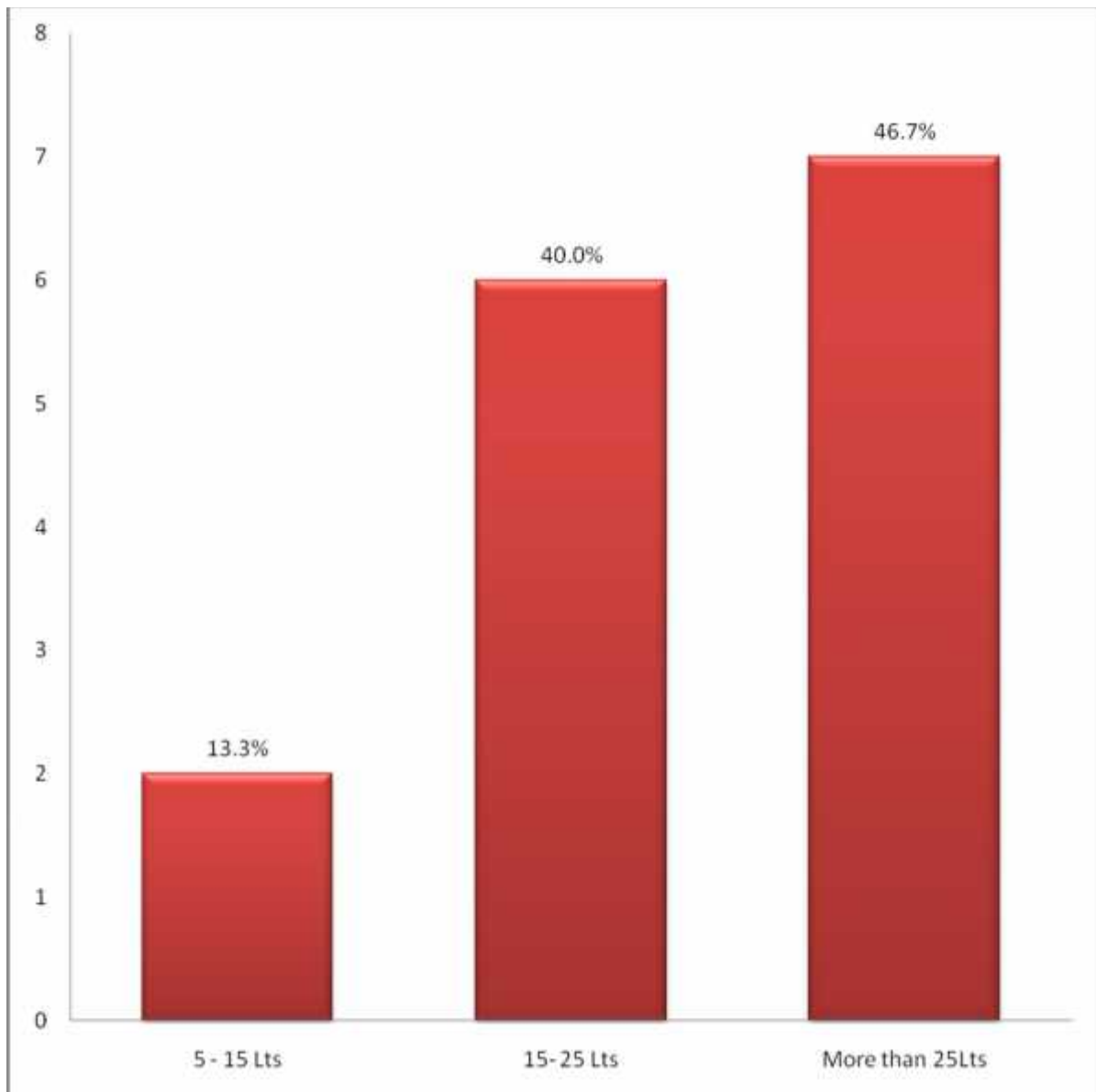
Source: Survey data (2014)

