

DETERMINATION OF COMMUNITY PARTICIPATION IN THE MANAGEMENT OF WATER RESOURCES IN MOSHI RURAL DISTRICT, TANZANIA

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ABSTRACT: The study titled determination of community participation in water resource management. These data will collect by using both structured and non-structured interviews. Field observations and secondary data were used to support the truth of collected data using questionnaires. The main sampling procedures were used to obtain two representatives wards. At ward level, 100 respondents each from different households were picked at random for the study.

The main problem which faces the community participation in rural areas is personal commitment the respondents revealed that personal commitment often imposes a responsibility of individuals to do certain things even though they were not involved in the water resources management. In the study area the respondents also revealed that community members have not been involved in a water resource management, they are not equipped to fully understand the nature and rationale of the commitments they are being asked to make in water resource management. The implication of this is that the success of water resource management would largely depend on providing solutions to problems that limit the participation of the people. Without strong commitment from higher level decision makers, grass roots level behavioral changes will eventually lose momentum.

INTRODUCTION

1.1 Background of the Research Problem

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, 2014). According to (UN- HABITAT, 2016) 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 resources management is 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, 2012). 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, 2013).

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 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 (Tanzania, 2015) For example, in Moshi 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 resources management in the use of participatory approach. According to the Tanzania Water Policy (2015) 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 (Tanzania, 2013)

Therefore, community participation and involvement in a water resources management is one of the key elements of action in management planning, implementation and sustainability in rural areas. In recent years, an increasing number of comparative studies of water resources management show community participation is one of the critical components of success, empowering of the poor, ownership and water resources management (Hawlett, 2015). In principle, many programs working with people now support the idea of community participation in management (UNICEF, 2015). This study seeks to investigate community participation in water management with a particular focus of management implemented in Moshi rural district.

1.2 Statement of the Research Problem

Despite the international and national efforts made over the last three decades to involve local communities in water resources management particularly in rural community, the problem is still acute in many developing countries. Community participation in water resources delivery has been recommended as a way out of retrogressive or stagnant state rural water resource management supply systems (Bank, 2017). The problem as it has been amply shown above lies in the fact that the participation of clientele has been inactive lacking in water management. It was further noted that, to a certain extent, the problem was mainly due to inadequate participation of local communities in water resources management. For example, during the past thirty years, the participation of water resources management in most Sub Saharan Africa (SSA) countries was the responsibility of community and central government.

Unfortunately, many large water managements that will be established and managed by community and central governments in SSA failed mainly due to inadequate community participation in planning and implementing such as projects (Bank, 2017)

In light of this, the study seeks to investigate community participation in water resources management in Moshi District.

The problem it has been implying shown above lies in the fact that the participation of clientele has been in active lacking in water resources management. It will further note that, to a certain extent, the problem will mainly due to in adequate participation of local communities in water resources management. For example, during the past 30 years, the participation of water resources management in most sub-Saharan Africa (SSA) countries will be responsibility of community and central government.

1.3 Objectives

1.3.1 General Objective

The general objective of the study is to investigate community participation in the management of water resources in Moshi rural district.

1.3.2 Specific Objectives

The specific objectives are as follows:

- i. To determine the level of community participation in rural water supply management in Moshi rural district.
- ii. To investigate personal characteristics and community characteristics associated with the level of respondents' participation in water resources management in Moshi rural district.
- iii. To examine problems that hinder increased community participation in water resources management in Moshi rural district.

