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# Community Participation in Water Resource Projects Management in Iringa District Council, Tanzania.

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**Abstract:** Community participation in water project management has received international attention to replace top down approaches to development**.** However, the approach receives critiques regarding the extent to which participation in water project design and implementation is meaningful and really engages communities in the process. This calls for continuous local level research to identify practices that can increase the likelihood of meaningful community participation. A cross sectional research was conducted in Iringa District, Tanzania to assess the practice of community participation on selected community water projects. The study specifically ought to assess participation of stakeholders in different stages of water projects development and to determine the role of community members in maintenance of project infrastructure. Data collection was carried out through household's survey, semi-structured interviews with key informants and focus groups discussions. Descriptive analysis was employed to answer key research questions. The study findings show that despite water being one of the essential needs in the respective communities, the initial idea came from donors. Generally, the community participation was low in almost all project phases. The communication mechanism in terms of feedback and information sharing, community capacity to engage into project technical maintenance and women participation in water project governance was found to be weak. The paper concludes that there is less consideration of the principles of community participation in executing water projects at Iringa District Council. It is recommended that the meaningful participation should adhere to the key principals of community engagement in all phases of project design and management.

**Key words:** *Community, Participation, sustainability, water project, community management*

## 1.0 Introduction

Traditional top-down approaches to policy, project, program design and implementation have increasingly lost political legitimacy and been replaced with more deliberative, inclusive and bottom-up approaches (Akhmouch and Clavreul, 2016). The history of participatory planning can be traced back towards the end of structural adjustment program when World Bank evaluated the shortcomings of development projects and realised mass failures (Nelson and Wright, 1995). Development's failures were then explained by its top-down, blueprint mechanics, which were to be replaced by more people-friendly, bottom-up approaches hence participation gained legitimacy within the institutional development world (Alejandro, 2007). Participation has, therefore, become an act of faith in development; something we believe in and rarely question (Cleaver, 1999).

Various approaches and techniques have been proposed in the course of employing participatory planning in various fields. The advancement within and across various fields of development and governance where participation plays a major role have re-affirmed the empowering potential of participation (Hickey and Mohan, 2005). Despite the re-affirmed potentials, the approaches have received critiques governing weak correlations between the theory and practice of participatory approaches**.** Mosse (2001) argues that development is driven by practice not by theory. Despite the critiques that participatory approaches have often failed to achieve meaningful social change, most development agencies now agree that some form of participation by the beneficiaries is necessary for development to be relevant, sustainable and empowering (Hickey and Mohan, 2005).

Water is one among the sectors that has undergone the transition as well and acknowledge the important roles that stakeholders from different institutional settings can contribute to effective, efficient and inclusive water management (Akhmouch and Clavreul, 2016). It has been acknowledged that effective water and sanitation management relies on the participation of a range of stakeholders, including local communities hence making it to be a fundamental principal of good water governance (United Nations 2017; Eden *et al.*, 2016). Effective engagement of community is expected to results into many economic, environmental, and social benefits (Eden *et al.*, 2016). Therefore, given the degree of attention in expanding stakeholders' role in water management projects and critiques posed to participatory planning approaches, there is a need to explore how community engagement processes have proven to be in reaching intended water project management goals. The demand for water is rising at an exponential rate due to increasing population in both urban and rural areas of developing countries (Akpor and Muchie, 2011).

Despite the increase in demand for water resource, the supply for clean and safe drinking water to their citizens has remained to be a major developmental challenge in developing countries. The implementation of Millennium Development Goals (2000-2015) registered recognized achievement of reducing a number of people who have no access to clean drinking water. Despite that noted progress, Least Developed Countries (LDCs) especially in Sub-Saharan Africa (SSA) are reported to be among the most affected, having disproportionately more of the global population without access to clean water than other major regions (Dos Santo *et al*., 2017). Given the challenges of accessing clean and safe water facing Sub-Saharan Africa and other developing countries the seventeen Sustainable Development Goals (SDGs) have included a water-specific goal (SDG 6) that aims to ''ensure availability and sustainable management of water and sanitation for all" by 2030 (United Nations, 2015).

It is imperative to note that despite high demand of water resource in Sub-Saharan Africa and efforts done by international and local stakeholders in addressing the problem a number of previous water projects were reported not to be sustainable. For example, a study conducted byNkongo (2009) reported that sustainability of rural water supplies schemes in rural Tanzania is still a big challenge. He further recommended for great community participation and separation of power and roles among various stakeholders in water supplies scheme to ensure sustainability. The recommendations by Nkongo (2009) support the argument by United Nations (2017) thateffective water and sanitation management relies on the participation of a range of stakeholders, including local communities. Without the motivation of the community to utilize

and effectively manage the new source of clean water, the sustainability is doomed (Ademiluyi and Odugbesan, 2008). International communities have agreed key principles that should guide water resource management of which ensuring participation is among them (Lein, and Tagseth, 2009).