4.6.3: Average water consumption per person per day

When asked to elaborate on the average water consumption per person per day, the results showed that 46.7% of the respondents said they did consume more than 25 litres of water per day, 40% consume 15 to 25 litres of water per day and 13.3% do consume 5 to 15 litres of water per day. These results show that more than 50% consume less than 25 litres of water per day contrary to the national water policy of 2002, that the consumption of water per person per day should not be less than 25 litres. This implies that the number of litres

consumed per day was not enough for household use. These results are consistent to those by WHO (2003) that found average water consumption per person per day from traditional source, springs or hand pumps and stand post was 15litres.

Figure 4.15 shows average water consumption per person per day.



Source: Survey data (2014)

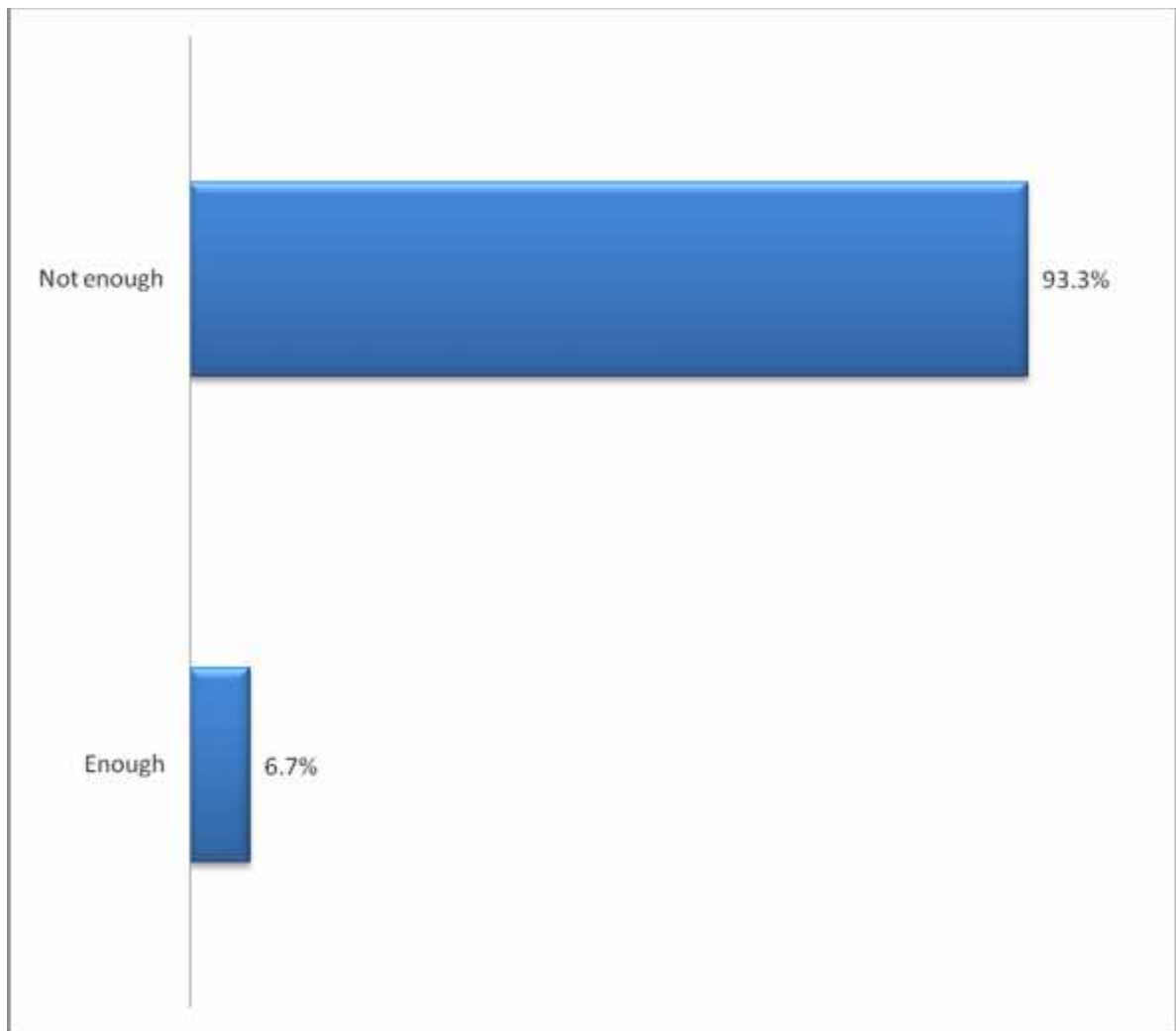
4.6.4: Sufficiency of daily water consumption per day

