



Participatory Monitoring and Evaluation of Community-Based Water Projects in Tanzania: An experience from Chamwino District in Dodoma Region

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Abstract: This article examines Participatory Monitoring and Evaluation (PM&E) in community-based water projects implemented by the government and non-governmental organisations in Chamwino District. A sequential exploratory research design was adopted to collect quantitative and qualitative data employing a checklist of items, and a structured questionnaire. A random sample size of 120, water users was involved. The Mann Whitney U Test was used to analyse quantitative data while qualitative data were subjected to the content analysis. The results show that beneficiaries were involved in PM&E through 'representation' in governance structures including Village Water Committees, and Community Water Supply Organisations (COWSOs), and also through use of water agents, and direct involvement of individuals in different activities. Some activities like paying water charges and meeting maintenance cost, field visits and supervising project revenues were common for government and non-governmental projects while others like electing water committee members, labour and preparation of progress reports were specific for non-governmental projects. The extent of beneficiaries' involvement in PM&E was 53.3%, with non-governmental projects showing higher beneficiaries' involvement relative to governmental projects. The Mann Whitney U Test showed higher involvement of male relative to female respondents, and the difference was significant at 5% level of significance. The article concludes that PM&E was adopted in community-based water projects, more so in non-governmental relative to government water projects. There was an institutional arrangement of governance structures to enable PM&E by 'representation'. Individual beneficiaries were also involved directly. The extent of involvement of beneficiaries was high among non-governmental projects relative to government ones. The article recommends the enhancement of PM&E in government projects to ensure realisation of project objectives.

Keywords: Participation, Water Projects, Monitoring, Evaluation

1. Introduction

Participatory Monitoring and Evaluation (PM&E), not only at a project but also organisational level, is critical for increasing achievement of the results. The use of PM&E is increasing at all levels including community-based water projects. This helps beneficiaries to reflect on changes happening during the implementation of development interventions (Goto, 2010). According to Von-Korff *et al.* (2012), PM&E in community-based water projects allows communities to control projects and make important decisions, be responsible for daily monitoring, supervision and operation of projects to ensure achievement of intended project objective of making water available for the livelihoods. The extent of implementation of PM&E in community-based water projects is influenced by different factors including a quest to address the poor functionality of water projects especially in areas that show poor sustainability of the water projects, strategies used by the implementers and activities to which beneficiaries are involved in (Ika *et al.*, 2012). For instance, Ika *et al.* (2012) reported that in all of the rural water supply projects in Africa, about 36% are not operating. This is associated with poor involvement of beneficiaries in monitoring and

evaluation despite the presence of professionals such as water engineers, technicians and financial assistance provided through external and internal financial sources (Harvey and Reed, 2007).

The concept of PM&E is defined differently in the literature by different authors (Vernooy *et al.*, 2003; Jacobs *et al.*, 2010; Onyango, 2018). However, the definitions coincide by focusing on involvement of beneficiaries in the project interventions. For instance, Vernooy *et al.* (2003) define PM&E as a process of involving beneficiaries in making decisions on what should be monitored and evaluated, select indicators for doing so, organize the collected information, analyse and interpret data. Thwala (2010) uncovers four levels of PM&E including information sharing, consultation, decision making and initiating action. During information sharing, stakeholders participate by providing the necessary information concerning project implementation and progress. Literature considers this form of participation as top-down (Conrad and Hilchey, 2011). In consultation and decision making, beneficiaries are represented by a group of leaders in the high level of management. For instance, in community-based water projects, governance structures like Water Committees, Water Users Associations and

Community Water Supply Organizations (COWSOs) usually represent views and interests of the communities. Furthermore, participation by initiating is active participation through involving communities in every stage of monitoring programs, communicating the results and taking actions. In this case, the role of the expert is to advise and guide beneficiaries rather than setting agendas (Carr *et al.*, 2012).

In Tanzania, there has been a continuous interest in involving beneficiaries in PM&E. The government, for example, incorporates aspects of PM&E in national strategies, national planning, policies and programs (URT, 2012). For example, the Five Year Development Plan implemented from 2016 to 2021 underscores the participation of beneficiaries to rationalise coordination and organisation for effective implementation and project monitoring and evaluation. In addition, the National Water Policy (2002) stresses the importance of PM&E in water projects to promote communities' ownership that in turn contributes to the performance and sustainability of the projects. Similarly, studies (Cleaver and Toner, 2006; Jiménez and Pérez-Foguet, 2010; Mandara *et al.*, 2013) emphasize the importance of PM&E as a means to ensure achievement and sustainability of water projects. Thus, the phenomenon has already produced positive results. Even though, the literature identifies some serious limitations of PM&E including being time consuming and so delaying the development process (Jacobs *et al.*, 2010). This suggests that when adopting PM&E development actors need to be aware of the limitations and how to unlock them once they occur.

