

**COMMUNITY PARTICIPATION IN WATER DEVELOPMENT PROJECTS IN
MBEYA DISTRICT, TANZANIA**

BY

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ABSTRACT

A study on community participation in water development projects was conducted in Mbeya district in Mbeya region. The study investigated community participation in rural domestic water development projects. A total of 120 respondents from six villages were interviewed using interview schedule. Interview with key informants and focus group discussions (FGDs) were also conducted. The analysis of collected data was done using the Statistical Package for Social Sciences (SPSS). This study found that the level of participation in selected rural water development projects undertaken was low. It also found that only 85% of the respondents participated in the implementation of water projects. The study further found that 45%, 37.5%, 32.5% and 30.8% of the respondents respectively participated in evaluation, problem identification, monitoring and decision making. The study also revealed that participation of the community in water projects was hindered by individual, technical and leadership related problems. With respect to sex the study showed that a greater number of males participated in the projects more than females. The respondents with income from Tshs 20,000 – 29,999 and those in households contributing less than Tshs. 499 participated more in water projects than the other category of respondents. The data also showed that a greater number of the respondents in the age group of 25 – 44 years participated in the water projects more than those in the other age groups. The Chi – square tests indicated that the level of participation in water projects activities was associated with sex, age, household income and village size at 0.05 percent level of significance. Furthermore, the data showed that there was no statistically significant relationship between the level of participation in water projects and marital status, level of education and main occupation at 0.05 percent level of significance.

DECLARATION

I, ANNA MARIANUS NKONJERA do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work, and has not been or concurrently being submitted for a higher degree award in any other University.

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Date

The above declaration is confirmed

Dr. D. Mwaseba
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Date

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LIST OF ABBREVIATIONS

CP	Community Participation
DANIDA	Danish International Development Agency
DED	District Executive Director
DPLO	District Planning Officer
DSI	Development Studies Institute
DWE	District Water Engineer
DWP	Domestic Water Point
FGD	Focus Group Discussion
GOT	Government of Tanzania
GWP	Global Water Partnership
IRC	International Resources Centre
JLP	Joint Learning Projects
MoW	Ministry of Water
NGO	Non-Governmental Organization
REPOA	Research on Poverty Alleviation
PR	Principal Researcher
SNAL	Sokoine National Agricultural Library
SPSSs	Statistical Package for Social Sciences
SSA	Sub Saharan Africa
SUA	Sokoine University of Agriculture
TDHS	Tanzania Demographic and Health Survey
TShs	Tanzania Shillings (currency)
UNDP	United Nations Development Programme
MDGs	Millennium Development Goals
UN	United Nations
UNCHS	United Nations Centre for Human Settlements
UNICEF	United Nations Children's Fund
UPE	Universal Primary Education
URT	United Republic of Tanzania
USD	United State Dollar
VEO	Village Executive Officer
VWC	Village Water Committee
WEO	Ward Executive Officer

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Water is a basic natural resource for socio-economic development in rural areas. It is fundamental for various socio-economic development activities such as domestic, livestock, mineral processing, hydropower production and navigation. Water is much useful in industries as well as in agricultural activities like irrigation (Falkenmark, 1994).

According to UN-HABITAT (2003), nearly half of the earth's population does not have enough water to support human needs. Despite efforts made over the past few years, inadequate and poor water supply remains an acute problem in sub-Saharan Africa. The problem seems to be much more serious in rural areas where most of the people are not provided with water services.

Rural water development projects are not new in Tanzania, since they have attracted the attention, albeit varied, of both the colonial and post – colonial administrations. For instance, during the independence period in 1960s the water policy of the government of Tanzania (GOT) was “free, clean and safe water for all”, the objective being to provide clean and safe water to all villages in rural Tanzania by the year 2000. However, the policy failed very badly because many costs were borne by government for maintenance and rehabilitation without involvement of community (MOW, 1997). Following the Arusha declaration in 1967, water was recognized as a public good and the Government undertook to cover all capital costs of investment (Maganga *et al.*, 2002). Despite changes in policy introduced since the 1990s, people are still used to the old policy of free water and government intervention in all operation and maintenance.

Water supply facilities provided without active participation of the beneficiaries in the planning, problem identification, decision making, implementation, monitoring and evaluation are sometimes not properly operated and maintained leading to inadequate provision of clean and safe drinking water (URT, 2002). For example, in Mbeya rural district only 42% of the inhabitants' household communities get clean and safe drinking water.

Generally, there is a clear commitment by the Government of Tanzania for the adoption of participatory approach as a means of empowering people to determine their own future. In this regard, the Tanzania Development Vision 2025 provides a national level guidance of water development projects in the use of participatory approach. According to the Tanzania Water Policy (2002) deliberate efforts must be made to empower the people and catalyze their democratic and community participation in seeking safe and clean water at households' level (URT, 2002).

Therefore, community participation and involvement in a water supply project is one of the key elements of action in project planning, implementation and sustainability in rural areas. In recent years, an increasing number of comparative studies of development projects show community participation is one of the critical components of success, empowering of the poor, ownership and projects development (Hawlett and Nagu, 2001). In principle, many programmes working with people now support the idea of community participation in development (UNICEF, 1982). This study seeks to investigate community participation in water projects with a particular focus of projects implemented in Mbeya district.

1.2 Problem statement

Despite the international and national efforts made over the last three decades to involve local communities in domestic water supply projects, particularly in rural community, the problem is still acute in many developing countries. Community participation in domestic water delivery has been recommended as a way out of retrogressive or stagnant state rural domestic water supply systems (Word Bank, 2001a). The problem as it has been amply shown above lies in the fact that the participation of clientele has been inactive lacking in water projects. It was further noted that, to a certain extent, the problem was mainly due to inadequate participation of local communities in water development projects. For example, during the past thirty years, the participation of water development projects in most Sub Saharan Africa (SSA) countries was the responsibility of community and central government. Unfortunately, many large water projects that were established and managed by community and central governments in SSA failed mainly due to inadequate community participation in planning and implementing such as projects (Word Bank, 2001b). In light of this, the study seeks to investigate community participation in water development projects in Mbeya District.

1.3 Justification of the study

Effective planning and implementation of water projects or water development programmes in rural areas call for, among others, the availability of adequate and reliable data to ensure that the objectives for which they are undertaken are actually realized. The findings from this study are, therefore, expected to contribute in the understanding of factors influencing their participation in the water development project.

It will also fill the knowledge gap in the subject (participation) in relation to the three main parameters: personal, community characteristics and attitudes of the respondents towards participatory approach as opposed to many studies that have attempted to study participation in relation to one parameter only.

1.4 Objectives

1.4.1 General objective

The general objective of the study was to investigate community participation in domestic water development projects in Mbeya district.

1.4.2 Specific objectives

The specific objectives are as follows:

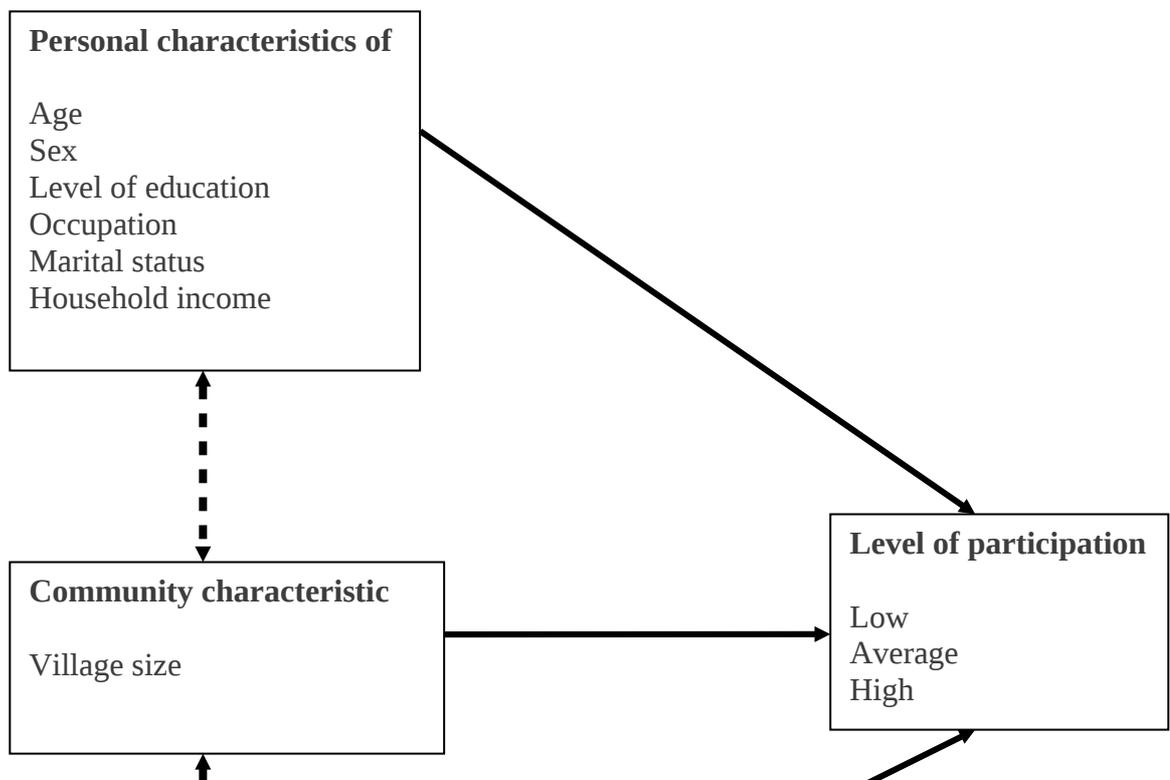
- 1) To determine the level of community participation in rural water supply projects.
- 2) To investigate personal characteristics and community characteristics associated with the level of respondents' participation in water development project.
- 3) To assess the respondent's attitude regarding the concept of participatory approach to carrying out water projects.
- 4) To examine problems that hinder increased community participation in water projects.

1.5 Conceptual framework

According to the conceptual framework in Figure 1 the level of participation is influenced by three independent variables which include personal characteristics (i.e. education level, age, marital status, sex, household income and occupation), community characteristics (village size) and community attitude towards the participatory approach. The dependent variable is the level of community participation.