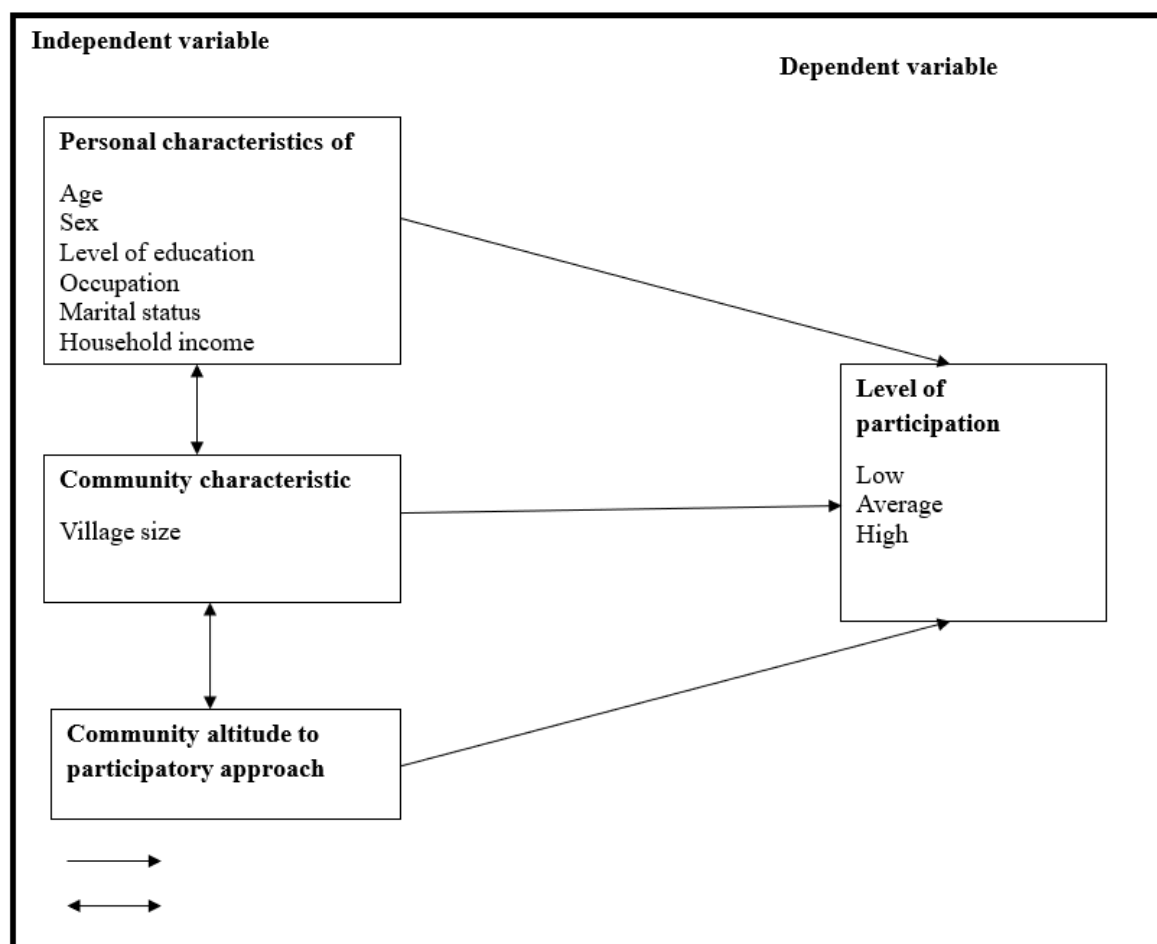
1.3.3 Research Questions

- i. What is the level of community participation in rural water resources management in Moshi rural district?
- ii. To what extent a personal characteristics and community characteristics associated with the level of respondent's participation in water resources management in Moshi rural district?
- iii. What are the problems that hinder increased community participation in water resources management in Moshi rural?

1.4 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.

Conceptual Framework



Relation for primary analysis

Relation for secondary analysis

Figure 1: conceptual framework for analysis study of participation in water resources management.

Source: United Republic of Tanzania (URT, 2018)

LITERATURE REVIEW

2.0 Introduction

The literature review section of the study includes the account of what scholars have written about this subject matter. The review oppressively looks at what scholars have written about liquid waste management in urban areas. The review lays the ground for this research study and guides the direction of gathering the research data.

2.1 Definition of Key Terms and Concepts

2.1.1 Community

(Scott, 2016). describes community as a group, structure, whether formally or informally organized, in which members play roles which are integrated around goals. It is a shared family concerns, which include parents' associations and similar bodies basing on families shared interests such as ethnic, racial, and religious matters

2.1.2 Community Participation

Community participation is a holistic approach of involving local communities in management of something (Muchiri 2014). Therefore, community participation is about involving all people in water projects with the aim of making water projects sustainable.

2.1.3 Participation

Participation is the involvement through the mere use of a service, contribution of money, materials, and labor, attendance' for example water users meeting and management' meetings or collaboration to achieve desired time for something to exist and continue deliver benefits. For this context participation has been observed as an overall taking part in water projects management so as to achieve sustainability.

2.1.4 Level of Education

Toner and Cleaver (2017) 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, 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.

2.1.5 Marital Status

Phillip and Abdillahi (2014) 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.

2.1.6 Household Income

In their study Phillip and Abdillahi (2014) 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 26 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 (2016) 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.

2.1.7 Community Characteristics

Studies have also been done on the influence of community characteristics on participation in community projects. For example, reports that there was no statistically significant effect of village size on the level of participation. Noted that

the observed findings were inconclusive attributing it to the presence of sub – village organizational 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.

