

**CONTRIBUTION OF COMMUNITY PARTICIPATION IN
ENSURING SUSTAINABLE WATER SERVICE DELIVERY:**

**A CASE OF PEOPLE LIVING AROUND MINDU DAM IN
MOROGORO MUNICIPAL COUNCIL**

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**By
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**A Dissertation Submitted in partial Fulfillment of the Requirements for Award of
Master's Degree of Public Administration and Management (MPA) of Mzumbe
University**

2015

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled; **Contribution of Community Participation in Ensuring Sustainable Water Service Delivery: A Case of People Living Around Mindu Dam in Morogoro Municipal Council**, in partial fulfillment for award of Master's Degree of Public Administration and Management (MPA) of Mzumbe University

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I, Anna P. Maeda, 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.

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I understand that I can not mention each and every one on this single page. But I register my sincere appreciation to everyone who supported me in one way or the other to complete this work.

DEDICATION

To my loving husband Aloyce Gervas, you are my inspiration. I love you.

LIST OF ABBREVIATION

CM	-	Community Management
CP	-	Community Participation
DAWASA	-	Dar es Salaam Water and Sanitation Authority
EWURA	-	The Energy and Water Utilities Regulatory Authority
MORUWASA	-	The Morogoro Urban Water Supply and Sanitation Authority
NAWAPO	-	National Water Policy
SDIA	-	Supply Driven Implementation Approach
TASAF	-	Tanzania Social Action Fund
URT	-	United Republic of Tanzania
UN	-	United Nations
UNDP	-	United Nations Development Program
USAID	-	United States Agency for International Development
WASH	-	Water and Sanitation for Health
WB	-	World Bank
WHO	-	World Health Organization

ABSTRACT

This study focused on the contribution of community participation in ensuring sustainability of water service delivery a case of the people living around Mindu dam in Morogoro municipal council. The study intended to answer three research questions which are: What are the ways of community participation in ensuring availability and sustainability of water service delivery in Mindu area; What is the attitude of the Mindu community towards participating in conserving Mindu Dam and What are the challenges facing the Mindu community in conserving the Mindu Dam as a source of water in Morogoro Municipal Council. Case study design was employed to address the research questions.

The findings revealed that there were very minimum or rather no active participation of the Mindu area community in ensuring sustainable water service delivery at Mindu Dam. The attitude of the people surrounding the Mindu Dam was found to be positive, since they were willing to be involved in planning, making decision and implementing conservation of the catchment areas for sustainability of water service delivery. Challenges such as poor relationship between MORUWASA and communities surrounding catchment areas and Absence of alternative for earning income for some of community members apart from practicing agriculture around catchment areas were noted among others.

It is recommended that education should be given to the community members to raise awareness on environmental conservation as well as finding alternative source of income to the community members rather than depending on the activities that are harmful to the dam like fishing and irrigational activities. Further studies are needed to find out the best way for conserving environment surrounding catchment areas. Also, broader study is needed to include other catchment areas apart from Mindu Dam in other parts of Tanzania to have a wider understanding about contribution of community participation in ensuring sustainability of water service delivery.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This Chapter covers background of the study, statement to the problem, objectives of the study, research questions, scope of the study, justification of the study and significance of the study.

1.1 Background of the Study

Water is a natural resource that plays an important role in socio-economic activities and it impacts on the health of both human being and non living things. This indicates that water is a very important element to the development of both developed and developing countries, although the accessibility of water service differs in these countries.

There is an improved access of water services in developed countries compared to developing countries; a good example is China where 91 percent of its population has access to an improved water service. Community participation strategy has been helping China to improve sustainable water service delivery. The community participates in financing rural and urban water supplies in order to improve its accessibility and attain sustainable water service delivery. The community is involved in different water projects to bring about a sense of ownership and belongingness (Parameswaran Iyer, 2002).

Community participation in ensuring sustainable water service delivery in developing countries is still questionable because it is more theoretical than practical. For example, in most communities of Ghana, depending on the population, a number of people comprising males and females are chosen by some influential members of the community to form the water and sanitation committee (WATSAN) to participate in all activities pertaining to water sources and sanitation. The community has been

participating partially in water service delivery and some communities has to be forced to contribute on water services projects (WaterAid Report, 2006).

Community participation in Tanzania was recognized after decentralization of water supply management in 1990`s which led to the formation of National Water Policy as later revised in July 2002. The Government issued National Water Policy with the main goals to establish a comprehensive framework for sustainable development and management of water resources and for participatory agreements on the allocation of water use (URT, 2002). Community participation is emphasised in the selection of projects, operating and in maintenance through water committees that are charged for water. Community members also have to make cash contributions towards capital costs and contribute their time, labour and local materials (Water Supply and Sanitation Report, 2010).

The main water source for Morogoro municipal is the Mindu dam, with a reservoir of 41,000 m³/d minimum capacity Mindu dam is a reservoir for domestic and industrial use for the Morogoro municipality. It also serves for irrigation and flood control downstream. Water storage facilities of Mambogo are among the oldest ones in the Morogoro Municipal area. It has an area of 400 hectares, maximum depth 11m, and is located 10 km to the South West of Morogoro Municipality off the main road to Iringa in the Southern Highlands (MORUWASA ,2005).

The study therefore intended to reveal the extent to which the community in Mindu area participates in water service to ensure they are supplied with sustainable water within and outside the area.

1.2 Statement of the Problem

Water is a key driver for sustainable growth and poverty alleviation. It plays a vital role to almost all productive activities such as agriculture; industry, energy and transport. The water sector is among the social service projects which have been on top of

Tanzania political agenda and receives huge financial support from donor countries and international financial institutions such as World Bank (URT, 2002).

Tanzania National Water Policy (NAWAPO) of 2002 has stated many issues that aim at ensuring an improved and accessed water service delivery to the people. Apart from its emphasis on improving participation of men, women, youth and children in planning, managing, implementation and development of water sources, NAWAPO provides guideline in many areas such as procedures for safety and ownership of dams, establishment of water quality management and pollution control as well as principles and procedures for managing the quality and conservation of water resources which aims at improving water services delivery to the people. Nevertheless the government of Tanzania has gone through many efforts to ensure sustainable water service delivery. According to NAWAPO (2002), the Government has been controlling water services through The Energy and Water Utilities Regulatory Authority (EWURA), formulation of water authorities on regional basis to operate and manage water services in regions such as Dar es salaam (DAWASA) and Morogoro (MORUWASA).

The Morogoro Urban Water Supply and Sanitation Authority (MORUWASA) as an entity in charge with the overall operation and management of water supply and sanitation services in Morogoro has done many efforts to ensure sustainable water service delivery to the citizens of Morogoro. Mindu Dam receives a greater priority from MORUWASA as it supplies water to 70 percent of the citizens in Morogoro Municipality (MORUWASA, 2015). The authority ensures proper conservation and maintenance of the dam to improve sustainable water service delivery to the people by facilitating planting tree in catchments areas and stopping human activities around reservoir catchments areas. Also, public education through Non Governmental Organizations such as Eastern Arc Mountain Conservation Endowment Fund was provided to the community members around those areas.

Despite of the efforts that have been undertaken to improve sustainable water service delivery, the problem of water pollution still exists at Mindu Dam. The problem has

been contributed by deforestation, farming and grazing near water sources (MORUWASA, 2015). If serious measures won't be undertaken to protect Mindu Dam, there is possibility of the decrease of water depth and water infection that will lead to various effects to Morogoro Municipality water users, such as scarcity of water and eruption of diseases. It is from this understanding the researcher has raised interest to assess the contribution of community participation in ensuring sustainability of water service delivery to the citizens in Morogoro Municipality.

1.3 Objectives of the study

1.3.1 General Objective of the Research

The general objective of the study was to assess the contribution of Community participation in ensuring sustainability of water service delivery to citizens in Morogoro Municipality.

1.3.2 Specific Objectives

- (a) To examine ways of Community Participation in ensuring availability and sustainability of water service.
- (b) To assess the attitude of the community towards participating in conserving the source of water.
- (c) To assess the challenges facing the community in conserving Mindu dam as a source of water.

1.4 Research Questions

- (a) What are the ways of Community participation in ensuring availability and sustainability of water service delivery to citizens in Morogoro Municipality?
- (b) What is the attitude of the community towards participating in conserving the source of water at Mindu dam?
- (c) What are the challenges facing the community in conserving the dam as a source of water?

