



Extent of Women's Participation in Management of Rural Water Projects in Bahi District, Dodoma Region, Tanzania

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Abstract: *Different parts of the world have been emphasizing the participation of women in the management of water projects, especially following the failure of different implemented projects. The current study was conducted to explore the extent to which women are involved in managing rural water projects in the Bahi District, Dodoma Region. Specifically, the study intended to assess the extent of women's participation in the management of rural water projects. A descriptive research design was adopted in the study, while a mixed approach comprising qualitative and quantitative approaches was preferred. The study used a sample size of 136 respondents who were obtained using purposive sampling and convenience sampling techniques. Data were collected using questionnaires, interviews, focus group discussions, observation, and documentary review, while descriptive statistics and thematic analysis were used in data analysis. The study revealed that women's participation in the management of rural water projects in the Bahi District remains superficial and limited in scope. It was revealed that the participation of women in the management of water projects was low at different stages, especially in initiation, strategic planning, and monitoring. The study concludes that the level of women's participation in the management of rural water projects in the Bahi District was still low at all stages, hence affecting the efficiency and sustainability of implemented projects. The study recommends that bold, enforceable actions be taken to ensure that gender equity is more than a rhetorical commitment. Additionally, ensuring public engagement and adapting project implementation to the realities of women's lives is of paramount importance.*

Keywords: *Projects, Project Management, Participation, Sustainability of rural water projects, Efficiency of the water project.*

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1. Introduction

Different parts across the world have put much emphasis on the participation of women in the management of water projects, especially considering that most of the implemented projects have been failing in terms of non-

functionality and lack of sustainability (Mandara et al, 2017). Therefore, the majority of countries across the world implement a participatory development strategy, which is crucial in influencing women's participation in the management of projects, including water projects (Kamuzora, 2024). Examples of countries that have succeeded in involving women in water projects include

India through the Self-Employed Women's Association, which has contributed to an increased number of women trained as water managers. Other countries include Nepal, Sri Lanka, Bangladesh, and Bolivia (Jennisksen, 2022).

The participatory development strategy was initiated in the 1970s and has been emphasized in different parts of the world to ensure equal participation in development projects. Countries that were able to implement the strategy effectively benefited from increased community engagement, improvement in resource allocation, and improved accountability, something which has, in turn, led to the effectiveness of projects in the long term (Sebunya & Gichuki, 2024). The World Bank (2020) revealed that women represent 36% of leadership positions in water management bodies across the studied countries. The implication of this is that the level of women's participation is still low.

Fauconnier et al. (2018) revealed that women's participation in the management of water projects was associated with increased effectiveness of water projects and improved the likelihood of sustainability of projects. The African region has experienced various institutional and policy frameworks that have been implemented for the purpose of increasing the extent of women's participation in the management of water projects (Haddout et al, 2024). However, the rate of women's participation in the African region has been said to be low, given that a study conducted revealed that only 17% of stakeholders who were involved in the management of water projects were women (Khayat, 2021).

Tanzania also implements water projects, but the success of these projects is affected by the limited participation of women in different stages of the implementation of projects (Kironde et al., 2022). Most of the implemented projects in the country experienced limited participation of women from the initial stages of initiation, planning, and up to other stages of executing, monitoring, and evaluation of projects (Ram & Mrim, 2024). The Government of Tanzania reviewed its water policy of 1991 in 2002 to integrate the principle of women's participation in the management of water projects (URT, 2002). Furthermore, the United States Agency for International Development (USAID) established the Water Resources Integration Development Initiative (WARIDI) in 2016 to elevate women's participation in local water development projects (USAID, 2022).

However, Tanzania still experiences limited involvement of women in water policies and water management (Kironde et al.,2022). The available information just generalizes the finding by showing that Tanzania still experiences Limited involvement of Women in Water

Projects. However, there remains a knowledge gap to show the extent to which Women are actively involved across all stages of the rural Water Project. The question of the current level of Women's participation at each stage of the rural project is missing in the Literature; these stages are initiation, planning, execution, monitoring, and evaluation. Therefore, this study intends to fill in this knowledge gap.