2.3 Theoretical Literature Review

2.3.1 Bottom-up Approach Theory

According to Muchiri (2014) bottom-Up Approach the local community members are full encouraged to identify and plan the projects themselves for implementation with or without outsider's interference. He further has explained that top-down Approach "This is where projects are identified based on demands from beyond the community". The government does everything in stage and community is given directives and order for implementation. The reviewed literature on top down and down approaches theories indicates that demography such as supervisory and administrative characteristics are heterogeneity from each person such as age, work experience, educational background. For this reason, these are sensible proxies for fundamental differences in coalitions, values, and perceptions process, which these abilities mentioned when are shared become a good predictor to predict water project sustainability

2.3.2 Strength of Theory

The author has archived the goal on community participation in water resources management since he involves people in identify and planning the projects themselves for implementation with or without outsider's interference. Also, on the issue of the government does everything in stage and community is given directives and order for implementation

2.3.3 Weakness of the Theory

The theory fails to mention on how people will effectively participate on water resources management on how people will benefit on such management of water since the theory explained on how people participate in management

2.4 Empirical Studies

This part consists of three sections which include: level of community participation in rural water resources managements, personal characteristics and community characteristics associated with the level of respondent's participation in water resources management, problems that hinder increased community participation in water managements.

2.4.1 Level of Community Participation in Rural Water Resources Management:

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 programmers and management. 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, 2016) Participation in management 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 (Hewlett, 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 management without listening to people's responses. In this type of participation information which is shared belongs to external professionals only Manipulative participation is simply a pretending representative on official boards who are unelected and have no power in final decision-making

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

2.4.2 Problems that Hinder Increased Community Participation

The Water Management Constraints in Developing Countries Unsustainable development pathways and governance failures have generated immense pressures on water resources, affecting its quality and availability, and in turn compromising its ability to generate social and economic benefits (WWAP, 2015) Discrimination and inequalities in access to drinking water and sanitation services sanitation and safe drinking water in particular (Donat Castelló et al., 2010). Many people around the globe including women, children, the elderly, indigenous peoples and people with disabilities have lower levels of access to safe drinking water, hygiene or sanitation facilities than other groups (UNICEF, 2014)

Various studies and assessments provide a snapshot of the state and use of water resources at a given time and place, but generally do not provide a broader, more complete picture of how different dimensions of water are changing over time in different parts of the world.

2.5 Research Gap

The approaches reviewed in literature sources on community participation and water project sustainability were not effective and prove little success in developing

countries like Tanzania. However, study has suggested that government has to do away with top approach management style that has destroyed many water projects in Tanzania and adopt both top and down top approach to management of water projects while maintaining participation

RESEARCH METHODOLOGY

3.1 Introduction

This Chapter presents the methods used to collect and analyses 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 Research Design

Cross-sectional research design will be 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, 2013). This design will be used to generate quantitative and qualitative data about community participation in water development projects. This design will found to be useful because of time limitation and resource constraints.

3.3 Study Location

The study will be conducted in Moshi rural district which forms part of the Kilimanjaro region. It will be selected for the study because in some villages, water resources management activities are mainly organized through community participation under the respective village governments. Moshi rural district (See Fig. 2) is bordered to the north by the Rombo district, to the west by the Hai district, to the east by the Mwanga district and Kenya and to the south by the Arusha Region district Administratively, the council is administrative divided into 31 wards Arusha chini, kahe, kibosh kati, kimochi, kilema kusini, kindi, kirima, mabogini.

A Map of Moshi Rural District



Source: United Republic of Tanzania (URT, 2025)

The estimated population of Moshi rural 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

The ethnic groups are pare, Chaga, Maasai, and sambaa. The area in Kilimanjaro Region falls into two extremes. One part of the area is located in the lee ward side of the mountain hence it is dry and semi-arid. They receive an annual rainfall of less than 800mm deep

The largest part of the region is mountainous, surrounded by pare mountain that range from the base of mountain Kilimanjaro which is the highest mountain in Africa. This zone has increasingly become and has always been the most densely populated even up to an altitude of 2,400m due to the steep hills land has become very scarce in the region and forced out- migration to other regions in Tanzania

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 villagers	Number of population		total
		Male	Female	
Uru kusini	8	5180	5923	1113
Mabogini	7	20897	23192	44089
total	15	26077	29115	55192

Source: The United Republic of Tanzania (Population and Housing Census 2012)

3.4.2 Sampling Method and Sample Size

Purposive sampling and simple random sampling techniques are employed. Purposive sampling technique was employed to obtain the six villages. These villages are selected on basis of their having water projects. The villages covered by the study with their respective wards in brackets are Uru kusini and Mabogini, Simple random sampling technique was used to select 60 households from three villages in Uru kusini ward. Specifically, 19, 21 and 20 households were selected from Uru kusini and Mabogini villages respectively. Besides, 60 households were randomly selected from three villages in Uru kusini ward. These included 22, 21 and 17 households from Uru kusini and Mabogini villages respectively. This made a total sample size of some 120 households. This accounted for 30 percent of the population. 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. Therefore, total population of the two wards Uru kusini and Mabogini will be 55,192

Sample size

$$n = \frac{N}{1 + N(e)^2}$$

Where

n= Sample size

N = Total population

e = Size of precision

n =?