1.5 Scope of the Study

This study focused on assessing the contribution of the community participation in ensuring sustainable water service delivery.

The study was conducted in Morogoro Municipality since it was not easily to be conducted in the whole country due to time factor and the size of geographical distribution of the population. Morogoro municipality was chosen due to the fact that 70 percent of its citizens consume water that is supplied from the dam which is exposed to pollution due to deforestation, farming and grazing which are conducted near the water sources (MORUWASA, 2015).

1.6 Significance of the Study

This study aimed to assess the contribution of community participation in ensuring sustainability of water service delivery to citizens in Morogoro Municipality. The findings in this study are important to Morogoro Urban Water Supply and Sanitation Authority since will help the authority to take necessary measures to improve the sustainability of water service delivery by ensuring that Mindu Dam is fully protected from pollution. MORUWASA will be able to find out the solutions to challenges that face the community in conserving the Dam as well as getting to know the attitudes of the people concerning their participation in conserving the environment around Mindu Dam.

Also, the findings are useful to the government, particularly the Ministry of Water and Irrigation, since the findings provide the government with understanding on challenges facing the community in conserving the water sources. Therefore, the government will take necessary measures to ensure that all water sources for domestic consumption are kept safe from all sorts of pollution.

1.7 Justification of the Study

- i. The study will help the government of Tanzania to execute the goal number 7 of Millenium Development which states “*Ensure environmental sustainability*” and under target 7C which states “*Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation*” by enabling the government to be aware of the attitude of the community and the challenges that faces the community in participating to ensure sustainable water service delivery at Mindu Dam and enable solutions to be formulated to increase community participation and enable environment conservation of the Mindu Dam, this will improve water service delivery because environment conservation cannot be attained without the community involvement in environmental conservation.
- ii. The study will help to realize The National Strategy for Growth and Reduction of Poverty (NSGRP), MKUKUTA in its Swahili acronym, Cluster II which states “*Improvement of Quality of Life and Social Well Being*” on the goal which focus on “*Access to clean, affordable and safe water, sanitation, decent shelter and a safe and sustainable*” by using the findings of this study to increase community participation in conserving Mindu dam so as to attain access to clean, affordable and clean water.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews various literatures on community participation and it presents the theoretical review and empirical literatures of other researchers and writers related to the study.

2.2 Theoretical literature Review

2.2.1 Community Participation in Environmental Conservation

Community participation is a process by which individuals, families or communities assume responsibility for local problems and develop a capacity to contribute to their own community development (Singh, 2005). According to UNDP, community participation fell out in the late 1960s and early 1970s primarily because of the wide spread disenchantment with the top down bureaucratic approach to development and its failure to distribute benefits. During this era community participation came to be associated with coerced labour, although it was then called voluntary.

According to Schouten and Moriarty (2003), community is a group of people living in a geographical defined area, or a group that interacts because of common social, economic, or political interests. It is important for the community to participate in conserving the surrounding environment, since the community is directly affected by the polluted environment. Therefore, the roles of community leaders and other environmental stake holders are very important to ensure that the environments surrounding the water sources are well conserved. Regardless the fact that community comprises people of different social, economic and political status interest groups and they are made up of individuals, the issue of environment conservation should involve all groups of people since the effects of environmental pollution is the disaster of whole

community. Equity is crucial to community management. It implies that, although communities are diverse, everyone in the community should benefit in the same manner from a water supply system. All people surrounding the project, irrespective of their gender and classes should have access to clean water (Schouten and Moriarty, 2003).

Community participation to development has been proliferating in third world countries since 1980's, and it is now an accepted component of projects design among mainstream donor agencies. The advocates and practitioners of the concept proclaim that people's empowerment, local knowledge and community ownership are indispensable ingredients of project success and sustainability. Under label such as 'people's participation', public involvement, community participation`, social mobilization`, self help development`, and `grassroots development`, projects have been initiated on smallholder crop and livestock development, irrigation and water supply alike (Bastian and Bastian, 1996).

In assessing participation, it is argued that the adoption of participatory orientation in contemporary mainstream development is a somewhat peculiar turn of events. Demand for participation has their origin in radical politics. The democratization in development has been a long standing objective of radicals in both the developed and the developing world. The aim of this is to prevent adverse impact of normal development on disempowered actors and to generate receptiveness to the interests of the people. In the third world countries there is widespread resistance to development projects that serve the interests of national elites and donor nations or foreign policy. This has precipitated grassroots movements demanding community participation in project planning and decision making (Bastian and Bastian, 1996).

2.2.2 National Environmental Policy

National environmental policy of 1997 objective in the Water, Sewerage and Sanitation sector is to support the overall national objective of providing clean and safe drinking water to within easy reach, to satisfy other water needs, to protect water sources and to

prevent environmental pollution. In order to achieve this, the following policy objectives shall be pursued:-

- i. Planning and implementation of water resources and other development programmes in an integrated manner and in ways that protect water catchment areas and their vegetation cover;
- ii. improved management and conservation of wetlands;
- iii. Promotion of technology for efficient and safe water use, particularly for water and waste water treatment, and recycling; and
- iv. Institution of appropriate user-charges that reflect the full value of water resources (URT, 1997).

2.2.3 Water Resource Management Act of Tanzania

Water management act of 2009 section 7 assign duty to every person who resides Main land Tanzania to protect water resources.

. “Every person residing mainland in Tanzania shall have a stake and duty to safe gourd and protect water resources and to inform the relevant authority of any activity and phenomenon that may affect the quantity and quality of water” (URT, 2009).

2.2.4 National Water Policy of Tanzania

i. Water and Environment

National Water Policy of 2002 focusing to have in place water management system which protects the environment, ecological system and biodiversity. Water is critical to ecological systems and to the maintenance of the environment. The ecological systems include wetlands, floodplains, estuaries and coastal zones. Such systems serve important hydrological and ecological functions such as biophysical filters, safeguard biological diversity, and maintain sea and freshwater balance. Management of this system is an integral part of water resources management. In order to protect ecological systems and biodiversity which, together, are important part of sustainable water resources system

the following will be undertaken. (i) Water for the environment, in terms of quantity and quality, and levels, and for both surface and groundwater resource shall be determined on the best scientific information available considering both the temporal and spatial water requirements to maintain the health and viability of riverine and estuary ecosystems, and associated flora and fauna. (ii) In order to contain the erosion problem, public awareness campaigns will be carried out on good land use practices.

ii. Water Conservation

National Water Policy of 2002, also focusing to have in place appropriate principles and procedures for managing the quality and conservation of water resources, as well as improve and protect the ecological systems and wetlands. Water resources comprise of rivers, reservoirs, lakes, wetlands, springs and groundwater resources. These resources are used for various social and economic activities. Despite its importance, bad water use practices and degradation threatens sustainability of the resource with potential negative effect to ecosystem integrity, human health, food security, industrial production, and investment in various socio and economic sectors. Conflicts which have already surfaced, for example, in the Pangani and Rufiji Basins are between hydropower production and irrigated agriculture, environment and irrigated agriculture, hydropower production and environment, and upstream and downstream water users.

Additionally, environmental degradation and pollution of water sources from increasing discharge of untreated and partially treated municipal and industrial wastewater contribute to the deterioration of the quality of the water resources. If measures are not taken to control the situation our resources will be severely degraded, which will deprive future generations their basic right. Lack of multispectral and integrated approach, lack of comprehensive water resources information base and inefficient use of the resource aggravates the problem.