This article contributes to understanding specific strategies, activities performed by the beneficiaries and the extent of involving beneficiaries in PM&E in community-based water projects to inform development actors who can strengthen and or create an enabling environment for PM&E, in case it is unfavourable. The article is guided by the following research questions: (1) How do the beneficiaries get involved in PM&E in community-based water projects? (2) What activities do the beneficiaries perform in PM&E? (3) To what extent do the beneficiaries get involved in PM&E?

2. Conceptual Framework

The key concept in this study is PM&E of community-based water projects. Ideally, and based on the literature of participation, and in particular PM&E including Cleaver (1999), Neef (2003), Jacobs *et al.*, (2010) and Onyango (2018), beneficiaries of the community-based water projects are involved in PM&E through doing different activities. This can be facilitated through strategies adopted by the government and or non-governmental organisations depending on who is implementing the project. Figure 1 shows relationship of variables in implementing PM&E of community-based water projects.

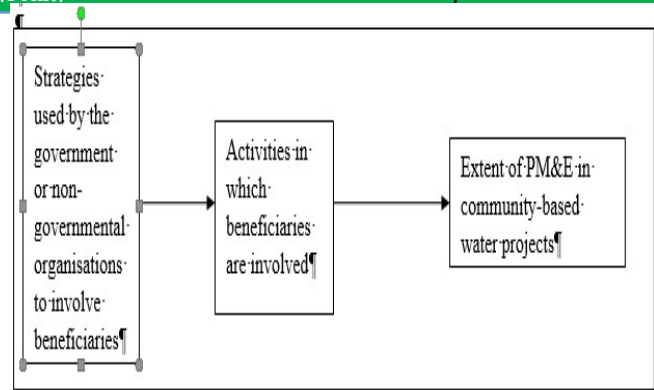


Figure 1: PM&E in community-based water projects

3. Methodology

This study was conducted in Chamwino District, Dodoma Region. The district is located at latitude 6° 15' South, longitude: 35° 42' East. The altitude ranges from 1000 to 1500 meters above sea level (Mayaya *et al.*, 2015). Chamwino has a dry Savannah type of climate, characterized by a long dry season. The minimum temperature is 19°C (June - July) while the maximum is 35° C (August to December). The district covers an area of 8056 square kilometres and has a population of 330,543. Administratively, the district is divided into 5 Division, 28 wards with a total of 77 villages (URT, 2014). The mean annual rainfall is 500mm which falls between December and March and hence the district is vulnerable to water scarcity (Mtupile and Liwenga 2017). The district was selected because of the availability of community-based water projects implemented by the government and non-governmental organizations (URT, 2014).

The study employed a sequential exploratory research design with two phases. The first phase involved the collection and analysis of qualitative data, and the results of this phase were used to refine questions for the second phase. The second phase involved the collection of quantitative data through household survey using a structured questionnaire. Focus Group Discussions (FGDs) and key informant interviews guided by a checklist of items were used to collect qualitative data.

The study population encompassed water users herein also referred to as beneficiaries of community-based water projects. The sampling procedures involved a purposive selection of four villages based on the presence of community-based water projects. The villages were Chanhumba, Miganga, Fufu and Suli from Handali, Idifu, Fufu, and Suli wards respectively. The selected villages constituted areas implementing two non-governmental projects namely Water Mission, and Good Neighbours Tanzania. They also included two projects implemented in Miganga and Fufu villages herein referred to as government water projects. In total, four (4) community-based water projects were involved: two implemented by the government and two implemented by non-governmental organizations. The overall aim of these projects is to increase clean and safe water availability to local communities that in turn improve communities' livelihoods. This can be achieved by strengthening the capacity of local communities to manage



water projects and ensuring long term function of water points. In each of the four villages involved in the study, 30 respondents were simple randomly selected making a sample size of 120 respondents. This sample size is appropriate because it allows statistical analysis leading to reasonable conclusions (Bailey, 1994).