N = 55192

e = 0.1

$$n = \frac{55192}{1 + 55192 (0.1)^2}$$

$$n = \frac{55192}{551.93}$$

$$n = 99.9981$$

$$n = 100$$

3.5 Data Collection Methods

3.5.1 Primary Data

Both quantitative and qualitative data collection methods will be used to obtain primary data. The main instrument for quantitative data will be a structured questionnaire containing both closed and open-ended questions. Both qualitative and quantitative data will be collected subsequent to a pilot study conducted in Uru kusini ward. The pilot study will be 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 will be used in the study will translate in Kiswahili the national language in Tanzania. Primary data on community participation in water resource management will be collected from the respondents.

3.5.2 Focus Group Discussion

Focus group discussions (FGDs) will be used during data collection; Focus Group Discussion (FGDs) will also use in conducting and collect data for the study. The participants in FGDs will be 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 will be conducted after finishing the questionnaire survey. During the discussions the moderator introduced the topic and allowed the group members to discuss. The discussions in each session lasted about two hours.

3.5.3 Key Informants Interviews

More information will be 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 will also be collected from the Council chairman and councilors from the two wards. Generally, key informants will be asked to give their views on factors that influence community participation in water resources management and to give opinion on how community participation can be mobilized.

DATA ANALYSIS, INTERPRETION AND DISCUSSIONS

4.0 Introduction

This chapter presents the finding obtained from the research area as well as the chapter consists of four parts, first part shows the demographic characteristics of the respondents which include sex distribution, age distribution, and marital status the second part include determining the level of community participation in the management of water resource management, third part shows personal characteristics associated with the level of respondents participatory in water resource management and the fourth part examines problems that hinder increased community participation in water resource managements.

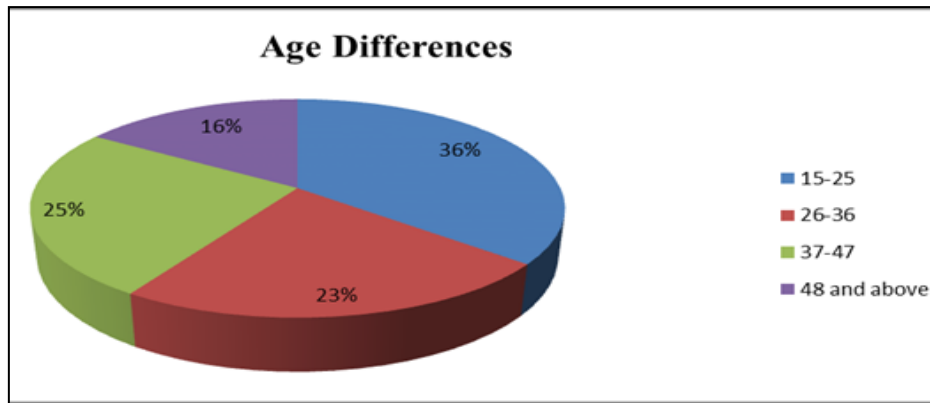
4.1 Demographic Characteristics of Respondents

This section presents the analysis and interpretation of the data concerning the demographic characteristics of the respondents including age, sex, and marital status, level of education, occupation, marital status and household income

4.1.1 Age of Respondents

The study aimed to provide the age information from both male and female. The frequency table 4.1 shows the variation of age from total of 99 respondents from the communities.