When asked to explain whether the amount consumed per day was enough or not, 6.7% of the respondents said the amount of water received was enough and 93.3% said the amount

of water received was not enough. These results imply that the amount of water received in the study area basically was not enough.

When asked to give reasons for water insufficiency, community members gave the following reasons. Firstly, they said that most of the water consumers did collect water at the average distance of 400 metres to 1 kilometre from one household to the water supply point which is too far. Since most of them the means of transport is on foot, they have no vehicles or the bicycles. Secondly, they pointed out that water scarcity during the dry season causes long queues and for that reason time spent in order to fetch water is too long. So for that reason users fetched a small amount of water needed. Thirdly, they said that inadequate water supply points serving. Fourthly and lastly, they stated that dependence on few sources of water supply particularly shallow wells which during the dry season did not work or are experiencing acute water shortage.

Figure 4.16: Daily water consumption per person



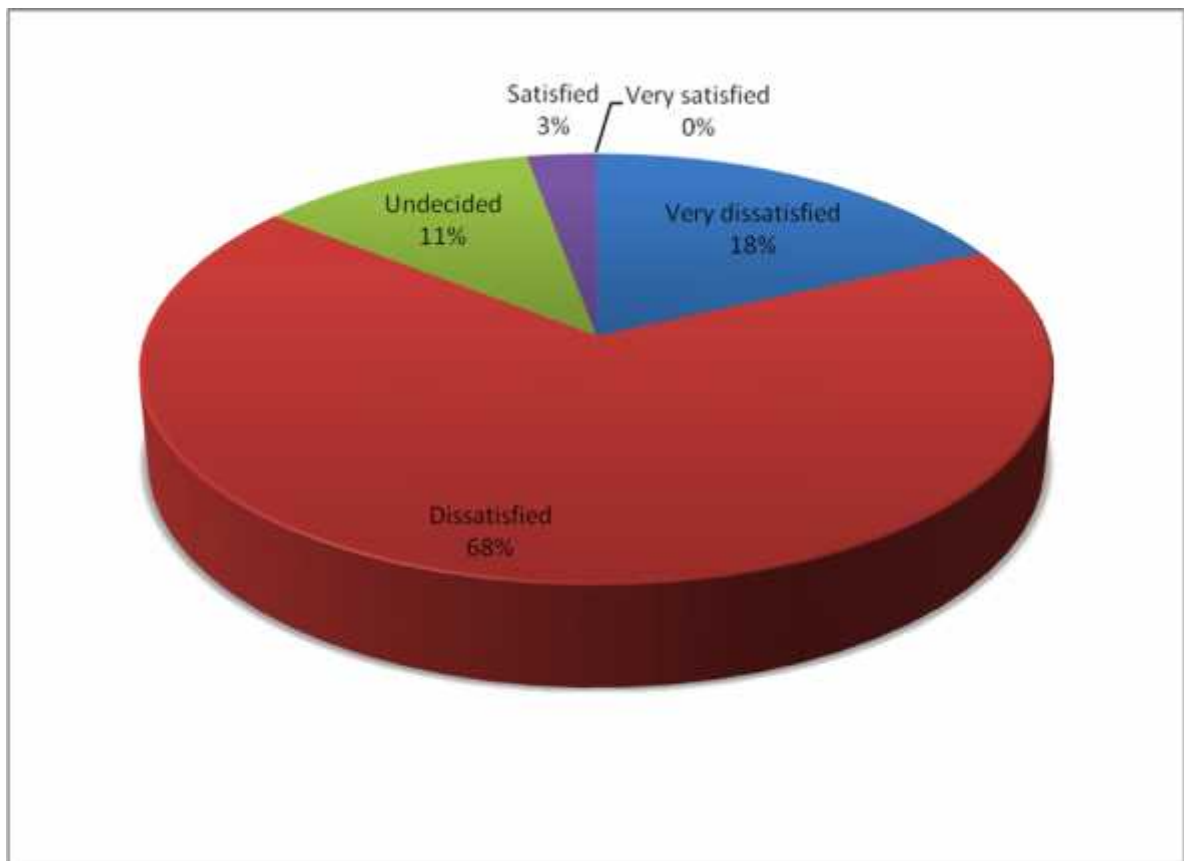
Source: Survey data (2014)