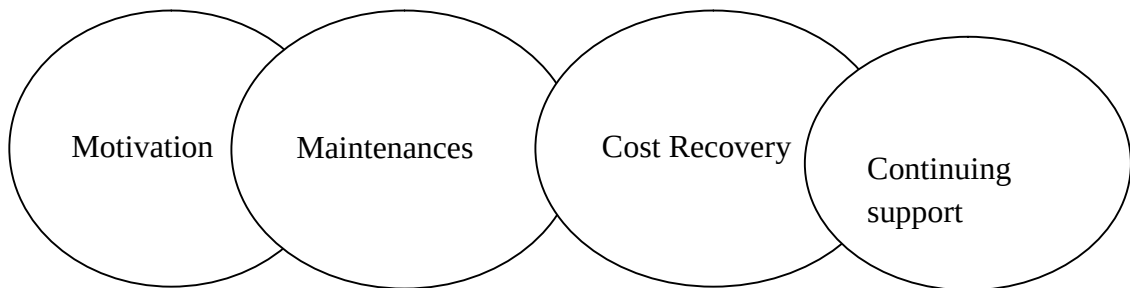
In order to ensure that water resources are used in a sustainable manner, conserved and that ecological system and biodiversity are sustained the following will be undertaken: (i) Water management approaches will focus on how best water is used beneficially and efficiently. Water allocations and use shall be carried out considering the principles of sustainability so that the resources remain viable for the use of the present and future generations. (ii) Trading of water rights, application of economic incentives and pricing for water use shall be gradually built into the management system as a means or strategy for demand management and water conservation. (iii) Urban and rural water supply entities, hydropower producers, irrigators, industries, mining operators, etc are required to improve the efficiencies of their water abstractions and distribution systems to avoid undue wasteful use of the resource. (iv) Where feasible and necessary, rainwater harvesting, wastewater recycling and desalination of seawater will be employed as a means of increasing the availability of water resources.

iii. Water quality management and pollution control

Moreover, National Water Policy of 2002 focusing to have water resources with an acceptable quality. Pollution from point and non-point sources of water resources is responsible for the deterioration of the quality of water, makes water unusable and its treatment very costly. Increased human activities including poor land use practices, as well as uncontrolled abstractions and pollution of water bodies' impact on the quantity and quality of the available water resources. Generally, the options for using water depend on its water quality. Then proliferation of water hyacinth in Lake Victoria, and in some rivers and reservoirs, is a result of high nutrient levels. In order to remedy this water shall be protected from pollution and harmful depletion through the following measure: (i) Water quality monitoring and assessment will be undertaken systematically so as to identify extent and status of the quality of the water resources so that problems are detected early and remedial actions employed timely. (ii) The quality and quantity of water resources will be dealt with conjunctively, and will be assessed comprehensively. (iii) The "polluter pays" principle shall apply in conjunction with other legal and

administrative actions. Standards for in-stream flows, industrial effluents and other waste discharges for meeting environmental objectives will be developed and enforced. (iv) Practical and cost effective water quality and pollution control monitoring programs (including networks) will be developed and implemented. Factories, municipal authorities, large irrigation schemes and mining operations will be required to collect and keep accurate records of the quality of effluents into receiving water bodies. (v) Creation of public awareness in the importance of protecting water resources from pollution including that resulting from inappropriate use of agrochemicals will be undertaken.

Figure 2.1: Sustainability chain



Source: Carter and Howsam (1999).

The four aspects in the chain are considered very important for the sustainability of community managed schemes. Regarding motivation, it is said that motivation of communities to utilize new sources (water schemes or toilets) is crucial for sustainability. On the other hand where local communities have a role in maintenance activities of the water schemes, training (management and technical aspects) and backup from the government, NGOs and private sectors is necessary for sustaining the schemes. Cost recovery is very important for sustainability of water schemes because spare-parts, tools, replacement units and training all need money. Finally, continuous support from the government, NGOs and private sectors is vital for sustainability of community managed water and sanitation schemes (Carter and Howsam, 1999).

2.3 Sustainability concept

Sustainability in this study refers to the ability of community to maintain and sustain water service delivery activities. In water projects, we cannot talk of sustainability without mentioning operation and maintenance issues” (Kasiaka, 2004: 41). Safe and clean drinking water supply is sustainable only if, the water consumed is not overexploited but naturally replenished, facilities maintained in a condition that ensures reliable and adequate portable water supply. The benefits for the water supply should continue to be realized over a prolonged period of time (David and Brikke, 1995: 53). Richard (1999) defined sustainability as a continued delivery of a particular service. Richard emphasized on the need to involve all stakeholders in consumption and cost recovery strategies to ensure delivery of high quality services and sustainable development projects. Abraham (1998) on the other hand, views sustainability of water projects as a continued flow of water at the same rate and quality, as when the supply system was designed. To him if water flows, then all elements of sustainability would be in place. Kimberly (1998) maintains that sustainability in water projects means, ensuring water supply services and interventions continue to operate satisfactorily and they generate benefits over time as expected. He further pointed out that, sustainability is all about ability to operate and maintain initial project service standards. However, to achieve this it has to be planned from the very beginning of the project, so as to ensure prerequisites for long-term sustainability and strategies are aimed at seeing that sustainable projects are in place and are in good working order.

2.4 Factors Affecting CP and Sustainability of Projects

Parameswaran (1999) argues that a range of characteristics such as technology used to implement project activities can be effective to CP. The more complex the technology, the less participation. The question of technology has direct link with sustainability of project services especially when operational and maintenance costs are to be met by the beneficiary communities. Another factor according to Parameswaran is on human and financial resources, as they are vital when it comes to meeting operational and

maintenance costs. Furthermore, transparency accounts for the degree of CP. For this matter community members will actively participate if benefits are clearly articulated and obtained immediately at the beginning of the project design. For the case of the water project, people expect to see domestic water points installed or boreholes drilled and in operation. Moreover, administration structure is equally important. Thus, if projects allow users' contribution and if they are flexible, well coordinated and managed well at the local level, with free flow of information then people will automatically participate. Women's involvement in project activities and capacity building are also essential to sustain project-initiated services. This is because in water projects women are the main stakeholders. Therefore, women participation and leadership positions in WC are inevitable for sustainable water projects (Mbugua et al, 1993: 14).

2.5 Empirical Literature Review

This section reviews various other studies related to community participation toward sustainable water service delivery as follows:

The study by World Bank (1995) showed that, community participation approach in managing several projects was applied for the sake of fostering development. For example in Yemen, World bank conducted a study in year 2004 which showed that FAO implemented hundred of projects over 23 years ago using participatory approaches including a number of large scale rural development projects. Yemen was considered to be an example of community participation in water management in 1990s during the construction of small dams with donors support. It developed training activities to build their own management and technical capabilities. In Kenya experience showed that, about 30 percent of 10 million rural dwellers have access to improved water served by community managed water supply projects, many of which were developed by self-help groups.

The study done by Binswager, (2003) suggested that the community must see the programme as their own and find ways of keeping it to improve their lives.

In order for such projects like water delivery to be sustainable, there is the need to include plans for the communities to manage both internal and external resources to provide greater sense of ownership. It has also been suggested that sustainability rests on flexible project designs which takes advantage of local knowledge and practices and promote community ownership. Such measures help programme designers to adapt to changing circumstances and respond quickly to new opportunities that may emerge (Haziri and Heather, 2007).

Rubin and Rubin (1986) study revealed that people must learn that they are not helpless, do not depend upon government and business or await decision made by others. Community members should act together to control their own lives. Sustainability could be achieved when the development process is owned and managed by the local community itself and not from outside help.

In his study, Amedzro, (2005) indicated that in the 1960s and 70s, members of communities participated actively to provide basic social services such as wells, schools and path or roads leading to and from the community. However, these days, community rely solely on the government, with the assumption that the government know the social problems and social services needed by communities including water service, as well as the solution to these problems, thus, making the government become the sole planner, implementer, monitor and evaluator of social services meant for their development. The citizens therefore remained passive recipients of development programmes, which are usually planned and executed for them by their government. This approach to development is associated with many challenges such as unsuitable programmes and projects, wrong citing of projects, corruption and limitations, all mainly due to the non-involvement of the recipients in the planning, implementation and even in the assessment of the impact of the programmes on the beneficiaries (Amedzro, 2005).

According to World Bank report, (1996) community members these days are actively involved in all aspects of projects and programmes rather than being passive recipients of development initiatives including that of ensuring sustainability of water service.

According to this report, community participation motivates the sense of ownership of development initiatives by the members and eventually ensures the sustainability of the initiatives. One development initiative where community participation had been stressed is by the Northern Ghana Network for Development through the use of the Community Scorecard as a participatory, monitoring and evaluation tool to empower community members to assess the impact of social services rendered to them including water service (Robinson, 2005).

Kaminyoge (2008) conducted a research focusing on the assessment of citizen participation in decision making through village statutory meetings in LGA in Tanzania a case study of Mbarali district. The study found that there was poor citizen participation in decision- making since statutory meetings in sub council levels (village) were not held as required. There were some challenges hindering citizen participation such as inadequate awareness of the importance of statutory meetings, leadership weaknesses and lack of feedback from above administrative organs. These challenges were regarded as reasons contributing to poor citizen participation in decision making.

In RTI (2012) report, lack of clean drinking water and sanitation systems is a severe public health concern in Ghana, contributing to 70 percent of diseases in the country. Consequently, households without access to clean water are forced to use less reliable and hygienic sources, and often pay more. Water supply and sanitation sector in Ghana faces a number of challenges, including very limited access to sanitation, intermittent supply, high water losses and low water pressure (WaterAid Report, 2006).