Figure 4.1: Showing Age of Respondents



Source: Research Field Data (2025)

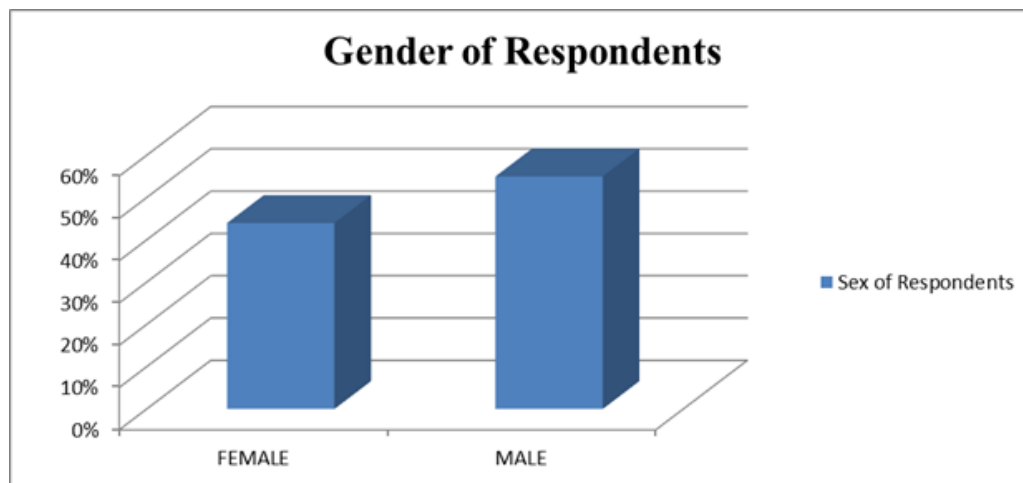
From the study geographical zone most of respondents 23 which is equal to (23.20%) out of total number of 100 that is (100%) in sampling process were between the age of 26 to 36 years and these are belonging to the active working group of the population, the other age information of the respondents state that the respondents with age between 15 and 25 were 36 equal to (36.4%) respondents in 100 of all respondent, the group aged between 37 and 47 were 25 respondents equal to (25.30%). Also, the age between and above were 15 equal to (15.2%) respondents in sampling of 100 respondents. From the notion above it is true that the information is highly collected from study area.

According to Davies (2015), reported that male aged between 15-36 were more engage in production activities like agriculture and marketing while the other groups are accompanied with civil servants and business men and respondents aged between 48 years and above are fewer because of death and disease spread.

4.1.2 Sex of the Household Heads

The study aimed to provide information from the family size and gender both male and female, the following are the gender of the respondents in the study area.

Figure 4.2: Showing Gender



Source: Research Field Data (2025)

The table above shows that 55 respondents which present (55.6%) of the respondents were males while 44 respondents which are equal to (44.3%) were females. This suggests that the majority of households in Moshi rural district are headed by men. From such explanation it implies that the majority of household heads were males.

4.1.3 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 4.1 Showing Education Level of Respondents

Level of Education	Frequency	Percent
Non-Formal Education	9	9%
Primary education	20	20%
Secondary Education	28	28%
Advance Level	27	27%
College or University	16	16%
Total	100	100%

Source: Research Field Data (2025)

The table above it shows the presence of various information concerning on education level of respondents where it shows that 20 respondents representing (20%) of the respondents reported to have finished primary school education. About

28 respondents representing (28%) of respondent indicated that they have attained secondary education while 8 respondents representing (9%) reported that they have not gone to school at all. Only 16 respondents representing (16%) of them attained post-secondary education.

According to Tanzania Demographic Survey (2016) contributed on the related study, this finding shows that a high proportion of respondents had been to school. This can be attributed to high enrolment rate due to the 40 implementations of Universal Primary Education (UPE) since 1975 that gave every child the right to free primary education.

4.1.4 Main Occupation Activity

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.

Table 4.2 Showing Main Occupation Activity

Occupation Activity	Frequency	Percent
Peasants	48	48%
Pastoralist	17	17%
Saw Miller	5	5%
Carpenter	6	6%
Civil Servant	14	14%
Other Activities	10	10%
Total	100	100.0%

Source: Field Data (2025)