Independent variables

Dependent variable



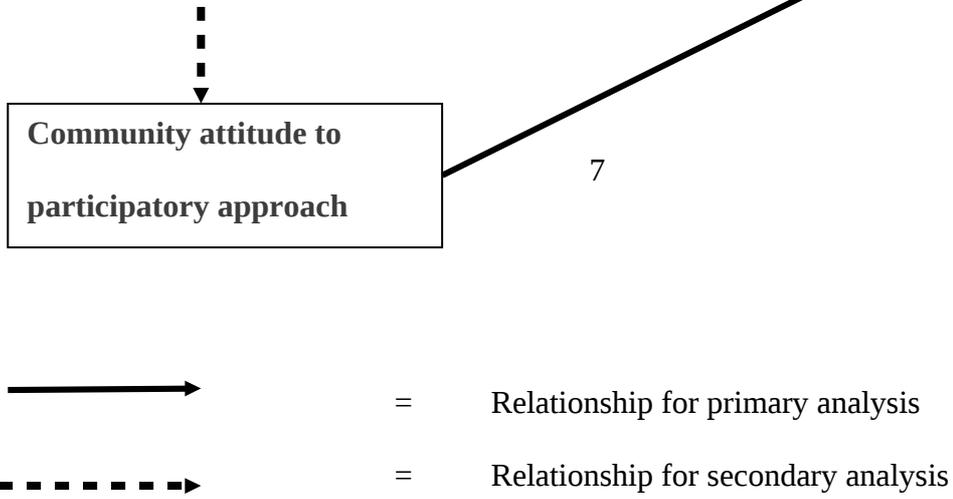


Figure 1: Conceptual framework for analysis study of participation in water projects

1.6 Hypothesis of the study

1.6.1 Null hypothesis

The following hypotheses of the study were tested:

1. There is no relationship between the level of participation in water projects and personal characteristics namely: age, sex, level of education, occupation, marital status and household income.
2. There is no relationship between the level of participation in water projects and community characteristic (village size).

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview

Besides this section, the rest of the chapter is organised into four parts. The first part focuses on some definitions of the concept of participation while part two attempts to explain the rationale for participation. Part three looks at the characteristics associated with individual participation in different projects broadly classified as service projects (or infrastructural contributing). Finally, part four focuses on the reasons behind limited people's participation in development activities.

2.2 The concept of participation

Since the late 1970s, there has been a range of interpretations of the meaning of participation in development. Cohen and Uphoff (1997), for example, define participation with a rural development perspective as people's involvement in the decision-making processes, in implementing programmes, their sharing in the benefits of development programmes and their involvement in the evaluation of such programmes.

Community participation has also been defined by Paul (1987) as an active process by which the beneficiary or client groups influence the direction and execution of a development project with a view of enhancing their well-being in terms of income, personal growth, self-reliance or other values they cherish. Ghai (1994) "observes that participation can be seen as a process of empowerment of the deprived and the excluded."

This view is based on the recognition of differences in political and economic power among different social groups and classes. Participation in this sense necessitates the creation of

organizations of the poor which are democratic, independent and self-reliant. On the other hand, World Bank (1995) defines participation as a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them.'

Furthermore, Jakariya (2000) defines participation as a central goal in any form of development activities. Participation generally denotes the involvement of a significant number of people in situations or actions that enhance their well-being, their income, security, or self-esteem. In like manner, the United Nations (1975) defines popular participation as: "active and meaningful involvement of the masses of people at different levels (a) in decision-making process for the determination of societal goal and allocation of resources to achieving them and (b) in the execution of resulting programmes and projects

Mwaseba (1991) has defined participation as a concept referring to the involvement of local people in the activities related to a project. This involves five main elements, viz, problem identification, decision making, planning, implementation, evaluation and elections of leaders. Since the success of a project is the main goal, popular participation is viewed as a strategy by which the achievement of the goal could be realized. For the purpose of this study, community participation is defined as the involvement of people in activities related to a project in rural water development project, namely problem identification (prior to project establishment), decision making, planning, implementation, monitoring and evaluation.

Cohen and Uphoff (1997) and Steifel and Wolf (1997) explain participation in two broad and distinct areas of development. The distinctions between these are neither clear-cut

nor mutually exclusive, but they do represent two different purposes and approaches to promoting participatory development. Participation as a means: participation is seen as a process whereby local people cooperate or collaborate with externally introduced development programmes or projects. In this way, participation becomes the means whereby such initiatives can be more effectively implemented. People's participation is sponsored by an external agency and it is seen as a technique to support the progress of the programme or project (Cohen and Uphoff, 1997).

Participation as an end: participation is seen as a goal in itself. This goal can be expressed as the empowering of people in terms of their acquiring skills, knowledge and experience to take greater responsibility for their development. People's poverty can often be explained in terms of their exclusion and lack of access to and control of the resources which they need to sustain and improve their lives. Participation is an instrument of change and it can help break that exclusion and provide poor people with the basis for their more direct involvement in development initiatives.

The critical issue to bear in mind is that people's participation in development is concerned with two things: i) structural relationships and the importance of developing people's capacities and skills to negotiate and to seek the resources and changes which they require in order to improve their lives; and ii) the methods and techniques whereby local people can be brought to play a part and to develop a stake in development programmes and projects. Both purposes are of equal importance; the former seeks to secure a longer term and sustainable development for poor people, the latter is crucial in providing immediate access to the benefits of development (Steifel and Wolf, 1997).

2.3 Typology of participation

Participation in project development initiatives are challenging social process in which the different objectives of communities in social, economic and environmental need to be integrated. Institutional, individuals' roles and responsibilities have to change into new patterns which will bring up sustainable development by the use of community participation. This challenge demands community participation for decision-making and action (Pretty and Scoones, 1995). Pretty and Scoones (1995) and Hawlett and Nagu (2001) have categorized types of participation into passive, manipulative, consultation, material incentives or contributing resources, functional, interactive and self-mobilization.

- Passive participation is where people participate by being told what is going to happen or has already happened through announcements by the administration or project management without listening to people's responses. In this type of participation information which is shared belongs to external professionals only (Pretty and Scoones, 1995).
- Manipulative participation is simply a pretending representative on official boards who are unelected and have no power in final decision-making (Pretty and Scoones, 1995).
- Participation by consultation is the type of participation where communities are involved in answering questions using questionnaires. It involves seeking views of the target groups. The external agents define problems, information gathering process and control analysis, there is no sharing in decision – making. Profession official representatives have no power on the final decision – making (Pretty and Scoones, 1995).

- Participation for material incentives or contributing resources involves people in providing resources e.g. labour in return for food, cash or other material incentives, e.g. peasants may provide field and labour but have yet not been involved in experimentation (Pretty and Scoones, 1995; Hawlett and Nagu, 2001).
- Functional participation tends to occur only after major decisions have already been made by external agencies. People are co-opted as a means to achieve external project goals with minimal costs. Here people participate in both interactive and shared decision making (Hawlett and Nagu, 2001).
- Interactive participation is the type of a recommended participation where people are actively involved in analysis, planning, implementation and evaluation stages in the whole process and ensure the identified community needs and objectives are attained for sustainable development. The process involves interdisciplinary methodologies that seek multiple perspectives using structured learning processes (Hawlett and Nagu, 2001) and:
- Self-mobilization is when people participate by taking initiatives independent of external agencies to change their lives through resources and technical advice they need, but retains control over how resources are used (Hawlett and Nagu, 2001).

Despite a number of typologies of participation, the term participation should not be accepted without appropriate classification. According to Pretty and Scoones (1995), it has been reported that participation in terms of manipulative, passive, consultative and material incentives-driven forms are just superficial and fragmented. Achievements have no lasting impact on people's lives. If the objective of development planning is to achieve sustainable projects, then none of these four types of participation alone will suffice.

According to Narayan (1995) in a study of 121 rural water supply projects in 49 countries of Africa, Asia and Latin America found that participation was the most significant factor contributing to project effectiveness and maintenance of water systems. However, only 21% of the projects referred to community participation scored high on interactive and self-mobilization participation, best results occurred when people were involved in decision-making during all stages of the project from design to maintenance. If they were just involved in information sharing and consultations, then the results were much poorer.

2.4 Rationale for participation

Participation empowers and mobilizes people as actors and overseers of their own development; as it is one of the ends of development as well as one of the means. Dungumaro (2003) has observed that there are a number of issues to be considered in order to register successful and sustainable integrated water development projects. Some of the factors which are presented include public participation, institutional framework and recognition of water as an economic good. Furthermore, she revealed that the importance of involving the public participation in water development projects are as follows:

- Demonstration of local consent in taking part in public decision making process which is critical especially on the issues that directly affect people's welfare. Once people are involved in water development projects it will be easier for them to realize and eventually change their practices which have negative impacts on water projects, and reinforce the ones with positive results.
- The use of indigenous knowledge places the local community which also gives them the opportunity to provide an important database, experience and ideals that

could lead to practical, relevant, achievable and acceptable solutions to water projects related to problems. Warburton and Martin (1999) have noted that scientific knowledge does not come from vacuum but is built from the local people's knowledge.

- Building public trust takes care of the lack of public trust which might lead to unnecessary and avoidable antagonism (Dungumaro and Madulu, 2003).

Furthermore, Dungumaro (2003) identified several successful examples of water resources management project cases which ensured full public involvement of community in Tanzania and elsewhere. These include the Kihansi River Catchment's area which is used for cultivation during the dry season. However, the cultivation in the river valley resulted into sedimentation downstream. Since the local people were involved in the problem identification, they enacted by-laws that prohibited valley cultivation. The local community ensured that their river was well taken care of, for continuous availability of water. Another successful story is from Health through Sanitation and Water Project where the local people organized themselves to build charcoal dams for their livestock. Also, a water project in Zambia involved the local community who protected their catchment's area through building a fence around the borehole and regular cleaning of point (IRC, 1999).

Public participation, also, helps to increase awareness of the people in water resources management projects. In most rural areas of Tanzania, rural population produce charcoal for sale in order to increase their income and support livelihood. This population segment cannot be held solely responsible for destroying the environment and cause impacts on water resources. These people have no other means of increasing their income in order to meet their needs except through charcoal production.

On the other hand, there is an increasing demand for charcoal created by the urban population. In Tanzania about 97 percent of energy is supplied from the forest. Dungumaro argues that there should be other means of increasing income and alternative sources of energy to reduce the rate of deforestation. Without such measures, communities will continue to create water shortages and pose potential health hazards. They will also continue to pollute sources of potable water through poor sanitation, and degrade the environment through improper land use.