According to the Joint Monitoring Program in water supply and sanitation of UNICEF and WHO, access is about 86 percent in both rural and urban for water and 14% for sanitation in Ghana (RTI report, 2012). According to this report water supply and sanitation infrastructure in Ghana is insufficient, especially in rural areas in Ghana. However, in reference to the multi-donor Africa MDG assessment access to an improved water source is much lower (56%) and access to improved sanitation is higher (35%)

Baboon (2008) carried out the study on citizen participation in policy making and implementation in Mauritius with reference to Port Louis'' local government. The study applied survey questionnaire, interview, qualitative participative observation study and comprehensive literature as method of data collection. The finding of the study shows that citizen participation in policy making and implementation in Port Louis'' local government is regarded to responsiveness of public needs. Ultimately, citizen participation at local levels is affected by the mechanism of control. However the study found that the present citizen participation at Port Louis'' local government is not adequate. The study provides the principal factors that can contribute towards the improvement of citizen participation in the making and implementation of policy in Port Louis'' local government. Those factors are as follows: effective information dissemination, provision of civic education, effective communication and publicity of public hearing.

2.6 Synthesis and Research Gap

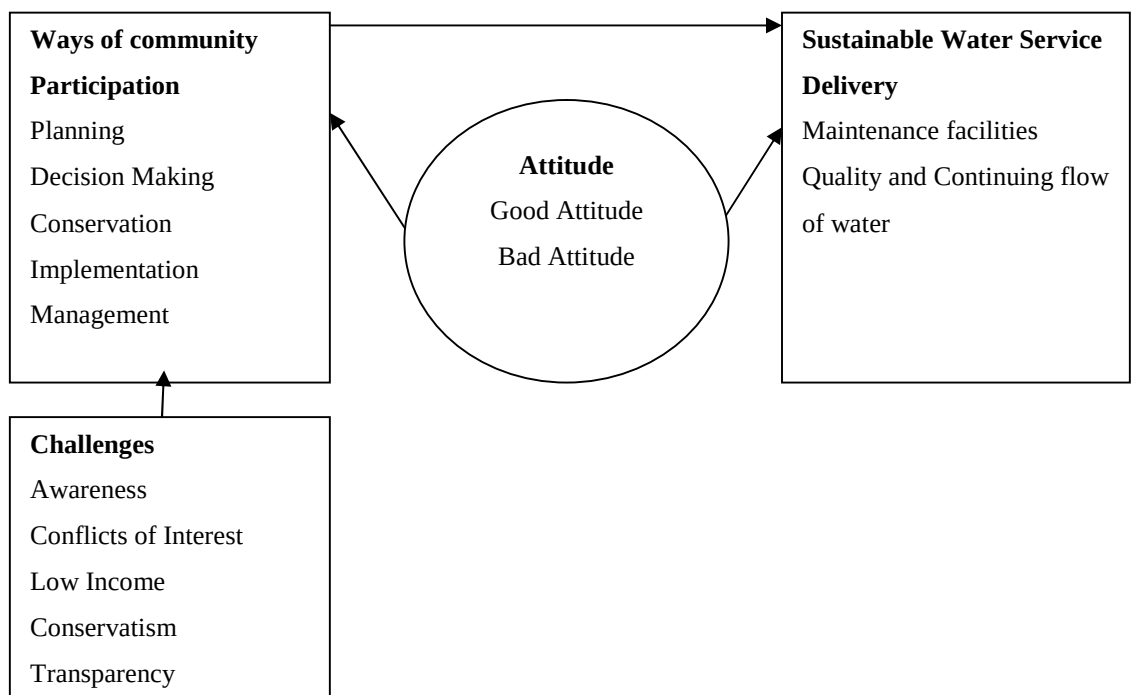
Studies by other researchers that have been reviewed focused on community participation, citizen participation in policy making, water supply and sanitation and lack of clean drinking water and sanitation systems. But there are few studies which specifically focused on assessing the contribution of community participation in ensuring sustainability of water service delivery to citizens; this may have left the question on the contribution of community participation in ensuring sustainability of water service delivery. Therefore, research on contribution of community participation in ensuring sustainability of water service delivery to citizens is still considered important to bridge the gaps left by other studies.

2.7 Conceptual Frame Work

This section presents a conceptual framework from which the analysis of this study was made. The purpose of the study was to assess contribution of community participation in ensuring sustainability of water service delivery in Morogoro municipality, Tanzania. The study developed a framework that indicates a relationship of variables based on the

assumptions derived from the reviewed literature. The framework assumes that Sustainable water service delivery in Morogoro Municipality can be achieved through conservation of Mindu Dam catchment areas; the conservation is possible if the communities around the catchment areas will participate in environmental conservation through planning, decision making and implementation of best ways of preserving environment. Also the government through MORUWASA will be responsible to manage the Dam catchment areas by insuring that there is practice of the best ways of preserving environment by providing education to people in the communities around Mindu catchment areas.

Figure 2.2: Conceptual Framework



Source: Researcher, 2015.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the descriptions of the entire research process undertakings towards attaining the study findings. It entails the research design of the study, target population, study area, sample and sampling technique, research methods and tools of data collection as well as data analysis methods.

3.2 Research Design

A research design is an arrangement of conditions for collection and analysis of data in a manner that aims at combining relevance of the research purpose with economy in procedures (Kothari, 2004). It includes an outline of what the investigator will do from writing hypotheses and their operational implications to the final analysis of data (Kerlinger, 2002). For the purpose of this study, a case study design was employed because of its attribute to collect an in-depth investigation of the study, hence a design suited to collect data and information on the contribution of community participation in ensuring sustainable water service delivery in Mindu Dam.

3.3 Study Area

This study was conducted in Morogoro municipality, specifically at the Mindu Dam catchment areas; Figure 3.1 shows the map of Mindu Dam catchment areas. Morogoro Municipality has been selected because its people are facing water scarcity and about 70% of the people depend on water coming from the Mindu dam (Kihila 2013).

[illegible]

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3.4 Target Population, Sample Size and Sampling Technique

3.4.1 Target Population

Population is the totality of any group of units which have one or more characteristics in common that are of interest to the researcher (Omari, 2011). It involves a larger group of people, institution or thing that has one or more characteristics in common on which a study focuses. The target population for this study includes all residents in Morogoro Municipality that depend on water service from Mindu Dam.

3.4.2 Sample of the Study

According to Ary et al (1996), a sample is a small group or subset of a population, which a researcher selects for the purpose of the study and from which generalization is made about the characteristics of the population. In this study, sample of the study involved four wards surrounding Mindu Dam namely Kauzeni, Kasanga, Mzinga and Ngelengele whereby each wards constituted of 15 community members and one (1) ward executive officer. Also, the study involved four (4) officials from MORUWASA including one (1) managing director and three (3) heads of departments as among the study sample. Hence the study has the total of 68 respondents as revealed in table 3.1 who were involved in the study as in line with Prince (2005) who argues that a sample of 30 elements and above that is representative all the groups involved in the study is sufficient for the study. The study believed that the selected sample comprised of respondents with relevant and adequate information for the study.

Table 3.1: Sample of Wards, Community Members, Ward Executive Officers and MORUWASA Officials Involved in the Study

C/No	Wards	Community Members	Ward Executive Officers	Total
1	Kauzeni	15	1	16
2	Kasanga	15	1	16
3	Mzinga	15	1	16
4	Ngelengele	15	1	16
5	MORUWASA officials	Managing Director	Heads of Departments	
		1	3	4
TOTAL				68

Source: Field Data, 2015

3.4.3 Sampling Techniques

Sampling is the process of obtaining information about an entire population by examining only a part of it (Kothari 2005). The Researcher employed purposive sampling technique in selecting sample of the study.

3.4.3.1 Purposive Sampling Technique

Omari, (2011) argued that purposive sampling techniques involve picking units most relevant or knowledgeable in the subject matter and study them. According to the nature of this study purposive sampling technique was employed to select sampled wards surrounding Mindu Dam catchment area, community members, wards executive officers as well as MORUWASA officials. The method was employed due to the fact that community members around Mindu Dam involved themselves into various socio-economic activities including farming, fishing and livestock keeping to the extent that it was difficult to locate every community member randomly or equally and involve in the study. However, not all community members who were visited by the study were ready to give out information, hence the study necessitated to employ purposive sampling technique as the method that suited the nature of the study.