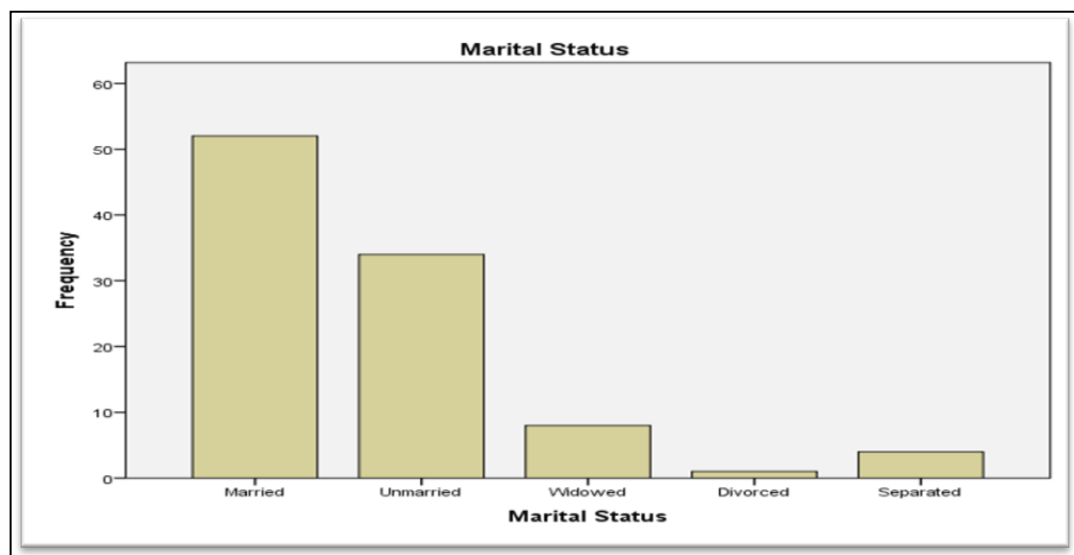
The results presented in Table 4.3 shows that the majority 48 of respondents representing (48%) of the respondents were employed as peasants. The second highest proportion which constituted 17 respondents representing (17%) of respondents was involved in pastoralist and livestock keeping. The other categories of occupations comprised 14 respondents representing (14%) of the respondents

were civil servants; these categories included civil servants, carpentry, and business men. The results also revealed that few people were engaged with other business (petty business) about (10%) among the total respondents 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.

4.1.5 Marital Status of the Respondents

The respondents involve in this study comprised of different marital status and these categories classify the marital status of the respondents if were married, not married, living together, widowed, divorced and separated.

Figure 4.5: Showing Marital Status of the Respondents



Source: Field Data (2025)

The results on marital status are presented on the table above. The findings indicate that the majority about 52 of respondents representing (52%) of respondents were married. The proportion of respondents, who were not married were 34 respondents out of total representing (34%) respondents, also majority living together were about 52 respondents and widowed were 8 respondents equal to (8%), divorced 1 respondent presenting (1%) and separated were 4 participants presenting (4%) of the total respondents.

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.

4.1.6 Household Income

This section provides information on respondents' household income per month. The following are the household income per month of the respondents in the study area.

Table 4.3: Showing Estimated Income per Month

Estimated Income (Tshs)		Frequency	Percent
	Below 5000/=	8	38.4%
	Between 5000-20000/=	25	25.3%
	Between 20000 – 30000/=	38	17.2%
	Above 30000/=	17	8.1%
	Other Estimated income	11	11.1%
	Total	100	100.0%

Source: Field Data (2025)

Results in Table 4.6 revealed that the income of most respondents about 38 representing (38%) of respondents ranged from 20,000 to 30,000, followed by income of between 5,000 to 20,000 received by 25 respondents representing about (25%) and incomes above 30 000 were 17 individuals about (4%) of the respondents.

URT (2016), 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 Tshs 593 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.

4.2 Level of Community Participation of the Respondents in Water Resource Management

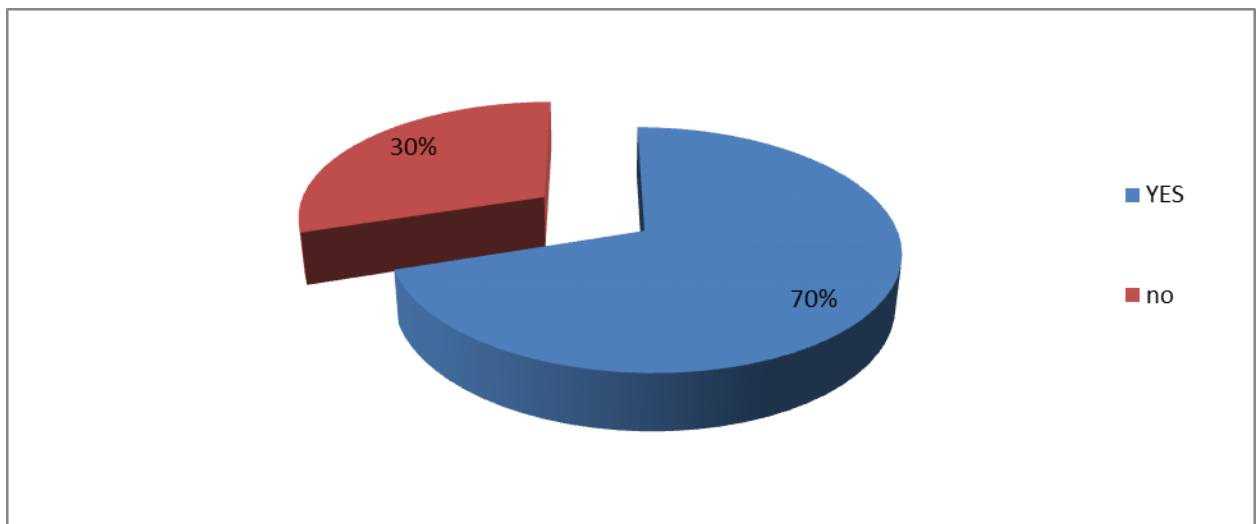
This section explains on the specific objective number one that was to determine the level of community participation in water resource management. Respondent were