Community participation calls for high level of control whereby the community must be able to make strategic decisions from the designing phase to the operation and management (Olajuyigbe, 2016). The community engagement in effective operation and maintenance of rural water supply systems is crucial element for the sustainability of the water project (Samuel *et al.*, 2016). For the community to be able to manage water resource project sustainability, capacity building is inevitable. This will provide power to influence water project governance (Kilonzo and George, 2017). Despite this acknowledgement, a number of community based water projects have failed due to poor maintenance (Mandara *et al*., 2013, Samuel *et al*., 2016; Leclert *et al.*, 2016) attributed to poor or limited skills by local people. Therefore, this raises an empirical research question on whether the community have capacity to manage project in terms of appropriate maintenance. Specifically, the paper focuses on technical skills for inspection of the project and maintenance.

Another important element in community project management is to ensure effective communication structures that will allow smooth flow of information. The effective communication ensures that the projects are implemented according to community expected needs. Weak communication and accountability in community managed water project has been reported as one of the factors for poor performance of the project (Leclert *et al.*, 2016). Likewise, when effective communication occurs, communities are aware, at every stage, of what is happening and of their role within the project (Dyer *et al*., 2014). Therefore, this paper presents the practice of communication and feedback mechanisms within the selected water projects.

A large part of Iringa District Council is semi-arid in which the area experience recurrent drought conditions (Sanders and Fitts, 2011). Due to this climatic condition, people living in this area experience difficult in getting clean water for domestic use. Despite the efforts of the government and donors to address access to clean water problem, the success is very minimal. According to the information from the District Executive Director's office, more than two hundred (200) government and donor funded projects have been initiated in the District (IDC, 2012). Despite this heavy investment in clean water projects, still water shortage problem is high. This has been contributed by short lifespan of the installed projects at the District. The general perception is that the sustainability of water projects at Iringa District Council is affected by the failure of the District Authority to engage the beneficiaries effectively in all stages of water projects development.

Therefore, this paper examines the practice of community participation in water resource management projects in Iringa District. Specifically, the paper answers the following research questions; do community members aware of the origin of the water projects operating in their study area? At which stage of project planning and management mostly involved? What is the dominant type of participation? Who is responsible for maintenance of project infrastructure? And lastly, is gender aspect integrated in water resource project management? Answering these key questions will provide understanding of the extent to which community members are

engaged in their own developmental projects.The findings will contribute to ongoing debate on the theory and practice of participatory planning in natural resource management specifically water and how the approaches foster the likelihood of sustainability of water projects.

## 2.0Methodology

The study was conducted in Iringa District Council (Fig. 1) which is among the four districts councils in Iringa Region. This district borders with Mpwapwa District (Dodoma Region) to the North, Kilolo District to the East, Mufindi District to the South, Chunya District (Mbeya Region) to the west and Manyoni District (Dodoma Region) to the North West. The Iringa District Council headquarters is located in Iringa Municipality along Dodoma road. The district is found between latitudes $7^{o}0'$ and $8^{o}30'$ south of the Equator and between longitudes $34^{o}0'$ and $37^{o}0'$ east of the Greenwich. Administratively, Iringa District Council is divided into 6 divisions, 25 wards, 123 villages and 718 hamlets. The council has two (2) Parliamentary Electro constituencies namely; Ismani and Kalenga.

There is insignificant variation in the sources of water during wet and dry seasons. Data from the National Sample Census of Agriculture 2007/08 show that the piped water contributes 40.7% of the source of drinking water in Iringa Rural District followed by other unreliable sources such as surface water, including rivers, dams, streams and lake (21.7%), unprotected well (9.6%), unprotected springs (9.4%) while a small percentage (9.1%) used protected well.