One Focus Group Discussion was conducted in each division making a total of two FGDs. In order to get different experiences on PM&E, sex, and leadership were used as criteria to select FGDs participants. FGDs involved one Village Water Committee and one Community Water Supply Organizations (CHANHUMBA). Each FGD comprised of 8-12 participants as recommended by Creswell (2014) for effectiveness and good quality data. Women were involved in FGDs because they are responsible to collect water for domestic uses in Tanzania. The information collected during FGDs captured the background of the projects, types of projects, community participation and activities done during project implementation, institutions responsible for daily implementation of the water project, and the importance of community participation in achieving project objectives.

The Village Executive Officers (VEOs) from each village; District Water Engineer; Senior Technician and two project officers (Monitoring and Evaluation) were involved as key informants. The key informant interviews were conducted to obtain information about strategies to ensure that water users are involved in implementing water projects, and activities water users participated in implementing water projects. The key informants were selected based on the fact that they were well informed and responsible for daily project monitoring, supervision, and evaluation. In addition, a household survey guided by a questionnaire was used to collect quantitative data on demographic characteristics and the situation of projects in the selected villages. The situation of the projects included PM&E strategies and activities regarding participation of beneficiaries.

Content analysis was used to analyse qualitative data by summarising field data guided by research questions. The quantitative data were summarised by using IBM-SPSS by computing descriptive statistics to obtain frequencies and percentage distribution of the responses. A Summated Index Scale was used to measure the extent of levels of beneficiaries' participation. A total of 10 statements were used to measure the extent of levels of participation (Table 1). Every respondent was asked whether he/she strongly disagreed (1 score), disagreed (2 scores), neutral (3 scores), agreed (4 scores) or strongly agreed (5 scores) on each item of the scale. The median was used as a cut-off point to categorise beneficiaries' participation in to low, medium and high. The scores below the median represented the low extent of participation; the median represented medium participation and the scores above the median represented high participation.

The Summated Index Scale used to establish the extent of beneficiaries' participation in PM&E showed an acceptable internal consistency with a Cronbach's alpha value of 0.913. According to George and Mallery (2003), an alpha value of 0.7 and above is acceptable. This implies that the scale used in this study was consistent in measuring the constructs. The

Mann Whitney U test was used to compare the median differences between the overall participation of males and females. The test is useful to assess statistically significant differences for an ordinal dependent variable by a single dichotomous independent variable (Pallant, 2007).

Table 1: Reliability Analysis on the Level of Participation in Monitoring and Evaluation

Statement	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Involved in designing M&E Framework	29.73	65.374	0.724	0.901
Involved in designing tools for data collection to track progress of water projects	29.62	61.446	0.828	0.894
Involved in data collection	29.36	62.568	0.827	0.894
Involved in analyzing information	29.30	62.632	0.802	0.896
Involved in meetings to receive feedback about status of project implementation	29.00	62.218	0.891	0.890
Involved in meetings to make decisions on issues related to project	29.11	61.408	0.893	0.890
Involved in electing water committee leaders	28.76	68.050	0.731	0.902
Involved in providing labour and materials	28.75	67.819	0.758	0.900
Involved in paying water fees	27.51	82.639	0.803	0.932
Involved in contributing to capital, operation and maintenance costs	27.98	77.109	0.221	0.926
Reliability Statistics	No of Items	-	-	-
Cronbach's Alpha	0.913	10	-	-

4. Results and Discussion

4.1 Respondents' Socio-Demographic and Economic Characteristics

Table 2 presents the respondents' socio-demographic and economic characteristics. The results show that 53.3% of the respondents were females. Females were expected to participate more in the implementation of the community-based water projects in their communities because they are the ones responsible for daily water fetching. Therefore, females' views on issues concerning participation in monitoring, and supervision of water projects was important. In addition, 86.7% of the respondents depended on farming activities as their main source of livelihood.



The rest depended on livestock keeping. This implies that the majority of the respondents were smallholder farmers that also dominate the agricultural sector in Tanzania. The results show that 96.7% of respondents were married (Table 3).