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, role played by individuals in decision making, positions acted by respondents in planning and implementation on water resource management, evaluation and monitoring.

4.2.1 Participants Participated in Identification of Problems

This section shows distribution of respondents according to participation in activities related to the water resource management, some respondents participated and others did not participate in one way or another.

Figure 4.6: Showing Participants in Identifying the Problem



Source: Field Data (2025)

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 70 individuals out of the total respondents. The results in Table 4.7 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.

Shelutete (2019) He shows that the level of participation of the respondents in the selected water resource management was low. As a fact that people depend most on experts in solving their problems in water management practices rather than self-involvements.

4.2.2 Roles Played by Individuals in Problem Identification

This section presents different actions applied by respondents after identifying different problems in water management that provided them with different statuses as shown and presented in Table 4.5 below

Table 4.5: Showing Role Played By Participants

Roles Played		Frequency	Percent
	Initiator	14	14.1%
	Opinion giver/Adviser	38	38.4%
	Information Giver	11	8.1%
	Information Seeker	29	29.3%
	Other roles	7	7.1%
	Total	100	100.0%

Source: Field Data (2025)

URT (2016), the respondents revealed that it was easy for them to participate fully in the implementation of the water resource management project by providing labor. Furthermore, respondents revealed that during water resource management implementation donors (DANIDA) and government demanded recipients or beneficiaries of water projects to contribute (20%) of the total costs in terms of voluntary labor 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

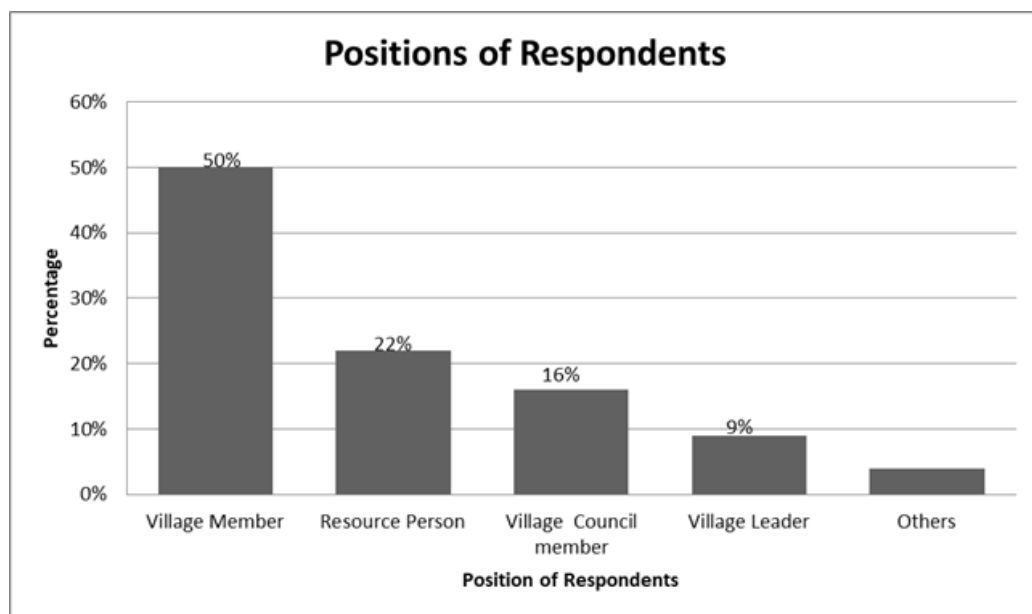
activities related to the project like planning process, problem identification, decision making, monitoring and evaluation.

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

4.2.3 Position Participated by Respondents in the Planning Process

This section shows the positions and levels of a participant to participate in the planning level, this level includes an individual as a village member, as a resource person, village council member, village leader (chairman secretary) and other positions (Figure 4.8) below show the results.