In order to intervene effectively, long lasting awareness needs to be created and reinforced on water and sanitation issues. Through awareness creation, people will be able to understand for instance why integrated water resources management project is employed and what is expected from them in water resources management projects. As noted by GWP (2000), water resources management project is critical to ensure that there is available water for domestic uses, food production, conservation of nature, industries including hydropower production. When these benefits are explicitly experienced by the community, a room for success will be created.

The importance of participation in development projects is underscored by the World Bank (1995) as outlined below:

- It can help create and maintain stable democracies and good governance as well as economic growth.
- When poor and marginalized people participate in development projects, they acquire skills and develop attitudes which may facilitate their integration into the wider society. From the Bank's viewpoint, participation also improves the

financial and developmental sustainability of projects, thereby enhancing portfolio performance.

- Participation improves project design by reducing the cost of obtaining accurate and site-specific data on environmental, social and cultural factors as well as stakeholders' felt needs and priorities. Also, project managers can get input from all groups, including people often marginalized in the development process.
- A well-designed participatory process can help resolve or manage conflict by identifying common ground or a negotiating structure which will allow benefits to accrue to all sets of interests. By discovering and resolving potential conflicts early in the project cycle, participation can reduce the cost of supervision later.

According to Sachs (1992) there are six reasons why the government and development institutions have recently taken in the concept of participation in development. These include:

- The concept of participation is no longer perceived as a threat implying that the bulk of the assistance programmes provided by donors to the developing countries are allocated to the strengthening and modernization related to the power of state, infrastructural requirements, the social and cultural needs of the community.
- Participation has become a politically attractive slogan since it creates feelings of complicity between the public and the communities. The politicians give their constituencies with the impression that they are really sensitive to all their problems, often inviting the latter to enlighten them on their needs and aspirations. On the other hand, peacefully negotiated forms of participation can take the heat

out of many situations where development policies create tension and resistance on the part of their victims.

- Participation has become economically an appealing proposition since most of developing countries are broke or nearly broke, a situation which requires them to adjust their economies. This may entail selling what remains of their deep feelings to any one who can provide them with money to pay their debts. Nothing is done more than passing on the costs to the poor in the name of participation and self-help. It has been argued that the World Bank alone has invested over USD 50 billion in the so-called poverty alleviation programmes since 1975 believing that the long-term 'sustainability' of projects is closely linked to active and informed participation by the poor.
- Participation is now perceived as a new source of investments where the participatory processes bring to development projects in the forms of organizations. This increases the economy's capacity to absorb poverty-oriented investments. In this context, grassroots organisations are becoming the infrastructure through which investments is made or provide 'software' that makes other kinds of investments work.
- Participation is becoming a good financing device particularly in the last ten years. It has been reported by 1983, no less than USD 3.6 billion in NGO's support was granted by European countries and a sum almost three times larger than the total funds allocated to developing countries through UNDP. With the participatory concept, the government and inter-governmental organizations now seek to demonstrate paying attention to participation in the hope of continuing to ensure their chances of receiving donor funds for development projects.

- Participation could help the private sector to be directly involved in development business. It has been argued by Sachs (1992) that participation advocates better position to deliver more competitive services in public projects activities, not only to donor and government, but also to the leading UN special agencies who are already using this expanded concept of participation with a view of giving the private sector a greater part of their public responsibilities. It is now simply perceived as one of the many resources needed to keep the economy alive.

According to REPOA (2002) the importance of community participation in development projects includes;

- Community participation is education because a “dialogue” a two-way exchange of knowledge takes place in the interactions between communities;
- Community participation is empowering because experience of how to influence, implement and control activities which improve the quality of life is gained by the people;
- Community participation is a process because education, empowerment and increasing responsibility require time. Meaningful participation cannot be manipulated within the context of pre-established time limits. Progress can only be made gradually if the changes are to be permanent or sustainable;
- Community participation is a partnership between the community and the agency because in most services, especially rural water supply project, there will always be resources (for example machinery and technologies) which must be provided from outside the community;

- Problems and needs are identified by the intended beneficiaries and not assumed to exist by the agencies. Only when problems and needs are recognized by the community will participation in programmes be feasible;
- The community bears responsibility for planning managing and assessing their actions if they are to control them. This will also ensure maximum self-reliance and continuity of activities when outside support is withdrawn;
- Collective action is necessary to address collective problems. This is undertaken through an organizational structure which is broadly-based, flexible and ensures continuity of action independent of individual leadership.

Carazzai (2002), in her study of community participation in water supply projects and the use of GI in informal settlement upgrading Programme in Brazil, views participation as a very important approach since the community's residents know more about their needs and the issues inside the community. One example is the Cities Alliance initiated by the World Bank (2001b) and UNCHS (2001) which observed two of the basic assumptions made by the program, were that communities are equal decision-making partners in the process of upgrading and that they are the ones who know their community and its issues. Another interesting statement made by the project is that 'there is no magic solution: each community must be addressed on its own merits'. This has an important meaning since each community has its own problems and the degree of needs for each of these problems can vary from community to community.

Participation can also bring benefits to the community itself, as it tends to bring the community together in defining their problems and priorities setting. A good example of this is the case presented by Gibbon *et al.* (2001) in Western Kenya.

In this case the community participation approach was used to assess basic needs with the internally displaced using well being ranking. The interesting findings about the participation were that, first the neighbors who were in conflict before because of their tribal origins became aware of the common effects of the disturbances and their shared needs. Second, as discussions were inclusive and open individuals could not exaggerate their needs, instead they became informed of the needs of others which could be greater than theirs. This shows how participation can be also important inside the community because before discussing their needs with government and other authorities, the community residents have to understand their problems and set the priorities among themselves, leading them to a better understanding of their environment. In other words, the community residents have to change their way of thinking from an individualistic to a community perspective.

Mukherjee (2002) presents a good example of the need for the community to identify their problems in the early stage of water project design using the Bangladesh case study. He shows how the community was active in the first stages of the project by asking the community their problems and how they perceived these problems. This could be one of the solutions to avoid misunderstanding the community's needs and considering solutions provided by them to their own problems, which could help the different stakeholders in finding the right solutions to the problems present in informal settlements.

Phnuyal (1998) has observed that in many projects community participation was restricted to the implementation phase of an upgrading program which led the community to feel as they were imposed to some decisions made by the governors. Instead, if authorities would actually make the project were imposed on the community part of the whole process,

starting from the early phase of design would motivate community participation and they feel that their needs were understood and that their ideas and point of view influenced the process.

Despite aforementioned merits, participation is not without demerits. For example, Sachs (1992) observes some of demerits related to community participation which includes a mechanism for sharing information leading to duplication of research activities and consequently, ushering negative and hostile attitude due to repetition; participation costs of time and resources with no guarantee of effective impacts focus on techniques than enhancing the central role of the community in the development process resulting in higher expectations of the community.

According to Smith (2006), there are several reasons which account for the individuals and/or community reluctance in community participation. These include; an unfair distribution of work or benefit amongst members of the community, a highly individualistic society where there is little or no sense of community, the feeling that the government or agency should provide the facilities and the agency treatment of community members as being helpless which may make them act as if they are.

Likewise Narayan (2002) mentions some of the community participation demerits as they relate to programme planning as time and financial costs with no guaranteed end product impact, an irrelevant and a luxury in situations of poverty which does not justify expenditure. Also, Participation can be a destabilizing force in that it can unbalance to existing socio-political relationships as well as threatening the continuity of development work. Participation is driven by 'ideological fervour' and is less concerned with seeking to secure direct benefits for people.

This can result into promoting an ideological perspective into development and shifting of the burden onto the poor and the relinquishing by national governments of their responsibilities to promote development with equity.

2.5 Characteristic associated with participation

Participation can be determined by personal characteristics and community characteristics. All these factors can exert an influence on whether, when, and how respondents participated in water development projects in rural community will be active.

2.5.1 Personal characteristics

Age

Toner and Clever (2006), in their study on community participation in water projects in Uchira village, reported that age can be relatively high among the respondents falling in the age brackets from 30 – 54 years followed by those above 55 years and below 30 years following behind. The report concluded that the population age of between 15 – 54 years is classified as the most productive years of the labour force. Also Mwaseba (1991) in his study conducted in Morogoro found that age has significant impact on the level of years participation as participation in communal projects is shown to be relatively high among respondents in the age brackets falling between 36 – 55 years followed by those above 55 and with those below 36 years trailing behind. However, Jakariya (2000) in his study on local participation in the use of alternative safe water projects to mitigate the arsenic problem in Bangladesh reports that age is shown to be relatively high among the respondents in the age brackets falling from 30 – 50 years. He classified this age as the

labour force involved in production activities such as water project; although the size of this group may be influenced by other factors like health, schooling and other social and cultural factors.

Sex

Sex is the biological difference between males and females. In his study Mwaseba (1991) reports that sex has significant relationship with participation. The low level of participation of women relative to men, according to the author, might be due to the fact that women compared to men have multiple roles to play. More specifically, in addition to playing a significant role in agriculture, they also attend to carry out almost all household chores such as cooking, maintaining general cleanliness and most importantly caring after the family including children and (even) their husband. Thus the performance of these multiple roles makes it difficult for women to get enough time to (also) take part in community affairs. Furthermore, he reported that it would also appear that the effort by leadership in the country to promote equality between men and women, leaders' achievement would have translated in reducing the workload shouldered by women, thus limiting their potential in community activities. This could be attributed to the fact that existing custom, seem to create conditions that militate against pronounced participation of women in matters of importance in their communities. Based on her study Shelutete (1996) stated categorically that although women acquire knowledge from meetings, they showed dissatisfaction in the way they are discriminated by tribal customs and traditions where women are not consulted in decision making.

Furthermore, Narayan (1995) in a study on participation in Asia, Africa and Latin America programme reports that sex was significantly associated with the level of participation in developing countries. It is also argued that socially accepted gender

roles and the position of females in many African societies have a strong impact on the development of the water projects. For example, water happens to be the critical ingredient to women's roles, responsibilities and the nature of women's household work leading to be drawers of water. With a few exceptions, women in most peasant and pastoral households in developing countries are responsible for not only collecting water but also gathering firewood, and other forest products for household use in addition to performing agricultural work. This limits women's full participation in the water project activities (Narayan, 1995).