3.5 Types and Sources of Data

The researcher used both primary and secondary data in this study. The primary data are those data which are collected afresh and for the first time and thus happen to be original in character and the secondary data are those which have already been collected by someone else and which have already been passed through the statistical process (Kothari, 2004). The primary data was collected through structured interview and questionnaire while secondary data was collected from theoretical and empirical literature such as the journals, books, research reports and internet.

3.6 Primary data

The nature of the study determines the methods of collecting data (Kothari, 2004). This study employed three methods of data collection namely: interview and questionnaire.

3.6.1 Interview

An interview is a method of asking questions orally to the key participants (Evaluation et al, 2009). Interview was used to collect primary data from wards executive officers and MORUWASA officials on how they involve the community in ensuring availability and sustainability of water service delivery around Mindu Dam as well as the challenges they faces in involving the community. The interview guides were prepared and employed through the two ways systematic conversation between the researcher and the respondent. The interview method was used by a researcher to obtain relevant information for the study. The interview method was chosen because the study desired to get in-depth information of the study from wards executive officer and MORUWASA officials. A guide of interview used is attached as Appendix II.

3.6.2 Questionnaire

The study employed questionnaire method to collect data from Mindu community members where by a set of questions were prepared and distributed to the respondents in order to fill-in the information about their view on community participation in ensuring availability and sustainability of water service delivery at Mindu Dam.

3.6.3 Secondary data

This method was used to collect secondary data from both published and unpublished materials related to community participation in ensuring water service delivery to the community, other researches done concerning community participation in water service delivery as well the background of the community participation in Tanzania.

3.7 Data analysis Technique

3.7.1 Quantitative data

The study employed both quantitative and qualitative data analysis procedures. In quantitative data analysis the study used Statistical Package for Social Sciences (SPSS) version 16 in analyzing the frequencies and percentages of the people who participate in one way or another in conserving the Mindu dam catchment areas as well as the attitude of people in participating in conserving Mindu dam in different ways as seen in Chapter four below.

3.7.2 Qualitative data

Qualitative data analysis will be done by using thematic analysis procedure for analysis qualifiable data of the study.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter presents analysis and presentation of the findings in relation to the purpose of the study, research objectives and research questions. Quantitative data analysis was done by using the Statistical Package for Social Science (SPSS) for window software package version 16.0. Frequencies were run to determine the percentage of responses for various items. Qualitative data on other hand was conducted through thematic analysis. The purpose of the study was to examine the contribution of community participation in ensuring available and sustainable water delivery at Mindu Dam, in Morogoro Municipality, Tanzania.

4.2 Demographic characteristics of Respondents

Among the 68 respondents from the questionnaires and interviews. This implies that men are more involving in different human activities, such as fishing and agriculture which contribute to pollution of Mindu Dam catchment areas. The same observation was done by Greene (2005) who revealed that women in Africa are deprived from fishing and agriculture activities in Eastern of Tanzania.

Table 4.1: Distribution of respondents by sex

Sex	Frequency	Percentage
Male	37	54.0
Female	31	46.0
Total	68	100.0

Source: field data (2015)

Both men and women living around Mindu Dam were almost equally involved to participate in the study. The study wanted to get varied experiences from both gender about how community members living around Mindu Dam catchment areas affects and being affected by the presence of the dam. The study revealed that, both men and women living around Mindu Dam had socio-economic activities that were in one way or another, relating to the presence of Mindu Dam. Many of youth and elders living around Mindu Dam, involved themselves in fishing activities. However, it was realized that, fishing activities performed by men were not safe in the sense that, they use nets which destroys fish generation and some use poison during fishing. Apart from that, men were also witnessed to involve in activities such as brick making in environment surrounding Mindu Dam, which in fact destroys environment.

Women on the other hand involved themselves in vegetation farming that involves irrigation. To some extent, communities were also claiming the kind of farming as an enemy to the sustainability of safe water service at the dam. As in line with Greene (2005), it is high time for the community, regardless of their gender, to stop all activities that may in one way or another, endanger the safety of the dam as the major source of water in Morogoro Municipality.

4.3 Ways of Community Participation in Ensuring Availability and Sustainability of Water Service Delivery at Mindu Area

The study examined on the ways through which the community around Mindu Dam participated in ensuring the water service is available and sustainable. Out of 68 respondents who were involved in the study, 31 respondents the same to 45.6 percents declared to avoid human activities around Mindu Dam as the means to ensure availability and sustainability of water service. 15 respondents, which amounted for 22 percents confessed to manage waste as the way to ensure water service is safe, available and sustainable. Apart from that, 14 respondents which counted for 20.6 percent revealed to protect water and environment around Mindu Dam through planting of trees

and other vegetations, while only eight (8) respondents, equal to 11.8 percent showed experiences on protecting Mindu Dam as an important source of safe water through fire control. Table 4.2 simplifies the results on the ways through which community involved in ensuring availability and sustainability of water service delivery.

Table 4.2: Ways of Community Participation in Ensuring Availability and Sustainability of Water Service Delivery at Mindu Area

Ways	Frequency	Percent
Planting of Trees	14	20.6
Waste Management	15	22
Avoiding human activities around the dam	31	45.6
Fire control	8	11.8
Total	68	100

Source: Field data (2015)

Results from the study revealed that the major way through which majority of the people in the community employed in order to ensure water service is safe, available and sustainable was through avoiding of human activities around the Mindu Dam area. Regardless of whether the authority prohibited human activities around the dam or not, majority of the people were not witnessed to involve themselves in human activities such as agriculture activities around the dam. However, the study observed fishing activities that took place in Mindu Dam although fishermen were guided by rules that obliged them to keep the environment around the Dam clean. The result of the study are in line with the study by World Bank (1995) which showed that, community participation approach in managing water sources was applied for the sake of fostering development including that of avoiding human activities around water sources. For example in Yemen, World bank conducted a study in year 2004 which showed that FAO implemented hundred of projects over 23 years ago using participatory approaches including educating the people on the importance of protecting water sources by avoiding human activities around water sources to ensure its sustainability. It is high time for the government, stakeholders and community who are water beneficiaries to

ensure that water sources are kept safe for the welfare and development of our communities.

Waste management as the way to ensure availability and sustainability of water service delivery was also exploited by some of community members and ward authority. The purpose of managing waste was to ensure water source from Mindu Dam is not polluted. Pollution of water at Mindu Dam as revealed by one the respondents, not only endangers peoples' health but also lives of living things living in water. It was advised that people living near water sources particularly Mindu Dam, should be carefully enough to avoid throwing of waste into water. In parallel to that, societies living around Mindu Dam should avoid directing their sewage system into the dam. The study done by Binswager, (2003) suggested that the community must see sources of water as their own and find ways of keeping it to improve their lives. In order for such projects like water service to be sustainable, there is the need to include plans for the communities to manage both internal and external resources to provide greater sense of ownership.

Minimal effort on planting trees and other vegetations around Mindu Dam was also a barrier towards ensuring availability and sustainability of water service delivery. Very few people seemed to involve themselves in planting of trees along Mindu Dam area. Wards authority however, had poor plans and policies on ensuring the Dam surrounding is protected. Most of vegetations around Mindu Dam are aged. This makes the sense that, there were no programs for planting new tree and bad enough, there were people cases of cutting natural trees around the dam area that has existed for long time. One of the respondents argued that;

“Most of the people around this dam are not aware on the importance of planting new trees. They just make the use of the dam without remembering that trees are key factors for preserving this dam. Leaders themselves are not influencing people to preserving dam. That is the challenge for ensuring sustainability and availability of water service in our place”

Rubin and Rubin (1986) study revealed that people must learn that water sources and its environment in general are key areas to be protected. People should not depend upon government to initiate programs for protecting environment; rather, they have to take important steps in ensuring the environment stays safe for the benefit of current and future generations. Community members should act together to control their own lives. Water sustainability could be achieved when the development and planning process is owned and managed by the local community itself and not from outside help.

Concerning setting of fire around Mindu catchment areas, one of the respondents argued that there has been a series of burning of vegetations around dam in years ago and which caused the environment to loose its naturality. This resulted to soil erosion and decrease of water depth in dam. Due to that case however, the community around the Mindu Dam took serious steps to control fire including making by laws that prevented people to burn the trees including collecting fines for people who abuse the law.