Figure 4.7: Showing Positions of Participants



Source: Field Data (2025)

The results show that each individual participated in his own positions but the most of respondents acted as village members presented by 50 respondents which present (50.5%) of the total population, also 22 individuals acted as resource person present (22.2%) of the respondents, village councils we 16 representing (16.2%) of total respondents, others are 9 village leaders and 2 unspecified positions.

URT (2016), Government leaders contribute 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.

4.3 Personal and Community Characteristics Associated with the Level of Participation in Water Resource Management

This section presents the specific objective number two which was to investigate personal characteristics associated with the level of respondents participatory in water resource management. 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.

4.3.1 Age

Data 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 (2019), Toner and Cleaver (2016) and Jakariya (2018).

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 aging between 25 to 44, they are 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.

4.3.2 Sex

Data 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 (2015) and Shelutete (2019). Mwaseba (2016) 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, 2019).

4.3.3 Level of Education

The result 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 (2019), Phillip and Abdillahi (2013), Jakariya (2017), Toner and Cleaver (2016). The above finding could be explained by the fact that literacy in the study area was rather high.

4.3.4 Marital Status

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 (2015).

4.3.5 Household Income

The determination of house hold income provided also the general picture of relationship in participation of water resource management. There was statistically significant relationship between level of participation in water management and household income rejecting the null hypothesis of no significant relationship between the two variables.

This finding is in line with the findings and it provide the information that people with high income participate much in water resource management because they are

in a high need of clean and safe water compared to those people with low class because they always receive amount for hand to mouth only rather than investing in other economic activities. This case reported by Phillip and Abdillahi (2015).

4.4 Problems Hindering the Community from Participating in Water Resource Management

This section presents on the problems hindering the community from participating in water project management. The respondents were asked to mention five major problems that inhibited them from participating to the best of their ability in water resource management. The following are the problems hindering community participation in water resource management in the study area.

Table 4.6 Showing Problems Hindering the Community from Participating in Water Resource Management.

Problems Hindering community.	Strong Disagree		Disagree		Undecided		Agree		Strong Agree	
	f	%	f	%	f	%	f	%	f	%
Lack of Leadership Accountability	1	1.0%	5	5.0%	4	4.0%	37	37.0%	53	53%
Lack of Regular Communication on Water Resource Management	3	3.0%	5	5.0%	18	18.0%	54	54.0%	20	20%
Low Capacity of Machines	4	4.0%	9	9.0%	33	33.0%	30	30.0%	24	24%
Unreliable Water Supply	8	8.0%	21	21.0%	15	15.0%	34	34.0%	22	22%
Personal Commitments	4	4.0%	16	16.0%	27	27%	40	40.0%	13	13%

Source: Field Data (2025)

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.

4.4.1 Lack of Leadership Accountability

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 resources development. For example, the village government met only sporadically and did not keep proper minutes while tax income and expenditures data were kept secret. However, the important for accountability is to be instituted in external supported and local projects to increase the sustainability of the projects.

According to URT (2016), Explained on the issue of accountability of the leaders and provided the information on that in most developing countries, there is typically lack of accountability by the leadership at both the national and local levels.

4.4.2 Lack of Regular Communication on Water Resource Management

Communication is a two-way flow 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 management project, it also determines the understanding that a community has of specific issues and the general status of the project. 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 resource management. 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.

Rogers and Hall (2017), point out that a management project is required to be inclusive and communicative with the community around. Further discussions

revealed that no measures had been taken by village leadership to rectify the collapse of two Domestic Water Points.

Furthermore, observations showed that Domestic Water Points were not efficiently operated as water was left flowing and wasted. The reason advanced by ward government leaders 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. This was a clear evidence of poor management of water project despite the presence of Village Water Committees (VWC) communication channels free flowing so as to enhance transparency.

4.4.3 Low Capacity of Machines

Water users and water committees reported that although a machine had been installed to supply water to the available population, communities continued to face water problems because some of the machine had not been in operation for quite some time due to frequent mechanical breakdown. Low water supply was reported by respondents, 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, FGD (2018) revealed that the machine was designed to serve a small number of people in the field area 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.

4.4.4 Unreliable Water Supply

Unreliability of water supply was another problem reported by respondents in the field area. In fact, it was revealed that queues were another problem facing communities in almost all water resource management projects. In fact, a woman who participated in the study 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 vulnerability of water supply.

FGD (2018) revealed that the increasing of population acted as a source of unreliability of water. 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.

4.4.5 Personal Commitments

The term commitment means a desire on doing something else or it is an engagement or obligation that restricts freedom of actions, this means an individual get to be in a state or quality of being dedicated to a cause activity (Collins, 2020)

Collins (2020) provided 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 behavioral changes will eventually lose the momentum.

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