Table 2: Respondents' socio-demographic and economic characteristics (n=120)

	Chanhumba (n=30)	Miganga (n=30)	Fufu (n=30)	Suli (n=30)	Total (n=120)
Sex					
Male	15(50)	12(40)	15(50)	14(46.7)	56(46.7)
Female	15(50)	18(60)	15(50)	16(53.3)	64(53.3)
Total	30(100)	30(100)	30(100)	30(100)	120(100)
Relationship to the Household head					
Head of Household	16(53.3)	13(43.3)	17(56.7)	13(43.3)	59(49.2)
Spouse	14(46.7)	17(56.7)	13(43.3)	17(56.7)	61(50.8)
Total	30(100)	30(100)	30(100)	30(100)	120(100)
Main source of Income					
Farming	27(90)	28(93.3)	27(90)	22(73.3)	104(86.7)
Livestock Keeping	1(3.3)	1(3)	0(0)	6(20)	8(6.7)
Small scale business	1(3.3)	0(0.0)	3(10.0)	0(0.0)	4(3.3)
Employee in the public sector	1(3.3)	1(3.3)	0(0.0)	2(6.7)	4(3.3)
Total	30(100)	30(100)	30(100)	30(100)	120(100)

Note: Numbers in brackets are percentages

With regard to the respondents' education level, 86.7% had primary education (Table 3). The mean age of the respondents was 38 years. Furthermore, the results show that the average household size was 5.09 (Table 4). This number is above 4.9 persons reported at the national level (URT, 2012).

Table 3: Respondents' Marital Status and Education Level (N=120)

	Chanhumba (n=30)	Miganga (n=30)	Fufu (n=30)	Suli (n=30)	Total (n=120)
Marital Status					
Married	28(93.3)	29(96.7)	27(90)	29(96.7)	113(96.7)
Single	1(3.3)	0(0)	1(3.3)	0(0)	2(1.7)
Widower	1(3.3)	1(3.3)	2(6.7)	1(3.3)	5(4.2)
Total	30(100)	30(100)	30(100)	30(100)	120(100)
Education Level					
No formal Education	0(0)	1(3.3)	2(6.7)	0(0)	3(2.5)
Primary Education	26(86.7)	27(90.0)	23(76.7)	28(93.3)	104(86.7)
Secondary Education	3(10.0)	1(3.3)	5(16.7)	2(6.7)	11(9.2)
Tertiary Education	1(3.3)	1(3.3)	0(0.0)	0(0)	2(1.7)
Total	30(100)	30(100)	30(100)	30(100)	120(100)

Note: Numbers in brackets are percentages

Table 4: Age and household size (n=120)

Category	Minimum	Maximum	Mean	Std. Deviation
Actual age of respondent	25	60	38.41	7.672
Actual household size	2	10	5.09	1.561

4.2 Water projects' in the study area

Through key informants, the results show that, in total, there were four (4) community-based water projects in the study

area: two were implemented by the government, the rest were implemented by non-governmental organizations including Water Mission and Good neighbours Tanzania. In addition, two projects used solar power energy and the rest used mechanical power mainly using diesel engine. Overall, 61.7% of the respondents reported the existence of solar-powered water boreholes (Table 5). Solar-powered water boreholes were appropriate due to the climatic nature of the study area, which is semi-arid with a short period of rainfall and a long dry period that allows availability of the large amounts of sunlight to ensure daily operation of the solar-powered projects (Deus *et al.*, 2013). Moreover, 100% of the respondents reported that they depended on groundwater (well-drilled groundwater) as a source of water. Although the projects were implemented by the government and non-governmental organisations, 57.5% of the respondents reported that the projects were owned by the local communities (Table 5).

Table 5: Water Projects' Information (n=120)

Category	Chanhumba (n=30)	Miganga (n=30)	Fufu (n=30)	Suli (n=30)	Total (n=120)
Water projects existed in the communities					
Mechanized scheme (electrical/diesel engine)	0(0)	30(100)	15(50)	1(3.3)	46(38.3)
Solar Powered Water Borehole	30(100)	0(0)	15(50)	29(96.7)	74(61.7)
Total	30(100)	30(100)	30(100)	30(100)	120(100)
Source of water for the project					
Groundwater (well-drilled groundwater)	30(25)	30(25)	30(25)	30(25)	120(100)
Mode of ownership of the project					
Owned by community members	30(100)	0(0)	16(53.3)	23(76.7)	69(57.5)
Owned by non-governmental organization	0(0)	0(0)	7(23.3)	5(41.7)	12(10)
Owned by government	0(0)	30(100)	7(23.3)	2(6.7)	39(32.5)
Total	30(100)	30(100)	30(100)	30(100)	120(100)