Level of education

Toner and Cleaver (2006) report that level of education was not associated with the level of participation because the respondents in the study had attained higher levels of education and had the knowledge of participation in water development projects. Due to this they were compelled to carry out activities that have positive impact in the water development project. Also, Mwaseba (1991) reports that level of education were not significantly related to the level of participation in communal projects due to the high literacy rate. Similarly, Philip and Abdillahi (2003) in their study on participation in community work ethic in rural water development in Nandi district, Kenya reported that the participation of the community in the water development project production was not significantly related to the level of participation due to their ability to read and write. In general, high level of education impacts on participation of community members in projects.

Main occupation

Jakariya (2000) reported that main occupation was significantly related to the level of participation because many of the respondents were business-oriented people who were reluctant to spend much time away from their business activities. This observation runs contrary to the findings by Phillip and Abdillahi (2003) who reported that the main occupation was not significantly related to the level of participation because farmers, business people and government civil servants participated in water community projects activities.

Marital status

Phillip and Abdillahi (2003) have reported that married couples showed a high level of participation in community development projects probably due to the power of the marriage institution for both individuals in the society. It is significantly related to the level of participation due to the fact that marriage event in the life cycle of individuals' represents mobilization, relationships and social interactions in the participation in social services delivery.

Household income

In their study Phillip and Abdillahi (2003) report that the relatively high level of participation depends on the household income earned per month. Therefore, a decrease in household income per month is associated with a decrease in the level of community participation in water projects in terms of monetary contribution. In any case, poverty and its many behavioral consequences can be a strong limitation for the stimulation of

Community Participation (CP) in water projects. High levels of poverty cases delay of contribution of what and, therefore, delay of implementation of projects and or selection of low quality technology. Binamungu (2001) comments that because the concept of cash contribution is new to communities, they always adopt it slowly and sometimes people refuse to contribute arguing that water services should be free to all.

2.5.2 Community characteristics

Studies have also been done on the influence of community characteristics on participation in community projects. For example Mwaseba (1991) reports that there was no statistically significant effect of village size on the level of participation. McHenry (1979) cited by Mwaseba (1991) noted that the observed findings were inconclusive attributing it to the presence of sub – village organisational structures which, according to him, may offset the management problems created by a large number of villages. For example, the ten cells in the village community might have offered a better arrangement in terms of organizing the people for any development undertaking.

2.6 Reasons behind limited participation

Participation in development undertakings has not been achieved to the desired level of satisfaction due to various reasons. For example, evidence from literature suggests that there is a wide range of factors that could hinder and constrain the promotion of participation, and these often leads to the emergence of non-participation (Cohen and Uphoff, 1980;

Narayan, (1995). Such prohibiting participation obstacles abound and range from institutional, socio-cultural, technical, logistical, and are spread over a seemingly-endless spectrum. Obstacles can also be external, internal and or a combination of both. External obstacles refer to those factors outside the end-beneficiary community that inhibit or prevent true community participation from taking place (Cohen and Uphoff, 1980; Narayan, 1995). External obstacles include the role of development professionals, the broader government orientation towards promoting participation, the tendency among development agencies to apply selective participation, and their technological-financial bias. On the other hand, internal obstacles refer to conflicting interest groups, gate-keeping by local elites, and a lack of public interest in becoming involved (Cohen and Uphoff, 1980). Some of the obstacles such as excessive pressure for immediate results and technological-financial bias can either be internal and external characteristics or both. Individual and group motivators appear to be context-specific and locality-bound rather than universally-definable Narayan (1995).

Schonten and Morriarty (2004) have put forward two factors to explain limited community participation in the water projects covered in their study. They found that internal factors like lack of community commitment, leadership communication, lack of participatory skills, unrepresentative in water communities, technical issues, strong traditions, misplaced priorities and financial problems were responsible for the limited participation. On the other hand, external factors such as non – existence or weak supply machine, lack of standardized technologies, poor design and construction fault, interference with politicians environmental issues which have a big impact on the development of the water projects

limited participation. Due to these reasons, the authors observed that the real poor have rarely been consulted about what they want from development.

It can, therefore, be argued that decentralized government structure in Tanzania to ensure the involvement of villages/wards development committees in planning is a step towards the realize run of this goal. This is because the planning process starts in villages or in wards according to the Local Government Act. No. 7 and 8 of 1982. Besides, the Regional Administration Act of 1997 provides legal basis for participatory planning. However, region and district bureaucracy has undermined community participation (URT, 2002).

The importance and the potential benefit of involving the clientele in development programmes have been well highlighted in this chapter. It has also been noted that attempts to institute participation appear to face problems that are largely administrative in nature. This has been the case in Tanzania as well as in the other countries. This implies that the establishment of what has been referred to by James and Mdoe (2002) as participatory planning is frequently unsustainable despite the façade of bottom-up planning. District plans are still largely determined and strongly influenced by administrators. Planned villages or the enactment of Villages and Local Government Acts in 1982 should be seen as necessary rather than sufficient condition for community participation. The problems of bottlenecks in the way of community participation must be mitigated if the genuine interest of encouraging Tanzanians to shape their destiny through co-operative undertakings is to be realized.

There are two potential pitfalls to take into account when implementing participatory approaches. The first of these is that engaging the more powerful stakeholder groups. It is fairly easy to demonstrate to government officials for instance why their participation in a particular initiative would be valuable. It is not the same for the poor and therefore different techniques are required to achieve this objective. For this reason, participatory approaches usually involve groups working on the ground or on paper (Hickey and Mohan, 2004). Thus it can be advanced that the very survival of local government policy depends on the extent to which participation permeates all the undertakings of Local Government in Tanzania of devolving powers and responsibilities to the local people (URT, 2004).

It is quite true that participation among the people in the development process cannot be achieved without there being genuine cooperation between them and their leaders. But the leaders cannot shirk their responsibility of providing quality leadership that would motivate the people to realize the benefits. For example, Abraham and Platteau (2004) present evidence on community participation processes in sub-Saharan Africa based largely on anecdotal evidence from their work in community – based water development project and on secondary sources. They argue that rural African communities are often dominated by dictatorial leaders who shape the participation process to benefit themselves because of the poor flow of information. Thus, participatory development can be very difficult and may require slow careful efforts to make communities more receptive.

The general aim of this Chapter was to review work on participation. Particular attention was paid to the various aspects related to the concept of participation and factors influencing participation in project services such as water supply projects. In the succeeding chapter, attention is directed at the methodology adopted for this study.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Overview

This Chapter presents the methods used to collect and analyse data from the study area. The chapter is divided into six sections. Section one presents the location of the study area and justification for its selection. Section two presents research design while section three presents the sampling procedures employed. Section four describes data collection which is followed by a presentation of data processing and analysis in section five.

3.2 Study location

The study was conducted in Mbeya district which forms part of the Mbeya region. It was selected for the study because in some villages, water development projects activities are mainly organized through community participation under the respective village governments. Mbeya district (See Fig. 2) is bordered by Mbarali district to the East, Rungwe and Ileje district to the South, Mbozi district to the West and Chunya district to the North. Administratively, the district is divided into 3 divisions, 17 wards, 126 villages and 1010 hamlets.

The District has a total area of 2432 square kilometres equivalent to 243 200 hectares of which 189 818 hectares is arable land suitable for agriculture and livestock production. On the other hand, about 47 354 hectares are covered by forests, water bodies cover 6028 hectares and unsuitable land for agriculture accounts for the remaining part of the hectares. Moreover, Mbeya district lies between 7° and 9° latitude South of Equator and between 33° and 35° East of Greenwich longitudes (Mbeya District Profile, 2006).

Mbeya district lies at an altitude ranging from 2300 – 2800 above sea level. The average temperature ranges between 12°C and 30°C annually. The mean annual rainfall ranges between 650mm and 2700mm. Topographically, the district is characterized by highlands, mountainous peaks and lowlands of the Songwe valley. The most predominant natural vegetation includes tropical forests, savannah and wooded grassland (Mbeya District Profile, 2006).