The study findings has been comparable to Kaminyoge (2008) study that focused on the assessment of citizen participation in decision making through wards statutory meetings in LGA in Tanzania a case study of Mbarali district. The study found that there was poor citizen participation in decision- making on wards development issues. However, people were highly involved to contribute their efforts in disaster cases such as prevention of fire in forests and near sources of water. Due to the study finding, it is high time for the local government authorities to involve community in decision making and planning of issues that affects day to day peoples' lives including that of ensuring safe, availability and sustainability of water service delivery.

More over practices such as bricks making, irrigational agriculture and illegal fishing as has been revealed by a study was a major challenge which has to be taken into account and serious measures has to be take so as to ensure Mindu Dam stays protected for the benefit of the community.

4.3.1 Attitude of the Communities towards Participation in Conserving Mindu Dam Catchment Areas

The study strived to assess the attitude of the community towards participation in conserving water sources at Mindu Dam. The interview with Wards Executive Officers, managing director and heads of departments from MORUWASA revealed that majority of people in the community surrounding Mindu Dam have positive attitude towards conservation of water sources . One of heads of departments had the following to say:

The communities surrounding Mindu Dam are willing to participate in conserving environment, but it has become difficult for them because their livelihood depends on the activities which are harmful to the dam. The dam is demarcated 500 miters from the banks in an area of 26 square kilometers. This means that people need to move from the area to protect water sources of Mindu Dam.

Another head of department had the following to comment:

I do not think the communities surrounding water sources of Mindu Dam have positive attitude toward environmental conservation, because those that occupy land surrounding the catchment area have been compensated several times due to highway construction, electricity pylons and the Mindu Dam itself. As there is little enforcement, people keep moving back into the area or sell their land to someone else. The pollution of water sources for Mindu Dam has been from agriculture activities, mining and human settlement in the catchment area.

Managing Director had similar remark as following:

Community surrounding catchment areas do not have positive attitude for Environmental conservation surrounding water sources of Mindu Dam. I am saying this because some of them were compensated to move from the area but are still there and they continue to involve in activities which increase pollutants in Mindu Dam such as mining gold and could potentially be using mercury although none has been detected to date. Mining also results in a high level of erosion and this has washed into the reservoir, also reducing its capacity. Cultivation

upstream is causing further siltation to the dam and bush fires reduce vegetation and increases erosion.

One of the Wards Executive Officers had the following to say:

Pollution of the Mindu Dam has been problematic... For example in my ward, kasanga people have positive attitude in conserving environment around the Mindu Dam but being having positive attitude itself is not a solution, people need alternative for the activities they do surrounding the dam, because they depend on agriculture, fishing and forest for improving their livelihood.

The findings from questionnaire data show that majority of people in the communities surrounding Mindu catchment areas have positive attitudes toward participation in conserving water sources as presented in table 4.3 below.

Table 4.3: Attitude of the Communities towards Participation in Conserving Water Source

Attitudinal statement	Strongly agree(%)	Agree (%)	Total	Disagree (%)	Strongly disagree (%)	Total	don't know (%)	Total
Participation in conserving water sources	34.3	65.7	100.0	0.0	0.0	0.0	0.0	0.0
Decide with leaders on how to preserve water sources	34.3	65.7	100.0	0.0	0.0	0.0	0.0	0.0
Participation in planning and making decisions on water sources conservation	37.1	54.3	91.4	0.0	00	0.0	8.6	8.6
Contribute time ,efforts and even money to conserve water sources	28.6	40.0	68.6	0.0	17.1	17.1	14.3	14.3

Source: Field data (2015)

The findings from questionnaire and interview show that communities surrounding water sources of Mindu Dam have positive attitude toward environmental conservation, but they fail to involve in environmental conservation because agriculture is the most dependable means of livelihood and source of income by the majority in Mindu Dam catchment area, agrochemicals are used without considerations of their fate in the environment, humans and animals. The findings show that some of people have been compensated with fund to evacuate from the area surrounding Mindu Dam, but unfortunately the particular people are still making their livelihood surrounding the Dam, this imply that there is weak governance of Mindu Dam, this is why the compensated people for evacuation are still involving in human activities surrounding the Mindu Dam. The same observation was done by Ndibalema (2011) on his study about Environmental Impact Assessment for Nyumba ya Mungu Dam, the study revealed that there is weak supervision of environmental conservation around Nyumba ya Mungu catchment areas, since there is environmental and health impacts of agrochemicals which are used by farmers to grow crops around pangani river, the chemicals are transported in the river then deposited in Nyumba ya Mungu Dam. The agrochemicals used were fertilizers, insecticides and fungicides.

4.3.2 Challenges Facing the Communities and MORUWASA in Conserving Mindu Dam Catchment Areas

The study strived to assess challenges facing the community and MORUWASA in conserving Mindu Dam catchment areas. The interview with Wards Executive Officers, Managing director and heads of departments revealed that there are several challenges facing MORUWASA and communities surrounding Mindu Dam catchment area in conserving the environment. One of heads of departments had the following to say:

There is poor relationship between the MORUWASA and the communities surrounding Mindu Dam catchment areas, for example fishermen at Mindu Dam are mistreated by MORUWASA, this has brought negative attitude to the people who live near the Dam against MORUWASA. According to MORUWASA, nobody is supposed to live or

do any human activities close to the Dam, for the reason that the Dam has to remain free from pollutants. In return, the people who mostly are the fishermen they feel denied of the benefits of the Dam. This has brought a challenge particularly on convincing people to involve in environmental conservation around Mindu Dam catchment areas.

One of heads of departments had the following remarks:

The Mindu Dam is one of the major water infrastructures in the Ruvu River system. First challenge is pollution of the reservoir from land use activities such as agriculture, mining, and human settlement in the catchment area. Another challenge associated with the construction of the dam is the change in flow regime of the Ngerengere River downstream of the dam, as it is has changed from perennial to seasonal and salinity levels increased.

Another head of department had the following to say:

The big challenge is the practice of human activities around the Mindu Dam; people are mining gold and could potentially be using mercury, although none has been detected to date. Mining also results in a high level of erosion and this has washed into the reservoir, also reducing its capacity. Cultivation upstream is causing further siltation to the dam and bush fires reduce vegetation and increases erosion. There is also a high level of pollution from agricultural chemicals and fertilizers, mining contamination and human waste from latrines from when people were living around Mindu Dam. Other upstream impacts are Mzumbe University, Tanzania Military and surrounding areas

Head of Business department had the following to reveal:

The Mindu Dam is facing a lot of challenges; for example, downstream communities in the basin are often affected by upstream pollution. For instance, agriculture and mining pollution upstream of the Mindu Dam is a continued problem, as its pollution come from washing, bathing, and industrial effluents. Downstream impacts include sedimentation from erosion as a result of deforestation and agricultural practices and contaminated water. This reduces access to safe drinking water and water for livestock and agriculture, and investment must be made in other water resources such as ground water.

Managing director had the following to comment:

Also the Ministry of Water and Irrigation through the Central Water Board has pointed out that one of the threats facing Mindu Dam is sedimentation. There is no adequate scientific data on the level or rates of siltation so the dam's sustainability in terms of its capacity is uncertain. Also, It is very hard to deal with situation at Mindu area since there is political interference for example, the whole Mindu area up to Sangasanga village was supposed to be an open space, and all people who were living there before were compensated and moved. As time went on, people started living there, and are backed up by the politicians. That is why until today the Mindu area has no water pipes because those people are living there illegally, they are not supposed to be leaving in those areas, providing them water pipe would mean they are allowed to live there.

The findings from the interview show that MORUWASA and communities surrounding the water has been facing several challenges in conservation of the Mindu Dam catchment areas. The findings show that there is a poor relationship between the MORUWASA and the communities surrounding Mindu Dam, this imply that the poor relationship emerging because these people are illegally occupying the land, and they suppose to evacuate for purpose of living the place safe from environmental pollution. Therefore, it becomes a challenge for MORUWASA to provide them with education for environmental conservation; working together with these people is reflecting like legalising their stay around Mindu Dam. Also, the findings show that pollution of the reservoir from land use activities such as agriculture, mining, and human settlement in the catchment area has been difficult to control due to the large catchment area for Mindu Dam, the area is about 300 square kilometers, this is implying that the very large area which is occupied by different human activities, it becomes difficult to control unless to evacuate people from this huge area which is very expensive for the government to afford. Mzumbe University and Mzinga militant camp are some of public institutions found in the area which contribute largely to pollution of water sources for Mindu Dam.