Note: Numbers in brackets are percentages

4.3 Beneficiaries' Involvement in PME of Community-Based Water Projects

Beneficiaries were involved in PM&E through establishment of governance structures and or actors including the Village Water Committees as reported by 54.6% of the respondents (Table 6). The village water committees dominated in government projects than projects implemented by non-governmental organisations. Another strategy was the establishment of Community Water Supply Organisations (COWSOs), which was reported by 37.0% of the respondents (Table 6). The use of COWSOs was in line with the Tanzania National Water policy of 2002 that underscores the establishment of COWSOs as a strategy for implementation of the water policy (URT, 2002). The overall responsibilities of the established governance



structures were to oversee implementation of the water projects bylaws, norms, and values, provide a financial report to the water users timely and facilitate water users to contribute money for maintenance and water services. Quantitative results were in line with qualitative results presented in the quotation from an interview with Project Officer for government projects:

“To ensure long term achievement of water projects, we introduced Village Water Committee in each village where projects are implemented. Through these committees, it is easy to promote community participation because leaders from these committees are elected by community members hence it is easy for them to work as one group to ensure projects’ sustainability”.

This quotation justifies the importance of this strategy on promoting transparency, participation, and accountability in managing and implementing community-based water projects. Furthermore, a key informant from the Local Government Authority (LGA) at a district level reported that:

“For the government projects, we are in the process of transforming the Village Water Committees into Community Water Supply Organizations (COWSOs) that will be legally recognized”.

Table 6: Established Governance Structures for PM&E In Community-Based Water Projects (n=120)

Strategy	Government (n=59)	NGOs (n=61)	Total (n=120)
Village Water Committees	47(79.7)	18(30)	65(54.6)
Community Water Supply Organizations	8(13.6)	37(60)	45(37)
Non-governmental Organizations	0(0)	4(6.7)	4(3.4)
Village Councils	4(6.8)	2(3.3)	6(5)

Establishment of water agents and capacity building were other strategies reported by 67.5% and 51.7% of the respondents respectively as shown in Table 7 to ensure local communities' participation on issues of monitoring and evaluation in the water project. The use of water agents was common for government and non-governmental funded projects. During FGD at Chanhumba village participants reported that in order to ensure PM&E in implementing community-based water projects, the projects are managed and operated under Village Water Agents. These are community members elected by the communities based on the terms and conditions that have been put in place. Their responsibilities include collection of water revenues from water points, attending to daily cleanliness at the water points and collecting information on the number of people fetching water and the amount of money collected, reporting on the number of water points not functional and reading water meters. The use of village water agents is an important element to inculcate a sense of communities' water projects ownership and sustainability.

Table 7: Use of water agents and capacity building (n=120)

Category	Response	Government (n=59)	Non-governmental organizations (n=61)	Total (n=120)
Water agent responsible for operation and managing project	Yes	37(62.7)	44(72.1)	81(67.5)
	No	22(37.3)	17(27.9)	39(32.5)
Total		59(100)	61(100)	120(100)
Arrangement for capacity building in the communities	Yes	13(22)	49(80.3)	62(51.7)
	No	46(78)	12(19.7)	58(48.3)
Total		59(100)	61(100)	120(100)

Although the overall results show that capacity building was common between government and non-governmental projects, further analysis show that 80.3% of the respondents in non-governmental projects reported capacity building relative to 22% who reported it in government projects (Table 7). This implies that capacity building was prominent in the community-based water projects implemented by non-governmental organisations than in those implemented by the government. During FGDs in Suli village, participants reported that:

“We never had a trained plumber before this project responsible for repairing water pumps. We used to wait for an officer from the government to come and repair them which usually took many of days until completion. The situation now is different as we have our own plumber in the village and every village member is aware of his presence”.

The results in the quotation above are line with one of the key principles of PM&E which is learning through building the capacity of project partners and intermediaries from the local population to reflect, analyze and take action (Vernooy *et al.*, 2003). This is also acknowledged by a key informant who said:

“It is hard to train everybody in the communities...so we usually work closely with community representatives who are members of COWSOs and Water Committees. We do capacity building by providing training in different aspects like operation and maintenance i.e. water meter reading, repairing water pumps to ensure daily functionality of water points; financial management i.e. record-keeping for the revenue that generated from selling water and expenses”

For the case of government projects, 78% of the respondents reported no arrangement for capacity building in the communities. This result affirms with the information provided by a key informant that:

“For most of our government water projects, issues of capacity building are a little bit challenging. We all depend on one senior technician who moves around in all villages in the district”.