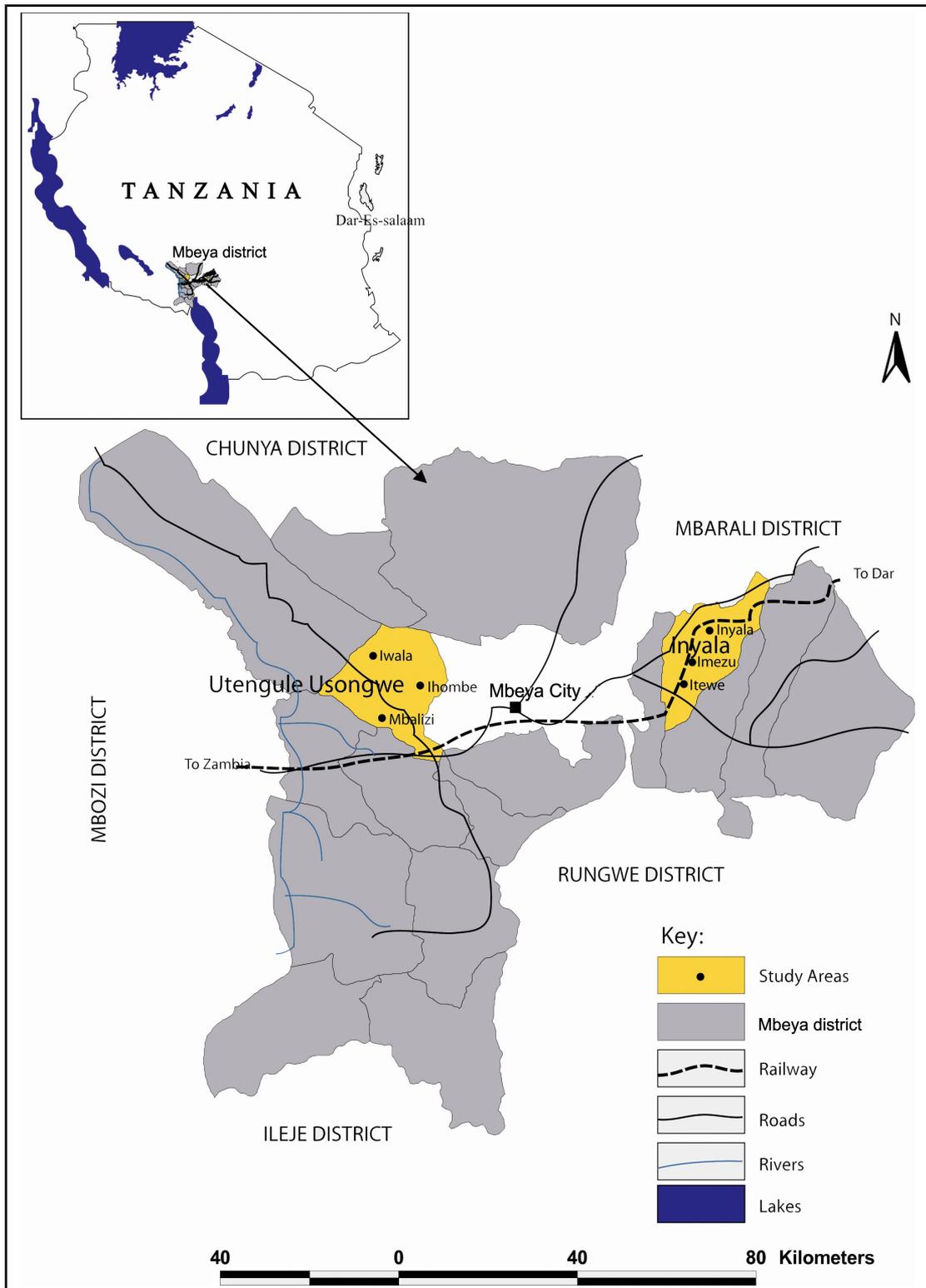


Figure 2: Maps of Tanzania and Mbeya district

The estimated population of Mbeya district, according to the Population and Housing Census General Report (2002), was 254 069. In 1988 the population was 243 115 and the annual average population growth rate between 1988 and 2002 was 2.5 per cent (Table 1).

Table 1: Distribution of the population in Mbeya district by wards

No.	Name of Ward	No. of Villages	No. of Households	Population		Total
				Male	Female	
1	Ihango	5	2 855	5 280	5 910	11 190
2	Ulenje	7	3 081	5 178	6 295	11 473
3	Tembela	11	3 836	6 604	8 056	14 660
4	Ijombe	7	2 439	4 081	4 857	8 938
5	Santilya	7	3 937	6 926	8 291	15 217
6	Ilembo	13	5 173	10 082	11 718	21 800
7	Iwiji	5	3 091	6 188	7 077	13 265
8	Isuto	11	5 275	9 649	11 337	20 986
9	Igale	9	4 485	8 259	9 628	17 887
10	Iwindi	8	3 789	7 151	8 147	15 298
11	Utengule Usongwe	7	10 740	20 897	23 192	44 089
12	Mshewe	8	2 482	5 230	5 374	10 604
13	Ikukwa	2	1 240	2 375	2 703	5 078
14	Iyunga mapinduzi	5	1 479	2 758	3 043	5 801
15	Bonde la songwe	6	3 953	8 061	8 301	16 362
16	Inyala	8	2 780	5 180	5 923	11 103
17	Ilungu	7	2 887	4 901	5 417	10 318
	Total	126	63 522	118 800	135 269	254 069

Source: Mbeya District Profile 2006

The main ethnic groups found in Mbeya district are the Safwa, Malila and Nyakyusa who reside in Tembela, Isangati and Usongwe divisions respectively. Others include the Wanji, Ndali, Nyika and Kinga and the Masai and Sukuma. The last two ethnic groups are specifically identified as nomadic and predominantly agro-pastoralists. Besides, these two ethnic groups mostly reside in Mshewe and Ikukwa wards. The major language spoken is

Kiswahili. People in the Mbeya district are engaged in agricultural activities, small business and others have office jobs. The current population density in the district is 105 people per square kilometers which is comparatively greater than the national average and regional population densities of 39 square kilometers and 34 per square kilometers respectively reported in 2002.

3.3 Research design

Cross-sectional research design was used in this study because it allows data to be collected at one point in time and establishes relationships between variables for the purpose of testing the hypotheses (Bailey, 1998). This design was used to generate quantitative and qualitative data about community participation in water development projects. This design was found to be useful because of time limitation and resource constraints.

3.4 Sampling procedures

3.4.1 The population

The population from which the sample for this study was drawn consisted of household heads. The total population is 55 192 and number of villages in the two selected wards is 15 (Table 2).

Table 2: Population in the study area

Name of Ward	Number of Villages	Number of population		Total
		Male	Female	
Inyala	8	5 180	5 923	11 103
Utengule Usongwe	7	20 897	23 192	44 089
Total	15	26 077	29 115	55 192

Source: The United Republic of Tanzania (Population and Housing Census 2002)

3.4.2 Sampling method and sample size

Purposive sampling and simple random sampling techniques were employed. Purposive sampling technique was employed to obtain the six villages. These villages were selected on basis of their having water projects. The villages covered by the study with their respective wards in brackets are Inyala, Itewe and Imezu (Inyala ward) and Mbalizi, Ihombe and Iwala (Utengule Usongwe).

Simple random sampling technique was used to select 60 households from three villages in Inyala ward. Specifically, 19, 21 and 20 households were selected from Imezu, Itewe and Inyala villages respectively. Besides, 60 households were randomly selected from three villages in Utengule Usongwe ward. These included 22, 21 and 17 households from Mbalizi, Ihombe and Iwala villages respectively. This made a total sample size of some 120 households. This accounted for 30 percent of the population (see Appendix I). This sample size is reasonably large, for as argued by Bailey (1998) about 30 cases seem to be the bare minimum for studies in which statistical data analysis is to be done.

3.5 Data collection methods

3.5.1 Primary data

Both quantitative and qualitative data collection methods were used to obtain primary data. The main instrument for quantitative data was a structured questionnaire containing both closed and open-ended questions (see Appendix II). Data collection began in the last week of October 2007 and was completed after four weeks. Both qualitative and quantitative data were collected subsequent to a pilot study conducted in Inyala village two weeks

before the main study. The pilot study was used to test the clarity, sequence of the questions and the discussion guides well as to estimate time taken to administer a questionnaire. The revised version of the questionnaire that was used in the study was translated in Kiswahili the national language in Tanzania. The researcher and three trained research assistants administered the questionnaires. The same team was also used for the focus group discussions (FGDs). During data collection, the Principal Researcher (PR) and research assistants went as a team and each interviewed an average of eight respondents per day. During the fieldwork, the principal researcher supervised the interview periodically with the aim of making certain that proper data collection procedures were followed and to solve any administrative and field problems. In addition, every day the principal researcher edited the completed questionnaires to check the consistency and accuracy of responses.

Focus Group Discussion (FGDs)

The FGDs were also conducted to collect data for the study. The participants in FGDs were males and females aged above 18 years. Although 12-15 participants are selected for FGDs during the actual discussion the number frequently varied between 8 and 10 participants. This is because some dropped out due to various reasons. The FGDs were conducted after finishing the questionnaire survey. The Principle Researcher (PR) and three research assistants participated in the discussions. The principal researcher was the moderator while two of the research assistants took notes. During the discussions the moderator introduced the topic and allowed the group members to discuss. The discussions in each session lasted about two hours.

Key informants interviews

More information was collected from key informants such as the District Executive Director (DED), District Water Engineer (DWE), District Planning Officer (DPLO), village leaders like village Chairman of each village, Ward Executive Officers (WEOs) and Village Executive Officers (VEOs). Information was also collected from the Council chairman and councillors from the two wards. Generally, key informants were asked to give their views on factors that influence community participation in water development projects and to give opinion on how community participation can be mobilized.

3.5.2 Secondary data

Most of the secondary data were used to enrich the study. These were obtained from various resources centre such as Mbeya District Office, Sokoine National Agricultural Library (SNAL) and the University of Dar es salaam library. Other secondary data were also obtained from published and unpublished documents and the internet.

3.6 Data processing and analysis

Data from the field survey were coded and analysed using the Statistical Package for Social Sciences (SPSS) computer software. Descriptive statistics such as means, frequencies and percentages were computed, cross tabulation was used to ascertain the correlations between different variables and chi-square was used to test the hypotheses at 0.05 percent level of significance. Moreover, the recorded and summarised data from FGDs and key informants recorded by note takers were also analysed.

3.7 Summary

In this Chapter the geographical location of the Mbeya region and Mbeya district has been described. The survey design and the technique used in sampling the community participation have been presented. Furthermore, the methods used for data collection have been outlined. Besides, both qualitative and quantitative research methods were used in data collection has been described.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Overview

This Chapter presents the analysis and interpretation of data collected based on the study objectives and hypothesis tested. It is organised into eight sub sections as indicated below:

4.2 Personal characteristics of the respondents

This section focuses on the following personal characteristics of the respondents: age, sex, marital status, level of education, occupation, marital status and household income.

4.2.1 Age

Table 3 shows that the majorities (73.3%) of the respondents in the study villages were aged between 25 and 44 years while 17.5% respondents were above 45 years. On the other hand, 9.1% of them were either 24 years or below. The mean age of the respondents was 36 years. In general, the results show that the majority of the respondents were in their prime productive ages and could therefore be expected to contribute to the development of their respective villages.

Table 3: Distribution of respondents by age (N = 120)

Age groups (Years)	Frequency	%
Below 19	3	2.5
20 – 24	8	6.7
25 – 29	21	17.5
30 – 34	24	20.0
35 – 39	21	17.5
40 – 44	22	18.3
45 – 49	10	8.3
Above 50	11	9.2
Total	120	100.0

4.2.2 Head of household sex

Table 4 shows that the majority (64.2%) of respondents were males while 35.8% were females. This suggests that the majority of households in Mbeya district are headed by men.

Table 4: Distribution of respondents by sex (N = 120)

Sex	Frequency	%
Female	43	35.8
Male	77	64.2
Total	120	100.0

4.2.3 Level of education

During the survey, the information on education attainment was collected from every respondent in terms of whether or not the respondent had been to school. Table 5 shows that the majority (80%) of the respondents reported to have finished primary school education. About 11% of respondent indicated that they have attained secondary education while six (5%) reported that they have not gone to school at all. Only five (4.2%) of them attained post-secondary education. This finding shows that a high proportion of respondents had been to school. This can be attributed to high enrolment rate due to the

implementation of Universal Primary Education (UPE) since 1975 that gave every child the right to free primary education (TDHS, 2004).