4.6.5: Community members' satisfaction with water supply services

When asked to explain whether the community was satisfied with the water provision services, 3% of the respondents said they were satisfied, 68% were dissatisfied and 18% said they were very dissatisfied. These results showed that more than 85% of the respondents were not satisfied with the supply services in the study area. The reasons were the same as those given by the community leaders with regard to whether the provision of water services was enough or not as in 4.6.4 above. These results are similar to those by Ademun (2009) who found that the community demands at Rakai and Amuria districts in Uganda on domestic water supply were not fulfilled and thus, they were not satisfied. The community

demanded more water sources especially boreholes and tap water as they are the main sources of clean and safe water and also reliable during the dry seasons. They also urged for the reconstruction of traditional wells by protecting and fencing that greatly would improve water quality and reduce the risk of accidents and water borne diseases.

Figure 4.17: Community members' satisfaction with water supply service



Source: Survey data (2014)

Therefore, having gone through all those subsections above regarding the satisfaction with water supply services from both the community leaders and members, the results have shown that generally the community as whole was not satisfied with water supply services.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary and conclusions

The study aimed at assessing the implementation of water policy 2002 in Sangasanga, Lubungo and Mafuru villages in Mvomero district, Morogoro region. The main objective was to assess the extent to which the implementation of National Water Policy, 2002 has contributed to accessibility of rural domestic water supply. The first specific objective was to examine the context in which the water policy is implemented. The second objective was to assess the availability and adequacy of infrastructure put in place for domestic water supply. The third objective was to establish the nature and the extent of community involvement in the water policy implementation process and the fourth objective was to determine the level of satisfaction of consumers in the selected villages.

The guiding theory in this study was Policy Implementation Theory (De Groff, A., & Cargo, M., 2009). Theory development began with the landmark case studies of the early 1970s (Derthick, 1972; Pressman & Wildavsky, 1973), which documented the challenges and complexities of bringing a policy to fruition in real-world circumstances.

A Cross-sectional Research design was used. Both probability and non-probability sampling techniques were used. The study used both primary and secondary sources of data. Data were collected through face to face individual interviews, questionnaire, site observation and documentary review. The sample size was 120 involving 105 household heads and 15 key informants comprising village, ward and District Council Leaders.

Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) computer software. Descriptive statistics such as frequencies, means and percentages were established. Content analysis was used to analyse qualitative data. The findings showed that condition of water source is very bad, community awareness on implementation of water policy 2002 is very poor, average distance to collect water for domestic use for the majority lies between 400 m and 1000 m which is contrary to the planned distance in water policy 2002 which requires the distance to be below 400 m and also there is frequent occurrence of

water borne diseases such as diarrhoea due to lack of water treatment caused by wrong traditional beliefs. These findings suggest that there is poor context in which the water policy is implemented in Sangasanga, Lubungo and Mafuru villages. Secondly, the findings showed that no sufficient and adequate water infrastructure in the study area, as the main actor of contribution in implementing the water policy that is central government is very low participation in water development projects. Therefore infrastructures are not sufficient and adequate to put in place for domestic water supply. Thirdly the findings tells us that though there is community involvement in water policy implementation process yet there is negative community response in contribution in kind and cash for maintenance and running of water infrastructures due to mainly unreliability of domestic water supply. But also poor leadership in some villages for example Mafuru and Lubungo villages contributes to poor involvement of the community in water development projects. Lastly, findings showed that the community in the study area is not satisfied with water supply services due to a few to mention inadequate water infrastructures, poor water quality especially from the seasonal sources of water and untreated water from the shallow wells and boreholes, water scarcity mostly during dry season likewise, longer distances travelled to fetch water. With regard to the context in which the water policy is implemented in the study area it is generally concluded that implementation of the national water policy 2002 for what have been contained in the document has not been fully achieved.

5.2 Recommendations

First findings showed that condition of water source is very bad, community awareness on implementation of water policy 2002 is very poor, average distance to collect water for domestic use for the majority lies between 400 m and 1000 m which is contrary to the planned distance in water policy 2002 which requires the distance to be below 400 m and also there is frequent occurrence of water borne diseases such as diarrhoea due to lack of water treatment caused by wrong traditional beliefs. This imply that there is poor context in which the water policy is implemented. It is therefore recommended that the government through its ministry of water should supply tap water in the study area but also educate villagers on the importance of taking care of those water taps.

Secondly, the findings showed that no sufficient and adequate water infrastructure in the study area. The central government as the main actor of contribution in implementing the water policy is participating very low in water development projects; meaning that infrastructures are not sufficient and adequate to put in place for domestic water supply. Therefore the Local government through Mvomero District Authority together with various stakeholders such as NGOs working in the study area should increase water infrastructures in the study area.

Thirdly, the findings tell us that though there is community involvement in water policy implementation process yet there is negative community response in contribution in kind and cash for maintenance and running of water infrastructures due to mainly unreliability of domestic water supply. But also poor leadership in some villages for example Mafuru and Lubungo villages contribute to poor involvement of the community in water development projects. It is recommended that more education on the importance of contributing money for the maintenance of infrastructure should be regularly offered by village water committees, community development department from Mvomero District Authority, and related NGOs working in the respective district as well. Also other means of involvement such as provision of skilled labour, maintenance of facilities and membership of community management should be practiced by Mvomero District Authority in collaboration with Village leadership.

Lastly, findings showed that the community in the study area is not satisfied with water supply services. That is caused by inadequate water infrastructures, poor water quality especially from the seasonal sources of water and untreated water from the shallow wells and boreholes, water scarcity mostly during dry season likewise, longer distances travelled to fetch water. It is therefore recommended that water sources should be improved; more water taps should be added in the area. This could be done also by joint cooperation with both MORUWASA and Mzumbe University. In which for MORUWASA Mindu dam could be enlarged to be in a position to supply water in the study area. For Mzumbe University, its water source and storage tanks could be expanded such that it is in a position to supply water to the study area. In this way there will be satisfaction with water supply services in the study area.

5.3 Suggestions for

Further Research

This research assessed the implementation of water policy 2002 in Mvomero district, Morogoro - Tanzania. However, this study was carried only in Mvomero district, it is therefore suggested that this study could be done in other parts of the country in order to make comparisons with Mvomero district. By doing so, those studies may come up with other factors and better ways of maintaining water infrastructures other than the mentioned ones and hence will help to improve the involvement of the community in implementation of water policy 2002.