Moreover, industries in the Morogoro Municipality is a very big challenge for conserving Mindu Dam catchment areas; the industries are found upstream along the Ngerengere River, the industries release effluents that do not comply with pollution standards and taint the river for domestic, irrigation and livestock users downstream. For example, Ngerengere communities, including Kimango Farm, suffer from effluent pollution by industries in Morogoro Municipality. It was noted that pollution levels upstream have affected the fishing industry in the Ngerengere River and a serious concern was voiced at Ngerengere town about the consistent pollution in the river. The findings imply that there has been poor industrial compliance to national standards in the Morogoro Municipality regarding effluent discharge, and the pollution of the Mindu Dam might have been problematic due to various institutions involved and its coordination might have been complicated. This is why concerted efforts, including those by NEMC, have been made to intervene and address industrial pollution in Morogoro Municipality have been unsuccessful.

The same observation was done by Gondwe (2001) on his study about water, households and rural livelihoods in Tanzania. The study revealed that pollution is the big challenge in conservation of water sources, for example, the water supply for Dar es Salaam (from the Morogoro mountains) is affected by siltation and chemical pollution associated with commercial agriculture (e.g. sisal processing) in the headwaters. In addition, there is a growing problem of contamination from mercury used in artisanal gold mining at the area around Mindu Dam. Also, within the Pangani basin there is a potential pollution problem due to the increase of population and development activities, coupled with decrease of river flows. Moreover, sewerage treatment facilities in Arusha and Moshi municipalities are not effective, resulting in pollution of some of the rivers draining into the basin. Furthermore, deforestation and land degradation resulting from agricultural activities and uncontrolled livestock numbers have resulted in erosion and sedimentation in the catchment areas of Nyumba ya Mungu Dam.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECCOMENDATIONS

5.0 Introduction

In this Chapter the researcher provides the summary, conclusion together with general recommendations that the researcher believes to be necessary so as to improve community participation in ensuring sustainable water service delivery.

5.1 Summary of the Study

The purpose of the study was to assess the contribution of community participation in ensuring available and sustainable water service delivery. The study objectives was (i) to find out what ways do the community participate in ensuring availability and sustainability of water service delivery (ii) to examine the attitude of the Mindu community towards their participation in conserving the Mindu Dam and the (iii) to assess the challenges that faces the community in conserving the Mindu Dam.

The study employed a case study design to address the research objectives. Based on the findings it was revealed that there was low community participation on the environmental conservation around Mindu Dam catchment areas. Also, the findings for the second objective revealed that the attitude of the people around Mindu Dam catchment area had positive attitude towards ensuring of availability and sustainability of waters services delivery, but they have been failing to conserve the environment surrounding the dam because their livelihood depends on activities which termed to be the source of environmental pollution in the Mindu Dam catchment areas.

On the third and the last objective of this study, the findings revealed that there are number of challenges that faces the Mindu community in conserving the Mindu dam as the source of water such as poor relationship between MORUWASA and people around

Mindu Dam catchment areas because MORUWASA considers these people living illegally around the catchment areas and has been involving in stopping them from fishing activities. Therefore, the people around the catchment areas have negative attitude toward the MORUWASA. Another challenge was political interference in the sense that, some people who lived around the catchment areas had been compensated for evacuation. Later on they resumed activities around the catchment areas with the backups from politicians.

5.2 Conclusion

Based on findings for every research objective presented, analysed and discussed in this research report, the study concluded the following:

(i) Ways of Community Participation in Ensuring Availability and Sustainability of Water Service Delivery at Mindu Area.

Results from the study revealed that the major way through which majority of the people in the community employed in order to ensure water service is safe, available and sustainable was through avoiding human activities around the Mindu Dam area. Also, waste management as the way to ensure availability and sustainability of water service delivery was also exploited by some of community members and ward authority. The purpose of managing waste was to ensure water source from Mindu Dam is not polluted. Planting of tree was also as technique through which community members around Mindu Dam employed to conserve the environment. However, very few people involved themselves in planting of trees along Mindu Dam catchment area. Also, wards authorities around Mindu Dam catchment areas took serious stapes to control fire including making by laws that prevented people to fire the environment surrounding catchment areas including collecting of fines for people who abuses that law.

(ii) The Attitude of the Community Members towards Participating in Conserving Mindu Dam as a Source of Water.

The study revealed that majority of people in the community surrounding Mindu Dam have positive attitude towards conservation of water sources, they also decide with leaders on how to preserve water, participate in planning and making decisions on water sources conservation, contribute their time; efforts and money to conserve the water sources and the communities are informed by their leaders about water sources conservation plans respectively. On another side however, the study revealed that communities surrounding catchment areas do not have positive attitude for environmental conservation surrounding water sources of Mindu Dam in the sense that their livelihood depends on the activities which are sources of the pollution of the dam. In parallel to that, the findings show that some of people have been compensated with fund to evacuate from the area surrounding Mindu Dam, but unfortunately the particular people are still making their livelihood surrounding the Dam, this imply that there is weak governance of Mindu Dam, this is why the compensated people for evacuation are still involving in human activities surrounding the Mindu Dam.

(iii) The Challenges Facing the Community in Conserving Mindu Dam as the Source of Water

The study revealed several challenges facing the community in conserving Mindu Dam as the source of water. One of the challenges was poor relationship between the MORUWASA and the communities surrounding Mindu Dam catchment areas. According to MORUWASA, nobody was supposed to live or do any human activities close to the Dam, for the reason that the Dam has to remain free from pollutants. In return, the people who mostly were the fishermen felt denied of the benefits of the Dam. This has brought a challenge particularly on convincing people to involve in environmental conservation around Mindu Dam catchment areas.

Another challenge was the practice of human activities around the Mindu Dam; such as agriculture, mining, and human settlement in the catchment area. Also, another challenge associated with the construction of the dam is the change in flow regime of the Ngerengere River downstream of the dam, as it has changed from perennial to seasonal

and salinity levels increased. In parallel to that, industries in the Morogoro Municipality is a very big challenge for conserving Mindu Dam catchment areas; the industries were found upstream along the Ngerengere River, the industries release effluents that do not comply with pollution standards and taint the river for domestic, irrigation and livestock users downstream.

5.3 Recommendations

Basing on the findings of the study which are presented in this research report, the following recommendations are therefore provided:-

(i) Ways of Community Participation in Ensuring Availability and Sustainability of Water Service Delivery at Mindu Area.

The study recommends that, it is high time for MORUWASA authority who is basically responsible to control the safety of the Mindu Dam, to establish good relationship with community members and involve them in planning for dam conservation. Also, it is very important to provide education to community members living around Mindu Dam catchment on the importance of conserving their environment. In parallel to that, the study recommend that communities around Mindu Dam catchment areas should stop involving themselves in human activities around the Mindu Dam area because it is source of water feeds majority of communities in Morogoro Municipality. Also, waste management as the way to ensure availability and sustainability of water service delivery should also be taken into account by community members surrounding Mindu Dam catchment areas. Ward authorities surrounding the dam area should initiate programmes of planting of trees along Mindu Dam catchment area. It is also advised that, wards authorities around Mindu Dam catchment areas should take serious steps to control fire and pollution around Mindu Dam including making by laws that prevents people to destruct environment including collection of fines for people who abuses the laws.

(ii) The Attitude of the Community Members towards Participating in Conserving Mindu Dam as a Source of Water.

The study recommend that, the attitude of community members around Mindu Dam catchment areas should be raised through being involved in deciding on how to preserve water, participate in planning and decision making on water sources conservation, and the communities should be informed by their leaders about water sources conservation plans respectively.

(iii) The Challenges Facing the Community in Conserving Mindu Dam as the Source of Water

The study recommend on the necessity of having good relationship between the MORUWASA and the communities surrounding Mindu Dam catchment areas. This will make easy the communication, education and directive processes between MORUWASA and communities around Mindu Dam towards ensuring safety and sustainability of the water service delivery. Also, people living around Mindu Dam catchment areas should stop human activities such as agriculture, mining, and human settlement around the Mindu Dam so as to ensure that water project benefits majority of Morogoro Municipal inhabitants. In parallel to that, industries in the Morogoro Municipality that were found upstream along the Ngerengere River that release effluents that do not comply with pollution standards and taint the river that passes towards Mindu Dam should be stopped or find a good control of its sewage systems and leave the dam and its water sources safe.

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APPENDICES

Appendix I: QUESTIONNAIRE

Mindu Area.