Based on the quantitative and qualitative results of this study, it is clear that beneficiaries of the community-based water projects were involved in PM&E through governance structures mainly water committees and COWSOs, in



addition to using water agents and building capacities of the beneficiaries to manage the projects. This is what is known as *participation through representation*. Using governance structures, beneficiaries were represented through water committees and COWSOs. Importantly, water committees were under transformation into COWSOs as per the requirements of the National Water Policy of 2002 that recognises COWSOs as legal structures (URT, 2002). This implies that there was an institutional arrangement put in place by the Government of Tanzania to guide community-based water projects' implementation. Such system is vital for sustainability purposes.

4.4 Activities Performed by the Beneficiaries in PME of Community-Based Water Projects

Table 8 presents activities performed by water users in implementing participatory monitoring and evaluation.

Table 8: PM&E activities performed by beneficiaries of the community-based water projects (n=120)

Activities	Response	Non-governmental organisations		Total
		Government		
Paying for water charges	No	1(1.7)	5(8.2)	6(5)
	Yes	58(98.3)	56(91.8)	114(95)
Providing labour and materials	No	50(84.7)	27(44.3)	77(64.2)
	Yes	9(15.3)	34(55.7)	43(35.8)
Contributing to capital and operation and maintenance costs	No	8(13.6)	9(14.8)	17(14.2)
	Yes	51(86.4)	52(85.2)	103(85.8)
Forming and electing water committees	No	46(78)	16(26.2)	62(51.7)
	Yes	13(22.0)	45(73.8)	58(48.3)
Supervising and monitoring project revenues	No	24(40.7)	16(26.2)	40(33.3)
	Yes	35(59.3)	45(73.8)	80(66.7)
Repairing water pumps	No	50(84.7)	35(57.4)	85(70.8)
	Yes	9(15.3)	26(42.6)	35(29.2)

The results show that 95% of the respondents participated in paying for water services. This was common for government and non-governmental projects. Contributing to capital and operation and maintenance costs and supervising and monitoring project revenues were also common for government and non-governmental projects. This was in line with the qualitative results. For instance, FGDs in Suli and Chanhumba villages reported that:

“Through paying for water services has made us participate in a way that we contribute in long term function of the water projects as we see that it is our own money used for the daily operation of water points”.

Looking at the activities presented in Table 8, it is obvious that the beneficiaries were involved in PM&E at an individual level in addition to participation through representation in governance structures. This strengthened PM&E in community-based water projects. Therefore, we argue that payment for water services for example enhances ownership, sustainability, and responsibility among the beneficiaries. Furthermore, beneficiaries were willing and were able to mobilize and commit water payments to continue some or all of the project activities after the end of external support. Other PM&E activities were reported in non-governmental projects relative to government ones. This includes the provision of labour and materials; and forming and electing water committees (Table 8).

When considering furthermore PM&E activities, Table 9 shows that 93.3% of respondents reported that field visits and conducting meetings on project progress were the most activities conducted by the government and non-governmental water projects.

Table 9: PM&E Activities (n=120)

M&E Practices	Response	Non-governmental organization		Total
		Government		
Field visit and conducting meetings on project progress	Yes	54(91.5)	58(95.1)	112(93.3)
	No	5(8.5)	3(4.9)	8(6.7)
Total		59(100)	61(100)	120(100)
Providing Reports on the project's progress	Yes	8(13.6)	30(78.9)	38(31.6)
	No	51(86.4)	31(37.8)	82(68.3)
Total		59(100)	61(100)	120(100)
Participatory Rural Appraisal in village	Yes	8(13.6)	19(31.1)	27(15.3)
	No	51(86.4)	42(68.9)	93(50.8)
Total		59(100)	61(100)	120(100)

Note: Numbers in brackets are percentages

Quantitative results were in line with qualitative results from key informants as follows:

“One way we do PM&E is through follow up visits frequently. In these visits, we carry out several activities, such as assisting the local Water Committees on challenges they face, as well as water quality testing, and speaking with beneficiaries. In addition, we also collect monthly reports from the water system operator that helps us to know how many people are paying for water services”.

The quotation above implies that conducting field visits during PM&E is essential for water community-based interventions. Literature shows that field visits provide the necessary evidence to confirm the results and progress of a project (Luyet *et al.*, 2012). It also helps to ensure that project activities are implemented as planned. For instance,



Mugambi and Kanda (2013) ascertain that the most effective way to do PM&E is through field visits and meetings with the people implementing the project, meetings with the participants, and observing how activities are implemented.