REFERENCES

- Abebaw, D., Tadesse, F., Mogues, T.(2011).*Access to Improved Water Source and Satisfaction with Services: Evidence from Rural Ethiopia*: retrieved from <http://www.ifpri.org/sites/default/files/publications/ifpridp01044.pdf> on 22 August 2014
- Ademun, S.R.(2009).*Domestic water supply: An evaluation of the impacts; challenges, and prospects on women in rural households in Uganda*, Solvegaton 10, SE-22100. Lund: Lund University Press,
- Ajayi, A.R; Ugwu, C.C. (2008).*Rainwater harvesting for agriculture and domestic supply in Enugu North Agricultural Zone, Nigeria*, AESON JOURNAL-African Journals Online, Vol. 12 (1) retrieved from www.ajol.info/index.php/jae/article/...33406 on 22 August 2014
- Anderson, J. E. (1975).*Public Policy Making*. London: Thomas Nelson and Sons Limited.
- Bardach, E. (1977). *The implementation game*. In S. Z.Theodoulou& M. A. Cahn (Eds.), *Public policy: The essential readings*. NJ: Prentice Hall: Upper Saddle River.
- Bartram J. (2003).*Water, sanitation and Health Programme:Quantity, Service Level and Health*. Geneva, Switzerland:Iwa publishing.
- Brewer, G. D. (1974). *The policy sciences emerge: To nurture and structure a discipline*. Santa Monica, California: Stanford university press.
- Chung, K.,Lounsbury, D. W. (2006). *The role of power, process, and relationships in participatory research for statewide HIV/AIDS programming*. USA: Elsevier Ltd. Chicago. Retrieved from <http://www.sciencedirect.com/science/article> on 30th Sept 2014
- Dahlgren, L,Emmelin, M., &Winkvisk, A.(2004).*A Qualitative Approach*. Stockholm: Umea University Press.

- De Groff, A., & Cargo, M. (2009). *Policy Implementation: Implications for evaluation*. Washington D.C.: Oxford University Press.
- Derthick, M. (1972). *New towns in town: Why a federal program failed*. Washington D.C.: Urban institute Press.
- Gbadegesin, N., & Olorunfemi, F. (2007). *Assessment of Rural Water Supply Management in Selected Rural Areas of Oyo state*. Nairobi: African Technology Policy Studies Network (ATPS).
- Hill, M. (1993). *The Policy Process :A Reader*. London: Harvester Wheat sheaf Ltd.
- Jansz, S. (2011). *A study into rural water supply sustainability in Niassa province, Mozambique*, Water Aid. **Retrieved from** www.wateraid.org/publications on 30th September 2014
- Jenkins, W. I. (1978). *Policy analysis*. London: Martin Robertson Ltd.
- Kothari, C. (2004). *Research methodology: Methods and Techniques*. New Delhi, India: New Age International.
- Laswell, H. D. (1956). *The decision process: Seven categories of functional analysis*. University of Maryland: College Park.
- Mvomero District Council (2014). *Mvomero District Profile*: Morogoro.
- Mvomero District Council –SDC, (2014), *Mvomero District Socio-Economic Profile*: DED's Office Mvomero-Tanzania.
- Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. New York: Addison- Wesley publ.co.
- O'Toole, L. J. (2000). *Research on policy implementation: Assessment and prospects*. Journal of Public Administration Research and Theory, 10(2): Washington D.C.: Oxford University Press.
- Ottoson, J. M., & Green, L. W. (1987). *Reconciling concept and context: Theory of implementation*. Vancouver B.C.: Jones & Bartlett publishers.