Table 5: Distribution of respondents by level of education (N = 120)

Level of education	Frequency	%
Illiterate	6	5.0
Primary education	96	80.0
Secondary education	13	10.8
Post secondary education	5	4.2
Total	120	100.0

4.2.4 Main occupation

During the study, respondents were asked to state their main occupation. The categories used to capture information on main occupations of the respondents were classified as farming (people engaged in agriculture only), farming and livestock keeping (people engaged in agriculture and livestock keeping), civil servant, carpenter and business. The results presented in Table 6, show that the majority (69.2%) of the respondents were employed in farming. The second highest proportion, who constituted 18% of respondents, were involved in farming and livestock keeping. The other categories of occupations comprised 13.3% of the respondents. These categories included civil servants, carpentry, and business. The results also revealed that few people were engaged with other business (petty business) which included retail shops, selling of second hand clothes, buying and selling of agricultural products such as maize, beans and groundnuts and trading of forestry products e.g. timber, charcoal, honey and nectar.

Table 6: Distribution of respondents by main occupation (N = 120)

Main occupation	Frequency	%
Farming	83	69.2

Carpenter	1	0.8
Civil Servant	4	3.3
Farming and livestock keeping	21	17.5
Business	11	9.2
Total	120	100.0

4.2.5 Marital status

The categories used to classify the marital status of the respondents were married, not married, living together, widowed, divorced and separated. The results on marital status are presented in Table 7. The findings indicate that the majority (79.2%) of respondents were married. The proportion of respondents, who were not married was 8.3%, living together (2.2%), widowed (3.3%), divorced (4.2%) and separated (4.4%). The results reflect a high rate of marriage which is a common phenomenon in most of rural areas in Tanzania. This is probably due to social responsibilities that require collective action by wives and husbands short of which individuals who are single would face difficulties to accomplish.

Table 7: Distribution of respondents by marital status (N = 120)

Marital status	Frequency	%
Married	95	79.2
Unmarried	10	8.3
Living together	4	3.3
Widowed	1	0.8
Divorced	5	4.2
Separated	5	4.2
Total	120	100.0

4.2.6 Household income

This section provides information on respondents' household income. The results in Table 8 revealed that the income of most respondents (60%) ranged from 20 000 – 29 999, followed by income of between 10 000 – 19 999 (22.5%) and incomes above 30 000 (4.2%). The average annual household income in the study area are considerably low with the majority earning an average of Tshs 220 000/- annually or Tshs 17 791 per month which is equivalent to 593 (Tshs) per day. This is far too low compared with one dollar per day which can be recommended by the Millennium Development Goals (MDGs) in order to meet basic subsistence needs.

Table 8: Distribution of the respondents income by level of monthly cash (N = 120)

Household income per month (Tshs)	Frequency	Percent
Below 9 999	16	13.3
10 000 – 19 999	27	22.5
20 000 – 29 999	72	60.0
Above 30 000	5	4.2
Total	120	100.0

The respondents were also asked about their cash contributions in water projects per year.

The results in Table 9 indicate that the majority (65.8%) of the respondents contributed less than Tshs. 499. About 29.2% contributed between Tshs. 500 – 1999 while 5% contributed between Tshs. 2000 – 3999.

Table 9: Distribution of the respondents' by level of cash contribution (N = 120)

Amount of cash contributed per year	Frequency	Percent
Below 499	79	65.8
500 – 1999	35	29.2
2000 – 3999	6	5.0
Total	120	100.0

Furthermore, during FGDs it was revealed that the issue of provision of water to aged people (58 years old and above) free of charge was one of the obstacles to the participation in development of water project. This is because people still considered the provision of water to be free, a remnant of Ujamaa period. Also the DPLO said that another problem with the community is that some consider it is a free service. On the other hand, one of the key informants from Imezu village complained to the effect that village government leaders used funds meant for the water projects for other village development activities. This, it was observed, demoralized people and made them unwilling to contribute to the water project services.

4.3 Community characteristics

In regard to community characteristic the analysis and discussion focused on village size measured by number of households.

4.3.1 Village size

The Local Government Acts No. 7 and 8 of 1982 and the Regional Administration Act. of 1997 establishes a minimum number of 250 households per village (URT, 1998). The result in Table 10 shows that none of the six villages had household of less than 250 which means that all of them met the standard determined by the Local Government Act. Assuming that the number of 250 households per village suggested by the Government Act was an optimum number by which effective organization of water project work could be achieved in the water development activities.

Table 10: Distribution of household by villages (N = 5780)

Village	Household number	
	No.	%

Inyala	450	7.8
Itewe	380	6.6
Imezu	350	6.1
Mbalizi	3260	56.4
Ihombe	520	9.0
Iwala	820	14.1
Total	5780	100.0

Source: Village governments' office

4.3.2 Working and dependent population

Table 11 shows that Mbalizi leads with 9 100 working population, followed by Iwala, Inyala and Ihombe with 1 920, 1 140 and 1 110 working population respectively. Itewe and Imezu lie at the bottom with 400 and 320 working population respectively. Regarding the number of dependents (children and disabled), results in table 11 clearly show that except for Mbalizi the proportion of dependents was higher than that of the working population in the other five villages. This implies that there were fewer working population in the selected villages.

Table 11: Distribution of the working population and dependent population per village

	Working Population		Dependent population		Total population	
	No.	%	No.	%	No	%
Inyala	1140	46.7	1300	53.3	2440	100.0
Itewe	400	44.4	500	55.6	900	100.0
Imezu	320	44.4	400	55.6	720	100.0
Mbalizi	9100	75.8	2900	24.2	12000	100.0
Ihombe	1110	46.0	1305	54.0	2415	100.0
Iwala	1920	44.2	2420	55.8	4340	100.0

Source: Village governments' office

4.4 Level of participation of the respondents in water projects

Respondent were required to respond ‘Yes’ or ‘No’ to questions that sought to find out whether they participated in activities related to the projects. These activities were problem identification, decision making, planning, implementation, evaluation and monitoring (Table 12).

Table 12: Distribution of respondents according to participation in activities related to the water projects

Activity	Response Category				
	N	Yes		No	
		Frequency	%	Frequency	%
Problem identification	120	45	37.5	75	62.5
Decision making	120	37	30.8	83	69.2
Planning	120	46	38.3	74	61.7
Implementation	120	102	85.0	18	15.0
Evaluation	120	54	45.0	66	55.0
Monitoring	120	39	32.5	81	67.5

The level of participation of the individuals in the projects was then determined as follows: Every ‘Yes’ response received a score of one while every ‘No’ response received a score of zero. Thus a respondent who responded ‘No’ to all the questions asked in relation to this subject scored a minimum score of zero. Similarly, a respondent who respond ‘Yes’ to all the questions received a maximum score of six. The results in Table 12 show that participation was above average in only one activity, namely implementation. The table further shows that participation was below average in the other activities namely problem identification, decision making, planning, evaluation and monitoring.

In the context of this study, the level of participation was categorized as low, average and high in correspondence with 0 – 2, 3 – 4 and 5 – 6 scores. As is shown in Table 13, 63% of the respondent scored a low level of participation while 21% scored a high level of participation. Only (16%) respondents had an average level of participation. This shows that the level of participation of the respondents in the selected water projects was low.

**Table 13: Distribution of respondents by level of participation in the projects
(N = 120)**

Score	Frequency	%	Remarks
0 – 2	76	63.0	Low
3 – 4	19	16.0	Average
5 – 6	25	21.0	High
Total	120	100.0	

During FGDs the respondents revealed that it was easy for them to participate fully in the implementation of the water project by providing labour. Furthermore, respondents revealed that during project implementation donors (DANIDA) and government demanded recipients or beneficiaries of water projects to contribute 20% of the total costs in terms of voluntary labour and materials like stones, sand and bricks. Low participation of the respondents in other activities was due to the fact that many of the water projects were initiated by the government or donors. The government used top – down approach which did not allow the beneficiaries or community to participate in other activities related to the project like planning process, problem identification, decision making, monitoring and evaluation.

The findings from FGDs showed that the respondents had not participated in the village meetings to give their view because no meetings had been conducted by the village

government leaders leading to the low level of community participation in decision making. In fact, the District Water Engineer (DWE) said that generally a village meeting is the place where all issues related to village development must be conveyed to the villagers by the village government. In most cases, the village general assembly is supposed to be conducted every 3 months. However, this study found that the village leaders did not convene meetings at all. Thus members in the communities did not get opportunities to give their suggestions and comments on different matters related to the community water development projects.

4.5 Personal and community characteristics associated with the level of participation in water projects

The following hypotheses were tested: there is no relationship between the level of participation in water projects and personal characteristics namely: age, sex, level of education, occupation, marital status and household income. The other hypothesis was tested as follows: There is no relationship between the level of participation in water projects and community characteristic (village size). This was done using the chi-square test reported below.

Data in Table 14 show that there was statistically significant relationship between age and level of participation in water project, thus rejecting the null hypothesis stated above. This supports earlier findings by Mwaseba (1991), Toner and Cleaver (2006) and Jakariya (2000). Furthermore, the results in Table 18 shows that the participation in water projects is shown to be comparatively high among respondents in the age group falling between 25 – 44 followed by those above 45 followed with those below 24 years of age. This implies that age of the household members was significantly related to the level of participation.

Table 14: Respondents' level of participation according to age (N = 120)

Age	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
Below 19	3	3.9	0	0	0.008
20 – 24	8	10.5	0	0	
25 – 29	15	19.7	6	13.6	
30 – 34	16	21.1	8	18.2	
35 – 39	11	14.5	10	22.7	
40 – 44	7	9.2	15	34.1	
45 – 49	8	10.5	2	4.5	
Above 50	8	10.5	3	6.8	
Total	76	100.0	44	100	

$X^2 = 19.184$; $df = 7$; Sig. at $P \leq 0.05$; $P = 0.008$

4.5.2 Sex

Data in Table 15 shows that there was statistically significant relationship between level of participation in water project and sex. Thus the null hypothesis of no statistically significant relationship between two variables is rejected. This supports the finding by Mwaseba (1991) and Shelutete (1996). Mwaseba (1991) reported that the majority of women face many constraints like home activities, fetching water, reproductive activities. Sometimes, females were less likely to comply with water project development because

they had limited access to resources and information that would enable them to comply. Some factors in the study area explain women's poor involvement in water projects. This is exacerbated more by women's limited exposure to science and technology and thus limits their capacity to have significant inputs in water project (Shelutete, 1996).