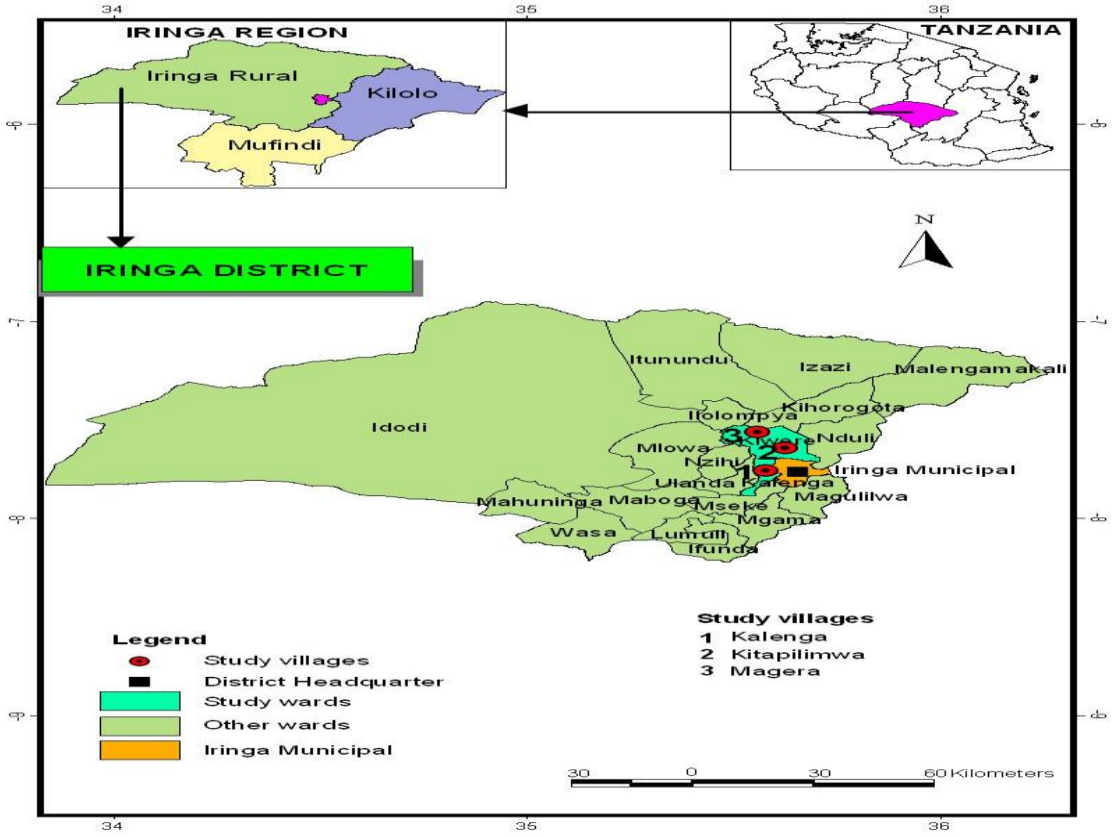


**Fig. 1:** The map of Iringa District, Tanzania, showing the study area

The study employed a cross - sectional research design since this design allows data to be collected at a single point in time (Kothari, 2004). The study involved Kitapilimwa, Mgera and Tanangozi-Kalenga water projects that are found in Kitapilimwa, Mgera and Kalenga villages respectively. In each village a total of sixty (60) benefiting households were randomly selected to make a total of one hundred and eighty (180) beneficiaries households. The quantitative data were collected through household's interviews where a structured questionnaire with both close and open-ended questions was used to obtain various pieces of information. Qualitative data were collected from purposively selected nine (09) Key informants who have experience on water project management. Focused group discussions involving 7-12 members were conducted in each village where checklists of items were used to guide the interview and discussions.

The study adopted and modified Arnstein's (1969) ladder of citizen participation that includes eight rungs. The modification includes focusing on only five rungs since the first two rungs of Arnstein's ladder refer to non-participation. Every respondent was asked to indicate whether the participation level was (1) Information, (2) Consultation, (3) Decision, (4) Acting or Control (5) upon each item. Ten statements were constructed to measure participation of the community in the project cycle (process of problem planning and designing, Implementation and monitoring and evaluation) of water projects at Iringa district Council. The respondents were asked to indicate if they participate in any activity of each project cycle and also the nature of participation.

The study employed descriptive analysis for quantitative data and data from FGDs, key informant's interviews and field observations were analysed using content analysis by broken them down into the smallest meaningful units. This enabled the researcher to ascertain values and attitude of the respondents (Bernard, 1994).During analysis, the responses were grouped into three categories of participation i.e low, medium and high level of participation. Low level implies those who were involved through getting Information and consultation only. The reason for merging these two rungs is based on the logic that these two types of participation, the power to decide for the projects remains on the hands of external people (government or donors). The community is just informed and being asked to give their opinion which is not necessarily considered in the decision making. Medium level (Decision), implies that the community can participate in the decision making process of the projects but they do not have full control of the process while the last category of High level (Acting and control), power and control of the process rests with local people.