- Peters, B. G. (2001). *The future of governing*. Washington D.C.: University Press of Kansas.
- Pressman, J. L., & Wildavsky, A.B. (1973). *Implementation* (3rd ed.). Berkeley: University of California Press.
- Pressman, J.L. & Wildavsky, A.B. (1984). *Implementation: how great expectations in Washington are dashed in Oakland* (3rd ed). Berkeley: University of California Press.
- Rural Water Supply Network Executive Steering Committee (2010). *Myths of the rural water supply sector, Perspectives No 4*.
<http://www.rwsn.ch/documentation/skatdocumentation.2009-07-27.8158674790/file> retrieved on 30th Sept 2014
- The World Bank Research Observer, Vol. 8, No. 1 (Jan., 1993), *The Demand for Water in Rural Areas: Determinants and Policy Implications*. Washington D.C.: Oxford University Press.
- United Nations Department of Economic and Social Affairs (2010) .*The Millennium Development Goals Report*.<http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf> retrieved on 30th Sept 2014
- United Republic of Tanzania (2002), *National water Policy*. Dar es Salaam: Government Printers.
- United Republic of Tanzania (2013), *MKUKUTA Annual Implementation report 2012/2013*. Dar es Salaam: Government printers.
- United Republic of Tanzania (2013), *2012 Population and Housing census*. Dar es Salaam: Government Printers.
- WaterAid in Mozambique (2010) *2010 – 2015 Country Strategy*. London: WaterAid Press.
- World Health Organization (2003). *Domestic Water Quantity, Service Level and Health*. UK: Loughborough University press.

APPENDICES

APPENDIX I: QUESTIONNAIRE

Dear Sir/Madam.

My name is Malboard Mathew Kapinga from Mzumbe University. Currently I am carrying out a research to assess the implementation of National water policy (2002) on the accessibility of domestic water supply at Sangasanga, Lubungo and Mafuru villages in Mvomero District. I kindly request you to respond to this questionnaire which aims at accomplishing the study. The information given will be utilized for academic purposes. My intention is to give recommendations to all authorities concerned with water provision services in rural areas of Tanzania.

Instructions

Please respond to the researcher for the correct answers.

Village:

Responsible for water

Q1: Who is responsible for fetching water for domestic use? man/woman

Q2: What is your age?

Q3: What is your education level and occupation?

Q4: What is your spouse education level and occupation?

Q5: With how many people do you live in the household (age and gender)?

Q6: How many of your kids are attending to school (preprimary school, primary school, secondary school, tertiary school)?

Q7: Are there other members/children in the household who help with collecting water?

Q8: Are you satisfied about the water supply services and why?

Very satisfied – satisfied - undecided – dissatisfied – very dissatisfied

Main water sources

Q9: What are the main water sources used for domestic use? And are these water sources well maintained?

very bad – bad - average – good – very good

O Well (pumped/hand pumped, (1)

Protected/unprotected)

O Machine drilled borehole (2)

O Spring (protected/unprotected) (3)

O Pond/reservoir (4)

O Stream/canal/river (5)

O Public tap (protected/unprotected)(6)

O House tap (7)

O Rain harvesting source (8)

O Super marked/water collector (9)

O Others: ... (10)

Q10: Why do you choose these sources?

Q11: Is the water considered clean or contaminated of the different water sources? Does the water need after treatment and what method do you use (such as boiling)?

Q12: Are there water sources which are not functional that you previously used?

Collection time

Q13: How long does it take to collect the water for each water source you use?

Q14: How far are these water sources located from the compound?

Q15: What are the conditions of the road you use to the water sources (is the road accessible by car/motorcycle/bicycle, asphalted/ground road)?

Very bad – bad – average – good – very good

Q16: What is the travelling method you mostly use to collect water (on foot or by means of transportation such as motorcycle, car, bicycle)?

Q17: When do you collect mostly the domestic water (time of the day) and why?

Q18: What is the average queuing time at the water source? Depends on what?

Water quantity

Q19: What is the amount of water you collect each day for domestic use?

Q20: How much water does each resident use per day in this household?

Q21: What are the main domestic water uses?

Water price

Q22: Do you have to pay for the water? At which water source and how much per litter?

Q23: What is the household monthly income and/or how much of your budget goes to water?

Thanks for your profound contribution towards this study.