4.5 Beneficiaries' Involvement in PM&E of Community-Based Water Projects

Table 10 presents responses on the extent of beneficiaries involvement in PM&E. Combining the columns for strongly agree and agree, the results show that 95% and 91.8% of the respondents were involved in paying water fees from government and non-governmental water projects respectively. Based on the same columns, the results also show that 88.1% and 93.4% of the respondents were involved in contributing to capital, operation, and maintenance costs respectively from government and non-governmental projects. In addition, majority of respondents from non-governmental compared to government projects were involved in designing tools for data collection to track progress of water projects data collection, involved in meetings to receive feedback about status of project implementation, involved in meetings to make decisions on issues related to project, involved in electing water committee leaders, involved in providing labour and materials respectively.

Based on the results presented in Table 10, there was high participation in non-governmental projects compared to government water projects. This is due to a number of factors including good communication among project initiators and community members, implementation of capacity building initiatives, presence of enabling environments such as proper water infrastructures and financial support and good governance and accountability. The same reasons were reported during FDGs in Chanhumba village where participant reported that:

"This project (non-governmental project) is ours. Everything we do, decide based on our decisions. We have a very close relationship with our donors in terms of communication and close supervision.

This quotation shows that, in the water projects implemented by non-governmental organizations, the majority of the project beneficiaries participated at a level of consultation and active participation. These types of participation involve offering options, listens to feedback and decision together by encouraging others to some additional ideas and options (Sulemana *et al.*, 2018).

The results in Table 10 also show that more than 50% of the respondents for government projects were not involved in designing monitoring and evaluation framework; designing tools for data collection to track progress of water projects; data collection, analyzing information, meetings to receive feedback about status of project implementation and meetings to make decisions on issues related to the project, respectively. This shows poor beneficiaries' participation in the community-based water projects implemented by the government compared to ones implemented by non-governmental organisations.

Table 10: Extent of involvement of beneficiaries in PM&E (n=120)

Statement	Project	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Involved in designing M&E Framework	Government	34(57.6)	11(18.6)	6(10.2)	6(10.2)	2(3.4)
	Non-governmental	5(8.2)	25(41.0)	2(3.3)	27(44.3)	2(3.3)
Involved in designing tools for data collection to track progress of water projects	Government	43(72.9)	9(15.3)	1(1.7)	4(6.8)	2(3.4)
	Non-Government	5(8.2)	10(16.4)	1(1.6)	43(70.5)	2(3.3)
Involved in data collection	Government	31(52.5)	12(20.3)	3(5.1)	13(22)	0(0.0)
	Non-governmental	5(8.2)	6(9.8)	1(1.6)	49(80.3)	0(0.0)
Involved in analyzing information	Government	28(47.5)	16(27.1)	0(0.0)	10(16.9)	5(8.5)
	Non-governmental	5(8.2)	4(6.6)	9(14.8)	41(67.2)	2(3.3)
Involved in meetings to receive feedback about the status of project implementation	Government	28(47.5)	8(13.6)	5(8.5)	18(30.5)	0(0.0)
	Non-governmental	0(0.0)	0(0.0)	1(1.6)	59(96.7)	1(1.6)
Involved in meetings to make decisions on issues related to project	Government	31(52.5)	7(11.9)	4(6.8)	16(27.1)	1(1.7)
	Non-governmental	0(0.0)	3(4.9)	5(8.2)	50(82.0)	3(4.9)
Involved in electing water committee leaders	Government	8(13.6)	25(42.4)	0(0.0)	22(37.3)	4(6.8)
	Non-governmental	0(0.0)	0(0.0)	7(11.5)	53(86.9)	1(1.6)
Involved in providing labour and materials	Government	4(6.8)	30(50.8)	6(10.2)	16(27.1)	3(5.1)
	Non-governmental	0(0.0)	1(1.6)	4(6.6)	50(82.0)	6(9.8)
Involved in paying water fees	Government	1(1.7)	2(3.4)	0(0.0)	8(13.6)	48(81.4)
	Non-governmental	0(0.0)	0(0.0)	0(0.0)	28(45.9)	33(54.1)
Involved in contributing to capital, operation and maintenance costs	Government	7(11.9)	0(0.0)	0(0.0)	35(59.3)	17(28.8)
	Non-governmental	0(0.0)	4(6.6)	0(0.0)	28(45.9)	29(47.5)

Similar results were also reported during FGD conducted in Suli Village where a participant stated that:

"We were only given a template by our project initiators (government project) for filling in only data. We were given training on how to fill them in but did not participate in planning and designing them". Moreover, during key informant interviews, it was reported that: *"For most of our government water projects, most of the issues come from the top management".*

The results in the quotation show that the participation of beneficiaries in PM&E was limited to being informed about what had already been decided by other key players in the government water projects. This, according to Ondeki (2016) implies passive participation by consultation.