Table 15: Respondents' level of participation according to sex (N = 120)

Sex	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
Male	43	56.6	34	77.3	0.023
Female	33	43.4	10	22.7	
Total	76	100	44	100	

$X^2 = 5.190$; $df = 1$; Sig. at $P \leq 0.05$; $P = 0.023$

4.5.3 Level of education

Table 16 shows that there was no statistically significant relationship between level of participation in water project and level of education. Hence the null hypothesis of no significant relationship is accepted. This finding is in line with the findings reported by Mwaseba (1991), Phillip and Abdillahi (2003), Jakariya (2000), Toner and Cleaver (2006). The above finding could be explained by the fact that literacy in the study area was rather high.

Table 16: Respondents' level of participation according to level of education (N = 120)

Level of education	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
Illiterate	6	7.9	0	0	0.193
Primary education	59	77.6	37	84.1	
Secondary education	7	9.2	6	13.6	
Post secondary education	4	5.3	1	2.3	

Total	76	100	44	100
$X^2 = 4.721;$	$df = 3;$	Not Sig. at $P \leq 0.05;$		$P = 0.193$

4.5.4 Main occupation

Table 17 shows that there was no statistically significant relationship between level of participation in water projects and the main occupation verifying the null hypothesis of no significant relationship between the two variables. This finding is consistent with the finding by Philip and Abdillahi (2003) but contradicts research findings reported by Jakariya (2000). A likely explanation for the reported finding of the study is that the assessment of the benefits of the projects could have motivated the people to participate equally irrespective of their type of occupation.

Table 17: Respondents' level of participation by main occupation (N = 120)

Main occupation	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
Farmers	50	65.8	33	75	0.782
Carpenter	1	1.3	0	0	
Civil Servant	3	3.9	1	2.3	
Farmers and Livestock keeping	15	19.7	6	13.6	
Business	7	9.2	4	9.1	
Total	76	100	44	100	
$X^2 = 1.748;$	$df = 4;$	Not Sig. at $P \leq 0.05;$		$P = 0.782$	

4.5.5 Marital status

Table 18 shows that there was no statistically significant relationship between the level of participation in water project and marital status verifying positively the null hypothesis of no statistically significant relationship between the two variables. This finding is consistent with the finding reported by Phillip and Abdillahi (2003).

Table 18: Respondents' level of participation by marital status (N = 120)

Marital status	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
Married	57	75	38	86.4	0.143
Unmarried	6	7.9	4	9.1	
Living together	3	3.9	1	2.3	
Widowed	0	0	1	2.3	
Divorced	5	6.6	0	0.0	
Separated	5	6.6	0	0.0	
Total	76	100	44	100	

$X^2 = 5.054$; $df = 5$; Not Sig. at $P \leq 0.05$ $P = 0.143$

4.5.6 Household income

Data in Table 19 shows that there was statistically significant relationship between level of participation in water project and household income rejecting the null hypothesis of no significant relationship between the two variables. This finding is in line with the finding reported by Phillip and Abdillahi (2003).

Table 19: Respondents' level of participation by household income per month (N = 120)

Household income per month	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
5,000 - 9,999	9	11.8	7	15.9	0.011
10,000 - 19,999	24	31.6	3	6.8	
20,000 - 29,999	39	51.3	33	75.0	
Above 30,000	4	5.3	1	2.3	
Total	76	100.0	44	100.0	

$X^2 = 11.49$; $df = 3$; Sig. at $P \leq 0.05$; $P = 0.011$

4.5.7 Hypothesis II

The following hypothesis was tested there is no statistically significant between community characteristic and level of participation in water projects.

Table 20 shows that there was statistically significant relationship between village size and the level of participation in water projects thus rejecting the null hypothesis of no statistically significant relationship. The results contradict the research results reported by Mwaseba (1991).

Table 20: Respondents level of participation by village size (N = 120)

Household Number	Level of participation				P
	Below Average		Average and above		
	No.	%	No	%	
500 and below	30	39.5	30	68.2	0.010
501 – 3000	29	38.2	9	20.5	
Above 3001	17	22.4	5	11.4	
Total	76	100.0	44	100.0	

$X^2 = 9.192$; $df = 2$; Sig. at $P \leq 0.05$; $P = 0.010$

4.5.8 Summary of chi-square tests

Table 21 presents a summary of chi-square (X^2) tests. As explained earlier in the preceding sections, only four variables (each of which has been marked with an asterisk (*) in Table 21) were found to be statistically significantly related to the level of participation of the respondents in water projects. It is significant to note that there was statistically significant relationship between sex and level of participation at 0.0023; age and level of participation at 0.008; village size and level of participation at 0.010 and household income and level of participation at 0.011. Equally significant is the fact that the lowest statistically significant relationship existed between main occupation at 0.782, level of education and level of participation at 0.193 and marital status and level of participation at 0.143.

Table 21: Summary of chi-square tests and relationship between Variables

Independent Variable	Dependent variable	Person Chi – square value (X²)	Degree of freedom	Remarks	P
Age	Level of participation	19.184*	7	S	0.008
Household income	“	11.142*	3	S	0.011
Village size	“	9.192*	2	S	0.010
Sex	“	5.190*	1	S	0.0023
Marital status	“	5.054	5	N.S	0.143
Level of education	“	4.721	3	N.S	0.193
Main occupation	“	1.748	4	N.S	0.782

Key: S - Significant at $P \leq 0.05$

N.S - Not significant at $P \leq 0.05$

* - Variable which statistically significantly related to the level of participation

4.6 Respondent’s attitude towards participatory approach

The respondents were asked 6 questions to ascertain their attitude towards participatory approach in all activities related to water projects. The responses were recorded in a Likert-style format in which the respondents were asked to indicate whether they strongly agreed, agreed, uncertain, disagreed or strongly disagreed with each statement. For easy comparison, the responses were grouped into three categories namely: agree, uncertain and disagree. Table 21 shows that the respondents agreed with almost all statements that sought to measure their attitude towards participatory approach.

Table 22: Distribution of respondents’ attitude towards participatory approach

Variable	(N = 120)					
	Disagree		Uncertain		agree	
	freq	%	freq	%	freq	%

The level of participation in water projects was participatory that involved decision making, planning, implementation, designing, monitoring and evaluation.	27	22.5	36	30.0	57	47.5
Rural water projects become sustainable especially when interactive and self – mobilization participation were involved	28	23.3	33	27.5	59	49.2
The reasons made the community to participate in water projects were really made after completion of the projects in this village	37	30.8	35	29.2	48	40.0
Women have been actively involved from project identification, planning, implementation and management of water project in this village.	25	20.8	23	19.2	72	60.0
Rural water supply projects become more sustainable especially when women are activity involved in all stages of the planning project cycle	28	23.3	25	20.8	67	55.8
Government leaders have rarely involved water users in decision making	36	30.0	26	21.7	58	48.3

4.6.1 Index of attitude of respondents towards participatory approach

The index ranged from 6 to 18 was developed. The index was further categorized into 6 -10, 11-14 and 15 – 18 indicating negative, neutral and positive attitudes respectively. The results presented in Table 22 show that the majority (50.0%) of the respondents had positive attitude to activities related to water project while 31.7% had neutral attitude and 18.3% had negative attitude towards participatory approach in implementing the water project. This result shows that the majority of the respondents had positive attitude to the statements of understand the participatory approach as a tool for the development of water projects and building a sense of ownership and capacity building.

Table 23: Distribution of respondents by attitude towards participatory approach

Scores	freq	%	Remarks
6 – 10	22	18.3	Negative attitude
11 – 14	38	31.7	Neutral attitude
15 – 18	60	50.0	Positive attitude
Total	120	100.0	

Furthermore, respondents who responded positively reported that participatory approach made the water projects to be owned by community. Those who responded negatively reported that they waste time by participating in the participatory approach in water projects because participatory approach was done every year and no water projects were implemented.

4.7 Problems hindering the community from participating in water project

The respondents were asked to mention five major problems that inhibited them from participating to the best of their ability in water projects. In addition, they were asked to suggest solutions of the problems that hindered their participation in water projects.

The analysis showed that the problems mentioned by respondents were mainly of three types namely individual, technical and leadership related problems. Poor health and personal commitments were identified to be the two problems at the individual level. The leadership related problems mentioned were lack of leadership accountability, absence or lack of regular communication between the leadership and the people on the progress of the village development water projects. Technical problems mentioned were unreliability of water supply and low capacity of water machines scheme for the projects.

4.7.1 Lack of leadership accountability

In most developing countries, there is typically lack of accountability by the leadership at both the national and local levels (URT, 2002). The respondents in the study area revealed that many officers in charge of the water projects at the local level showed no accountability regarding participation in water development projects. For example, the village government in Inyala village met only sporadically and did not keep proper minutes while tax income and expenditures data were kept secret. It is, however, important for accountability to be instituted in external supported and local projects to increase the sustainability of the projects.

Further discussions in FGDs revealed that no measures had been taken by village leadership to rectify the collapse of two Domestic Water Points (DWP) at Iwala and Ihombe. Furthermore, observations showed that DWP were not efficiently operated as water was left flowing and wasted. The reason advanced by village government leaders and VWCS was that the cork model used for fittings were the wrong type and improper. It was further revealed that leaders did not seek advice nor report the matter to the District Water Engineer's office.

4.7.2 Lack of regular communication on project progress

Village Water Committees (VWC) Low of information which empowers those receiving it to effect change. To this end, communication is an integral part of any development initiative and determines the level and form of participation in such undertakings. Communication and information sharing not only impacts a project, it also determines the understanding that a community has of specific issues and the general status of the project. Rogers and Hall (2002) point out that a project is required to be inclusive and communicative with

communication channels free flowing so as to enhance transparency. The results show that in the study area more of the respondents do not have regular communication in the stage of the implementation of the water projects. Thus, at implementation construction phase, in particular, clear communication channels need to be highly functional so as to keep the community informed of any modification to the project and implementation strategies whatever the cost is.

4.7.3 Low capacity of machine

Water users and water committees in Inyala, Imezu and Iwala villages reported that although a machine had been installed in the village to supply water to the villagers; communities continued to face water problems because the machine had not been in operation for quite some time due to frequent mechanical breakdown. Low water supply was reported by respondents in all villages, a problem that corroborated by water committees who further pointed out that the machines were of low capacity and hence could not supply water to all communities. In addition, FGDs revealed that the machine were designed to serve a small number of people in the villages but due to financial constraints, little efforts had been made to improve the scheme and increase the number of water points to meet the increased population. This observation was also expressed by some of the key informants that were interviewed.