## 3.0 Results and Discussion

### 3.1 Community Awareness about Water Project idea Development in the Study Area

Results show that almost 97% of respondents reported not to be aware of water projects initial establishment idea at their villages. During the Focus Group Discussion(FGD), respondents admitted that they were not well informed during establishment of water projects at their villages. They said their village leaders just informed them about the project but they did not ask them to give out their views about how things should go about the project. When they were asked about the source of water project nearly 78% of respondents admitted that the water project was established by donors. It was also confirmed by key informant from the district council that, the projects were donor funded. For example, the water project at Kitapilimwa, the

Tanangozi-Kalenga project which supplies water at Kalenga village and Mgera water project which use Petrol machine to pump water from Ruaha River to the village, and all infrastructures were set up by Donors. The findings indicate a sense of top down approach where donor idea surfaces the interest of the water users. Despite water service being important to the community the initial idea of the project would be expected to originate from people hence recording high sense of ownership. This is supported by Juwana *et al*. (2012) who reported that water is an essential resource that needs to be used and managed appropriately, and all relevant stakeholders should be involved in its development and management.

**Table 1: Awareness of the community during development of the project idea (n= 180)**

| Awareness | Frequency | Percentage |
|---|---|---|
| Aware | 6 | 3.3 |
| Not aware | 174 | 96.7 |
| **Establisher of the water project** | | |
| Donor | 141 | 78.3 |
| Villagers/community | 2 | 1.1 |
| Natural source | 37 | 20.6 |

## 3.2 Levels and dominant type of Community Participation in Project planning and management

As shown in Table 2, in overall project planning and management cycle, the full community participation was limited. It is shown that the community participation was low to medium level implying that community members were involved in the form of information and consultations as categorized by Arnstein's (1969). In the project phase of project design, at least 42.2% and 41.7% of the respondents indicated to be engaged in the highest rugs of participation in proposing and prioritizing project respectively. The noted relative high participation in this stage can be associated with the sensitivity of the stage itself. Although the project idea was proposed by the donor and district authority, seeking community acceptance at least from few members was important to establish social license to operate.

**Table 2: Levels of community participation in project management (n= 180)**

| Phases of project cycle | Low level participation (Information, Consultation) | | Medium level participation (Deciding together) | | Higher level participation (Acting, Control) | |
|---|---|---|---|---|---|---|
| | F | % | F | % | F | % |
| **Problem planning and designing** | | | | | | |
| Participation level of at proposing the project | 85 | 47.2 | 19 | 10.6 | 76 | 42.2 |
| Participation level at prioritizing the project | 85 | 67.2 | 20 | 11.1 | 75 | 41.7 |
| Participation level at setting objectives | 87 | 48.3 | 33 | 18.3 | 60 | 33.4 |
| **Project implementation** | | | | | | |
| Participation level at collecting project information | 96 | 53.3 | 37 | 20.6 | 47 | 26.1 |
| Analyzing project information | 106 | 58.9 | 44 | 24.4 | 30 | 16.7 |
| Capacity building | 115 | 63.9 | 40 | 22.2 | 25 | 13.9 |
| Developing action plan | 136 | 75.5 | 25 | 13.9 | 19 | 10.6 |
| Implementing the action plan | 140 | 77.8 | 21 | 11.7 | 21 | 10.6 |
| Contributing for the project (cash, in-kind) | 143 | 79.5 | 16 | 8.9 | 21 | 11.7 |
| **Project Monitoring and evaluation** | | | | | | |
| Evaluating project progress | 149 | 82.7 | 12 | 6.7 | 19 | 10.6 |

The community participation in the phase of project implementation was very limited recording very low level of participation various components. This is attributed to the institutional structure of water project development and implementation in the study area. The study by Chumbula and Massawe, (2018) reported that, the Government has always continued to be the owner and in some cases the operator of the water project in the study area that have led to a lack of commitment by the beneficiaries for safeguarding the facilities.

In the same vein, limited participation is recorded in the monitoring and evaluation phase. Assessment was made to see whether people at the study area got feedback from their water user association's ls on project progress. Through feedback community would be able to know whether actions were taken on the agreed matters and recommendations during the public meetings. The findings in Table 3 indicate that 42.8% of the respondents were not aware of whether feedback was given or not. This implies limited conduct of project meetings. As reported earlier, the community participation in implementation, monitoring and evaluation was limited hence indicating that the water project issues were managed by the government authorities through district council. Findings further show that 42.8% of respondents reported that the feedback was not provide while the similar number were not sure on whether the project progress report was shared or not. The findings corroborate the limited participation of community members in project implementation, monitoring and evaluation. Since the nature of participation was either through information or consultation, it is hard for the community members to have control over project decisions.