Introduction

Dear Participant,

My name is Anna P. Maeda and I am a Master's student at Mzumbe University.

Thank you for agreeing to participate in fulfilling this questionnaire in connection with my Master degree research at Mzumbe University. The research aims to investigate the contribution of community participation in ensuring sustainable water service delivery.

Your participation in the research is voluntary. You are able to withdraw from the survey at any time and to request that the information you have provided not be used in the research. Any information provided will be confidential. Your identity will not be disclosed in any use of the information you have supplied during the research. The questions on this questionnaire are only for academic purposes.

Personal Particulars

Please tick the correct response(s) in the provided boxes

[i] What is your age group?

(a) Under 25 ()

(b) 26-35 ()

(c) 36-45 ()

(d) 46-55 ()

(e) Above 56 ()

[ii] What is your gender?

(a) Male

(b) Female

What is your Occupation.....

[iii] How long have you been leaving in Mindu area?

- (a) Under 5 (five) years ()
- (b) 6 - 10 years ()
- (c) 11 – 15 years ()
- (d) 16 -20 years ()
- (e) Above 20 ()

Community participation

1. Do you participate in water projects that aims at ensuring availability and sustainability of water service delivery at Mindu dam ?

- (a)Yes ()
- (b) No ()

If Yes, How do you participate?

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

2. Do you get informed on different plans and progress about water projects concerning Mindu dam?

.....

3. Are consulted by your leaders or water committees (to give out you views, offering some options and the like) concerning water services delivery at Mindu Dam?

.....

4. What is your contribution in conserving and maintaining the Mindu dam?

- (a) Labour ()
- (b) Cash ()
- (c) Opinion and views ()
- (d) Maintenance and conservation ()
- (e) I don't contribute in any way ()

5. Do you act together with your leaders in making decisions and in carryout decisions on water issues at Mindu Dam?

- (a) Yes ()
- (b) No ()

6. Are there any community meetings?

- (a) Yes ()
- (b) No ()

7. What is discussed in those meetings?

- (a) Water Project issues ()
- (b) Non Water issue (),

Please mention.....

8. Are you still participating in such meetings?

- (a) Yes ()
- (b) No ()

9. Is every one free air his/her views in the meeting?

- (a) Yes ()
- (b) No ()

10. Is everyone in the community contributing to the public meetings discussion?

(a) Yes ()

(b) No ()

11. Are opinions of every one heard and respected?

(a) Yes ()

(b) No ()

12. Who had the final say in the public meeting.....

13. Peoples attitude

14. Are there any problems encountered by this community in preserving the Mindu dam as a source of water?

(a) Yes ()

(b) No ()

If yes what are those problems?.....

15. What do u suggest should be done to increase your (community) Participation of the people in improving water service delivery at Mindu Dam

THANK YOU.

DODOSO

Utangulizi

Naitwa Anna P. Maeda, mwanafunzi wa shahada ya Uzamili ya Menejimenti na Utawala Chuo Kikuu Mzumbe. Nakushukuru kwa kukubali kushiriki katika utafiti wangu kwa kutumia dodoso hii katika kutafuta taarifa kuhusu mchango wa ushiriki wa jamii katika upatikanaji wa huduma endelevu ya maji.

Ushiriki wako katika utafiti huu ni wa hiari. Unaweza kujitoa wakati wowote na kuomba taarifa ulizotoa zisitumike katika uandishi wa ripoti ya utafiti huu. Taarifa yoyote utakayoitoa ni siri na itabaki kua siri. Taarifa zako binafsi zitakua ni siri na hazitatolewa wakati wowote wala kutumika kama sehemu ya utafiti. Maswali katika dodoso hili ni kwaajili ya utafiti huu wa kitaaluma pekee.

A. Taarifa Binafsi

Weka tiki katika Jibu Sahihi

- (i) Uko katika kundi gani la rika?
 - (a) Chini ya 25 ()
 - (b) 26-35 ()
 - (c) 36-45 ()
 - (d) 46-55 ()
 - (e) Zaidi ya 56

- (ii) Tafadhali taja jinsi yako
 - (a) Mwanaume ()
 - (b) Mwanamke ()

(iii) Unafanya Kazi gani?.....

(iv) Umeishi eneo la Mindu kwa muda gani?

(a) Chini ya miaka mitano

(b) Miaka 6-10

(c) Miaka 11-15

(d) Miaka 15-20

(e) Zaidi ya miaka 20

Ushiriki wa jamii.

1. Je, unashiriki katika miradi ya maji inayolenga kuongeza upatikanaji endelevu wa maji katika bwawa la Mindu?

(a) Ndio ()

(b) Hapana ()

Kama jibu ni Ndio, eleza jinsi gani unashiriki.....

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

2. Je, unapata taarifa kutoka kwa viongozi husika juu ya mipango mbalimbali na maendeleo ya kuimarisha upatikanaji wa maji(miradi ya maji) katika bwawa la Mindu?

(a) Ndio ()

(b) Hapan ()

3. Je, unapewa nafasi ya kutoa maoni yako kuhusu uimarishwaji wa upatikanaji wa mai katika bwawa la Mindu ?
 - (a) Ndio ()
 - (b) Hapana ()
4. Je, unatoa mchango gani katika kuhifadhi na kutunza bwawa la Mindu?
 - (a) Nguvu kazi ()
 - (b) Fedha ()
 - (c) Maoni()
 - (d) Uhifadhi na utunzaji wa bwawa ()
 - (e) Sitoi mchango wowote ()
5. Je, unashiriki pamoja na viongozi wako katika kufanya maamuzi yahasuyo maji katika bwawa la Mindu ?
 - (a) Ndio ()
 - (b) Hapana ()
6. Je, kunafanyika vikao vya kijiji ?
 - (a) Ndio ()
 - (b) Hapana ()
7. Vitu gani vinaongelewa katika vikao hivyo?
 - (a) Mambo ya maji na bwawa la mindu
 - (b) Mambo yasihusu maji na bwawa la mindu

Tafadhali taja mambo hayo

.....

.....

.....

.....

8. Je, bado unashiriki katika vikao hivyo ?

(a) Ndio ()

(b) Hapana ()

9. Je, kila mwanakijiji anapewa fursa ya kutoa maoni yake katika vikao hivyo?

(a) Ndio ()

(b) Hapana ()

10. Je, maoni yako yanasikilizwa na kuheshimiwa ?

(a) Ndio ()

(b) Hapana ()

11. Ni nani mwenye uamuzi wa mwisho katika vikao hivyo?

.....

12. Mtazamo wa watu

	Mtazamo	Kiwango		
		nakubali sana	Nakubali	Sikubali
1.	Ushiriki katika kutunza vyanzo vya maji			
2	Kuamua pamoja njia ya uhifadhi wa bwawa la mindu			
3	Kupewa taarifa juu ya miradi ya maji			
4	Kushiriki katika kupanga na kufanya mamuzi ya usuyoyo maji na bwawa la Mindu Kuchangia muda wako ,nguvu kazi na pesa kuhakiki uhifadhi na uimarishaji wa maji katika bwawa la mindu			

13.Je, mnakumbana na changamoto gani katika kuimarisha uhifadhi wa bwawa la mindu kama chanzo cha maji?

.....

.....

.....

.....

14. Unadhani nini kifanyike ili kuongeza ushiriki wa jamii (watu au wanakijiji) katika kuimarisha huduma bora za maji katika bwaa la Mindu?

.....

.....

.....

.....

ASANTE SANA

APPENDIX II

INTERVIEW GUIDE

1. What ways do the community participate in ensuring availability and sustainability of water service delivery at Mindu dam?
2. Do you inform the community on different plans and progress about water projects that aims at increasing availability and sustainability of water service delivery at Mindu dam?
3. Is the community consulted to give out their views, offering some options and the like concerning water services delivery at Mindu Dam?
4. What is the community contribution in the Mindu dam water projects?
5. Do you act together with the community in making decisions and in carrying out decisions on water issues at Mindu Dam?
6. Are there any community meetings aimed at improving water service delivery and preservation of Mindu Dam?
7. What is the community attitude towards participating in preserving the source of water at Mindu dam?
8. Are there any problems encountered by the community in preserving the Mindu dam as a source of water?
9. Do you think community participation in planning, implementation and management of water project leads to the effective and sustainable of water delivery?
10. What do u suggest should be done to increase community Participation of the people in improving water service delivery and preservation of Mindu Dam

THANK YOU.