4.7.4 Unreliable water supply

Unreliability of water supply was another problem reported by respondents in all villages. In fact, during FGDs it was revealed that queues were another problem facing communities

in almost all water projects. In fact, a woman who participated in FGDs said that sometimes people are forced to use unsafe water because safe drinking water sources do not produce enough water during the dry season. Power rationing and lack of water during the dry season were the main reasons which caused the unreability of water supply. This resulted in lack of safe drinking water posing a health risk to the people. In turn, this contributes a lot to the increase in water-borne disease.

4.7.5 Poor health

The study shows that the majority (83%) of responses mentioned poor health as a problem limiting their participation in water projects. This is rather surprising given the fact that health services were available in all the six villages. For example, Iwala and Imezu villages received health services from the dispensary established in their villages. Similarly, Mbalizi and Inyala provided some limited services to their inhabitants through the First Aid and Clinic built for children respectively. Due to this problem many people waste time seeking health services instead of participating in water project activities.

4.7.6 Personal commitments

The respondents revealed that personal commitment often impose a responsibility on individuals to do certain things even though they were not involved in the project. In the study area the respondents also revealed that community members have not been involved in a project, they are not equipped to fully understand the nature and rationale of the commitments they are being asked to make in water projects. The implication of this is that the success of water projects would largely depend on providing solutions to problems that limit the participation of the people. Without strong commitment from higher-level

decision makers, grassroots-level behavioural changes will eventually lose the momentum (URT, 2002).

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The main objective of the study was to investigate community participation in water development projects. The results show that the level of participation in selected rural water development projects undertaken was low. However, community participation was found to be high in the implementation of the projects. On the other hand, low participation was recorded in the problem identification, decision making, planning, monitoring and evaluation.

Chi-square (X^2) tests revealed statistically significant relationship between the level of participation in water projects and age, sex, village size and household income in descending order. The tests also showed no statistically significant relationship between the level of participation in water projects and main occupation, level of education and marital status in descending order. Specifically, the data showed that a greater number of male participated in the projects more than women. Moreover, the respondents with the income between Tshs 20,000–29,999 and with each household contributing less than Tshs. 499 participated more in water projects than those in the other income categories. The data also showed that a greater number of the respondents in the age group of 25-44 years participated in the water projects more than those in the other age groups.

Furthermore, three types of problems which limited the respondents' participation were mentioned by the respondents. These were related to the leadership, individuals and technical. Individual related problems were poor health and personal commitments.

The leadership related problems were lack of leadership accountability and lack of regular communication on project progress. The technical problems were unreliable water supply and low capacity of the installed machines.

5.2 Conclusion

The following conclusions are made based on the findings of the study:

- 1) Level of participation in water development projects was statically significant related to age, sex, and household income and village size.
- 2) Level of participation in the water projects was not statistically related to main occupation, level of education and marital status.
- 3) That majority of people were involved in the implementation process rather than other process like planning, decision making, problem identification, monitoring and evaluation.
- 4) Participatory approach is a useful tool for community development because it stimulates a sense of ownership to the water development projects.
- 5) There were three types of problems which limited the respondents' participation. These were related to the leadership, individuals and technical.

5.3 Recommendations

Based on the above conclusion the study makes the following recommendation:

- a) Adopt participatory approach to carrying out water projects and develop work in order to develop the potential of the Joint Learning Projects (JLPs) that involve community participation as a key alternative for generating development.

- b) Good health is essential if labour productivity is to be maintained. The integration of preventive and curative methods could go long way towards achieving improved health among rural dwellers
- c) Regular communication should be maintained between the leaders and villagers on the progress of water projects in the village. This could be done by convening scheduled meetings.

5.4 Suggestions for further research

This study focused largely on the aspect of participation in relation to three parameters, i.e. personal, community characteristics and attitude of the community to the participatory approach. In particular the findings presented in this study are a result of a micro-survey conducted in six villages in Mbeya district. The major limitation of micro studies is that they cannot be representative of the total population of Tanzania. In this regard, there is need for carrying out more studies on the subject in other parts of the country to allow for generalization of the findings.

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APPENDICES

Appendix 1: Sample size calculation

The study employed the following formula to calculate the sample size:

$$n = \frac{Z^2 pq}{d^2}$$

Where n = sample size when population is greater than 10,000

Z = Standard normal deviate, set at 1.96 (in simple at 2.0) corresponding to 95% confidence level,

p = proportion in the target population estimate to have a particular characteristic; if not known use 50%.

$q = 1.0 - P$

d = degree of accuracy desired, set at .05 or .02.

Therefore sample size will be

$n = Z^2 pq$

$$n = \frac{Z^2 pq}{d^2} = \frac{(2)^2 (0.50 \times 0.50)}{(0.05)^2} = \frac{4 \times 0.25}{0.0025} = \frac{1}{0.0025}$$

= 400 respondents.

30 percent of the sample size will be 120 respondents

Appendix 2: Interview schedule

INTRODUCTION

Good morning/afternoon,

My name is....., from Sokoine University of Agriculture, Morogoro. In collaboration with Mbeya District Council, we are carrying out a study in the district to determine which factors affecting community participation in water development projects in rural areas. All the information will be treated confidentially and therefore you are requested to be free to give any information that will be requested.

A. General Information

1. Interviewer's name
2. Date of Interview.....
3. Name of the respondent.....
4. Questionnaire number
5. Name of village.....
6. Name of ward
7. Division

B. Personal characteristics

1. What is your age? (In years) years
2. Sex of the respondent. Tick (✓)
 - (1) Female []
 - (2) Male []
3. What is your tribe (Tick ✓)
 1. Nyakyusa []
 2. Safwa []
 3. Malila []
 4. Others (Specify).....
4. What is your level of education (Tick ✓)
 1. Illiterate []
 2. Primary education []
 3. Ordinary secondary education []
 4. Advanced secondary education []
 5. Tertiary education []
 6. Other (Specify).....
5. What is your main occupation? Tick (✓)
 1. Peasant []
 2. Pastoralist []
 3. Saw miller []
 4. Carpenter []
 5. Civil Servant []
 6. Other (Specify).....

6. Marital Status. Tick (✓)

1. Married []
2. Unmarried []
3. Widowed []
4. Divorced []
5. Separated []

7. What is your major source of income? (Tick ✓)

1. Farming activities []
2. Off – farm activities (specify) []
3. Salary – wages []
4. Other (Specify).....

8. What is your estimated income per month? (Tick ✓)

1. Below Tshs. 5,000/= []
2. Between Tshs. 5,000/= to 20,000/= []
3. Between Tshs. 20,000/= to 30,000/= []
4. Above Tshs. 30,000/=
5. Other (specify).....

D. Level of participation

1. did you or do you participate in any of the following activities related to the project?

A. (i). In identification of the problem on the basis of which the project was established?

1. Yes []
2. No []

(ii) If yes, what roles did you play in problem identification? (check as appropriate)

1. Initiator []
2. Opinion giver []
3. Opinion seeker []
4. Information giver []
5. Information seeker []
6. Other (specify).....

(iii). If no, who identified the problem?

1. Village leadership []
2. Government agent []
3. Donor agent []
4. Villages []
5. Don't know []
6. Other (specify).....

B. (i) In decision making regarding the development of the project?

1. Yes []
2. No []

(ii). If no, Why?.....

©. (i) In planning?

1. Yes []
2. No []

(ii) If no, why.....

(iii) If yes in what capacity did you participate in the planning process?

1. Village member
2. Resource person
3. Village council member
4. village leader (chairman/secretary)
5. Other (specify).....

(iv). What main issues were considered in planning the project? (Check as appropriate)

1. Source of funds/inputs
2. Project work organization
3. Project location
4. Evaluation of project
5. Other (specify).....

D. (i) In implementation of the project?

1. Yes
2. No

(ii) If no why?.....

(iii) If no, what was or is your contribution to the implementation of the project? (check as appropriate)

1. Cash
2. labour
3. labour and cash
4. Others (specify).....

E. In project evaluation?

1. Yes
2. No

(F) In project monitoring?

1. Yes
2. No

E. Community attitudes to participatory approach

1. Please indicate your agreement or disagreement with the following statements by circling the response that reflects most coincide with your opinion concerning attitudes towards participatory approach.

1. (SA) = Strong Agree 2. (A) = Agree 3. (U) = Uncertain 4. (D) =Disagree

5. (SD) =Strong Disagree

Agreement or disagreement statements	Strong Agree 1	Agree 2	Uncertain 3	Disagree 4	Strong Disagree 5
(i)The extent level of participation in project planning cycle of water projects was really a community participatory					
(ii)Rural water projects become sustainable especially when interactive and self – mobilization participation were involved					
(iii)The reasons made the community to participate in water projects were really mate after completion of the projects in this village					
(iv)Women have been actively involved from project identification, planning, implementation and management of water project in this village.					
(v)Rural water supply projects become more sustainable especially when women are activity involved at all stages of the planning project cycle					
(vi)Government leaders have been rarely involved water users in decision making					

G. Constraints to participation in water projects.

1. What are the five major problems which constraint you from participating to the best of your ability in water projects in this village? And how could each of these problems be overcome?

Problem	Solution
1.....	1.....
2.....	2.....
3.....	3.....
4.....	4.....
5.....	5.....

Questions for guiding focus group discussion

1. What are the main sources of water in your areas?
2. What are the contribution of community, Government, Donors and NGOs in water projects?
3. What are influencing constraints hindering the community participation in water development projects?
4. Are there any villagers who do not participate in water projects
5. If there are villagers who do not participate in water projects what are the reasons?
6. Why some villagers participate in the water projects
7. What contribution is required from the community?
8. How can community participation improve water sources projects?
9. Give reasons for behavioral rigidity and lack of community participation.
10. Do you have any comment or opinion on how community can mobilize their participation to the water development projects?.....

Questions for Key Informants

1. What type of problems do you face while implementing various activities pertaining to water projects?
2. How do you solve them?
3. How were villagers involved in the problem identification, implementation, decision making, planning process, monitoring and evaluation?
4. What was village contribution in terms of cash of water projects?
5. What is your opinion about participation of water development projects in your district?

Thank you for your cooperation