Overall, the extent of PM&E is shown in Figure 2. The results show that 53.3% of the respondents showed high participation followed by 31.7% of the respondents who showed low participation.

In addition, the level of participation was high in non-governmental compared to government water projects.

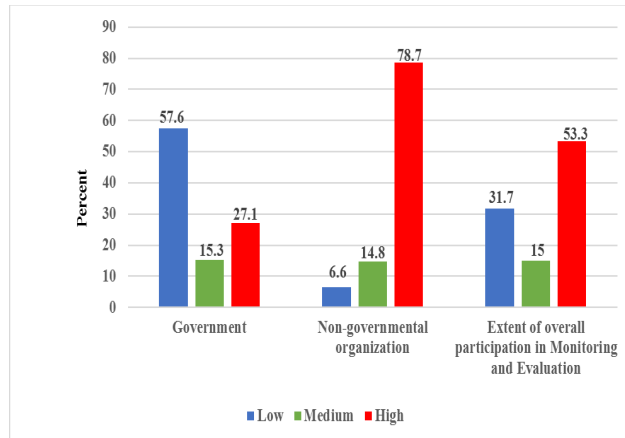


Figure 2: Extent of overall participatory in monitoring and evaluation

The *Mann Whitney U test* shows that there was no statistically significant ($p > 0.05$) difference in the extent of PM&E between males and females respondents in government water projects. This implies that males and females respondents showed similar participation in government community-based water projects (Table 11). During FGDs in Suli Village, it was reported that water users' participation was low in government compare to non-governmental projects. Participants reported that most of the decisions concerning government water projects were made by government officers.

Concerning water projects implemented by non-governmental organisations, the results show that there was statistically significant ($P \leq 0.05$) difference between males' and females' responses on the extent of participation (Table 11). This shows that males participated more than females and therefore played an important role in the provision, management, and safeguarding of water services. Quantitative results were in line with information reported during FGDs in Chanhumba village:

“Despite having a number of females in governance structures, the level of females’ participation is low because of having a lot of house responsibilities to take care of”.

The quotation implies that the difference in participation between male and female respondents mean poor consideration of gender dimension in monitoring and evaluation of community-based water projects. The low participation of females could be explained by low awareness of gender issues in project management (Espinosa, 2013).

Table 11: Participation by respondents’ sex

Responses on : Level of particip: M&E	n	Median	U	Wilcoxon W	Z	P-value
Government Projects						
Males	28	23	1384.00	3464.00	-2.170	0.608
Females	31	15				
Non-governmental Projects						
Men	28	36	490.50	2260.50	-6.947	0.000
Women	33	35				

5. Conclusions and Recommendations

The main objective of this article was to examine PM&E of community-based water projects in rural areas of Chamwino District. The article examined strategies, activities, and extent of beneficiaries’ involvement in PM&E. Based on the results and discussion, the study concludes that PM&E was adopted in the study area, and there was an institutional arrangement put in place by the Government of Tanzania and non-governmental organisations to guide community-based water projects’ implementation. Through this arrangement, beneficiaries were involved in PM&E through *representation* in governance structures mainly water committees, and COWSOs. These were responsible to oversee community-based water projects’ implementation through PM&E. In addition, beneficiaries were also involved directly by participating in different activities related to PM&E. Non-governmental organisations seemed to involve beneficiaries relative to the government.

Some strategies used in PM&E were common between non-governmental and government water projects. This includes payment of water charges; contributing to capital, operational and maintenance cost; supervision and monitoring of the projects’ revenues. In addition, forming and electing water committee members and the provision of labour and material were specific in non-governmental water projects. The article concludes further that the participation of males was higher relative to that of females.

Overall, the extent of involvement of beneficiaries in PM&E of community-based water projects was high. Non-governmental water projects showed higher involvement of beneficiaries than government projects. Based on the conclusions, the article recommends that beneficiaries in the government and non-governmental community-based water projects should continue implementing PM&E to enhanced projects’ ownership and sustainability. The article also recommends improving PM&E particularly in community-based water projects implemented by the government to ensure realisation of project objectives.



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