APPENDIX II: INTERVIEW GUIDE FOR HOUSEHOLDS

Dear Sir / Madam,

My name is Malboard Mathew Kapinga from Mzumbe University. Currently I am carrying out a research to assess the implementation of National water policy (2002) on the accessibility of domestic water supply at Sangasanga, Lubungo and Mafuru villages in Mvomero District. I kindly request you to respond to this Interview guide which aims at accomplishing the study. The information given will be utilized for academic purposes. My intention is to give recommendations to all authorities concerned with water provision services in rural areas of Tanzania.

Instructions

Please respond by writing the correct answer in the brackets provided against the given options and fill in the blanks in the space provided.

SECTION A: PERSONAL INFORMATION

Name of Ward:

Name of Village:

1. Respondent's Sex

- a. Male []
- b. Female []

2. Respondent's Age

- a. 15 – 24 []
- b. 25 – 34 []
- c. 35 – 44 []
- d. 45 – 54 []
- e. 55 and above []

3. Respondent's Education level

- a. Primary education []
- b. Secondary education []
- c. College/University []
- d. Others (none, pre-primary, adult education)

SECTION B: Context of water policy implementation

Qn 4.In your opinion, how would you regard the level of community awareness on the implementation of water policy in your community?

- a) Very good []
- b) Good []
- c) Average []
- d) Poor []

If the answer is poor give reasons

.....

.....

.....

Qn5.What is the average distance from one household to the water collection points for domestic use

- a) Below 400m []
- b) Between 400m and 1000m []
- c) More than 1000m []

Qn 6.Are the households in this village/ward normally boiling potable water?

- a) Yes []
- b) No []
- c) I don't know []

If the answer is No give reasons

.....

.....

.....

Qn7 . Who is responsible in day to day running of water provision services in this village/ward

- a) Village government []
- b) Su-village government []
- c) Village water committee []
- d) Sub- village water committee []

Mention the responsibilities of the appropriate body in the question above

.....

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.....

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.....

.....

Qn 8. How many people on average are enjoying water provision services from the water collection points put in place in this village

- a) Below 250 people []
- b) Between 250 and 500 people []
- c) More than 500 people []

Section C: Availability and adequacy of water infrastructure

Qn 9. Who participated in the construction of water infrastructures for provision of water for domestic use in this village/ward

- a. Central government/Local Authority []
- b. Non-governmental Organizations []
- c. Donor []
- d. Community []

Qn10 .

Are the available water infrastructures for domestic water supply in this village/ward adequate?

- a) Very good []
- b) Good []
- c) Average []
- d) Worse []

Qn 11. How can water provision services be improved in this village/ward

- a) Construction of new water provision infrastructures []
- b) Additional water provision infrastructures put in place []
- c) Rehabilitation of the available water infrastructures []
- d) All of the above. []

Section D: Nature and extent of community involvement

Qn12.How is the community involved in the implementation of water policy?

.....
.....

Qn13. To what extent does the community participate in the operations and maintenance (O&M) of the water infrastructures once they are broken?

- a) Good []
- b) Average []
- c) Poor []

If the response of the community is poor give reasons

.....

.....

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Qn14. What are the factors that contribute to low community contribution towards operations and maintenance (O&M) of broken water infrastructures in this village/ward

- a) Lack of good leadership at sub village, village and ward level []
- b) Existence of multi-parties []
- c) Norms and culture []
- d) Low income of the community []

Section E: Level of satisfaction of water service to consumers

Qn 15. Based on the available water infrastructures are the community satisfied with the water provision services in this village/ward?

- a) Satisfied []
- b) Average []
- c) Not satisfied at all []

If not satisfied give reasons

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Qn16.How often does the community purchase water for domestic use?

- a) very often []
- b) occasionally []
- c) rarely []
- d) Not at all []

Give reasons that force the community to purchase water for domestic use

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Qn17.What is the average consumption of water per person per day?

- a) 5-15 ltrs []
- b) 15-25 ltrs []
- c) More than 25 ltrs []

Qn18.Is the amount of water mentioned in the previous question enough for daily human consumption per day?

- a) Enough []
- b) Not enough []

If the answer is not enough give reasons

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Thanks for your profound contribution towards this study.