**Table 3: Feedback about project progress from water user association (n= 180)**

| Category | Frequency | Percentage |
|---|---|---|
| Yes | 26 | 14.4 |
| No | 77 | 42.8 |
| Not sure | 77 | 42.8 |
| **Total** | **180** | **100.0** |

The findings imply that, there is no proper communication mechanism between water users and their leaders at the study area. Communication is a two-way process therefore as water users give out their views on how water projects should be managed at their area, the same to leaders should give back information on progress of their projects. This is contrary to the goal argument by Dungumaro *et al*. (2003) who assert that, the emergence of participatory approaches demonstrates the importance of local community's consent in taking part in public decision-making processes, especially on issues that directly affect their welfare. In this context, the local community participation could provide an important foundation, experience and ideas that could lead to practical, relevant, achievable and acceptable solutions to water related problems. Sustainability of water projects at Iringa District is endangered by the failure to meaningful involve the community in all the processes of projects development.

### 3.3 Maintenance of the project facilities

The essence of community participation is to empower the resource users in terms of technical skills so that they can manage the project sustainably. This implies that the whole community has the responsibility of protecting the project against any damage or destruction which is likely

to affect the project. Through the inspection of the project facilities, the community is able to identify any damage on the project facility which might affect the proper functioning of specific project. Although the technical skills for inspection and maintenance is not expected to be vested to everybody but at least few people from user group should be knowledgeable and skilled on simple maintenance. The results in Table 4show that 45.6% of the respondents mentioned district water technician as having the responsibility of inspecting the project facilities. Furthermore, about 27% of the respondents were not aware of who was responsible for inspecting the project facilities, while the rest mention water user association leaders, village council, water attendants and some indicated the whole community. The findings reflect the fact that communities do not feel as part and parcel in protecting project facilities and this in one way might contribute to the water project failure.

**Table 4: Responsible person for inspection of project facilities (n= 180)**

| Category | Frequency | Percentage |
|---|---|---|
| District water technician | 82 | 45.6 |
| The whole community | 13 | 7.2 |
| Water attendants | 7 | 3.9 |
| Water user associations | 17 | 9.4 |
| Village council | 12 | 6.7 |
| I do not know | 49 | 27.2 |
| **Total** | 180 | 100.0 |

### 3.4 Women representation in water committees

When the respondents were asked to mention the number of women supposed to be included in water committees, 62.8% of the respondents reported that there were not aware about women representations in the water committee while 30%, 5% and 2.2% (Table 5) of the respondents mentioned to have two women, four women and six women representatives, respectively. When the same question was asked to the water committees' chairpersons at Kitapilimwa, Mgera and Kalenga villages the response was mixed. It was found that in Kitapilimwa two members among eight were women, in Mgera chairperson reported four members and in the Kalenga village water project two members were women.

**Table 5: Representation of women in the water committee (n= 180)**

| Category | Frequency | Percentage |
|---|---|---|
| Two women members | 54 | 30 |
| Four women members | 9 | 5 |
| Six women members | 4 | 2.2 |
| Not aware | 113 | 62.8 |
| **Total** | **180** | **100.0** |

The results indicate that in the study area, men are the ones who manage and operate the water projects, while women are left behind. The situation is likely to affect the water project because it is probable that women's ideas and decision are not included in the whole process of planning and management of the water projects. This is supported by Juwana *et al*. (2012) who said, "The central role of women in the provision, management and protection of water resources is

recognized and acknowledged, and Economic value of water in all uses should be emphasized and taken into account in the decision making".

## 4.0 Conclusions and Recommendations

This paper has analysed practice of community participation in selected three water projects to explore how the theory and practice of the approach revealed in reality. In all three selected projects it was found that, there is a mismatch between the theory of community participation and the practice. The mission of participatory approach that aimed at transforming the communities has failed to be witnessed. The empowerment in terms of capacity to engage into meaningful participation through decision making has not been achieved. The participation practiced by the selected project limit itself in the lower levels of information and consultation that does not offer community control over project decisions making. The community ownership of the project was limited given the feeling of not being responsible to make follow up on inspection and maintenance of the project facilities. Likewise, the existence of poor communication connotes weak accountability and hence limits the capacity for community members to be part of the project. The paper recommends that proper communication should be ensured between water users and their leaders so as to clarify or rectify any problem happening in relation to project implementation at early times. There should be clear distribution of the roles for each actor in water management at the study area.

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