1.1 Statement of the Problem

The government of Tanzania has been keen on ensuring that there is effective implementation of a participatory development strategy, including in water development projects. The Government of Tanzania reviewed its water policy of 1991 in 2002 to integrate the principle of women's participation in the management of water projects (URT, 2002). Furthermore, the United States Agency for International Development (USAID) established the Water Resources Integration Development Initiative (WARIDI) in 2016 to elevate women's participation in local water development projects (USAID, 2022).

Despite all these efforts, women's participation in all stages of water projects implementation in Tanzania is still ineffective, and most water projects are lacking effective involvement of women (Kironde et al.,2022). While various policies and programs have been introduced to enhance gender inclusivity, there is insufficient research identifying the extent of Women's Participation in the management of water projects, specifically in the Bahi District.

Available information generalizes the findings that Tanzania faces limited involvement of women in different stages of water management. However, there still remain knowledge gaps that show that the extent to which women are actively involved across all stages of rural water projects is not well understood. The question of the current level of women's participation in each stage is missing in the available literature. These stages are initiation, planning, execution, monitoring, and evaluation. This study intended to fill the gap by assessing the extent to which women participate in the management of rural water projects implemented in the Bahi District. This study is vital as it provides comprehensive insights into the gender disparities in rural water projects management within the Bahi District, emphasizing the critical need for gender sensitive approaches in development initiatives.

2. Literature Review

2.1 Theory of Participation

The theory of participation was founded by Lucien Levy-Bruhl in 1910 in his book *La Mentalité Primitive* (Primitive Mentality). The theory was founded to explain why and how individuals engage in collective decision-making or governance processes. The theory argues that participation of different stakeholders, including women, fosters a sense of collective ownership and therefore leads to more commitment among individuals in supporting the implementation of the decision. Furthermore, the theory argues that involvement of different stakeholders, including women, contributes to more comprehensive and creative solutions (Reed et al, 2018). The theory is criticized for lacking individual agency due to its emphasis on social structures and communities (Parvin, 2020).

The theory relates to this study, given that it provides arguments that call for the participation of different stakeholders, including Women, in different decision-making processes. Effective participation of women in all stages of the rural water project lifecycle management, i.e., project initiation, planning, execution, and monitoring and evaluation, will contribute to an increased sense of ownership of water projects as well as more comprehensive and creative solutions to problems facing implemented water projects.

2.2 Empirical Literature Review

Mandara et al (2017) revealed that there was still low community involvement in local government structures, and in most village assemblies, the involvement of women was even less. The findings further revealed that there was a low level of women's involvement in the leadership of community water projects, as the proportion of women in water management committees was below 50%. Haule (2019) revealed that the positions of men and women were recognized in project areas, while women held higher positions in the management of water projects. It was recommended that gender equality should be ensured in the management of water projects. Mommen et al. (2017) revealed that there was moderate involvement of women in committees for the management of the water system. This is because women represented only 16% of committee members. Furthermore, the findings revealed that the participation of women in regular meetings and revenue collection contributed to the better functioning of water systems.

Naiga et al. (2024) revealed that, regardless of the existence of policies and legislative regimes, women's participation in the management of water projects was still remarkably low. The study further showed that women's participation is critical for the much-needed collective action towards community-based water governance, gender equity, and empowerment. Khandker et al. (2020) revealed that the level of women's participation was still low, especially in the initial stages of initiating projects. The findings further revealed that women were involved in the management of water projects of institutions, but jointly with men, not independently. Yuerlita (2017) revealed that four factors influenced the involvement of women in the planning process of water projects and the execution stage. These factors included legal system (policy), institutional arrangements (project rules), sociocultural attitudes, ethics, and religious beliefs and practices. The findings further revealed that the sustainability of rural water and sanitation projects was hindered by the ineffective participation of women in the planning and execution of these projects.

Mgoba and Kabote (2020) revealed that there was limited involvement of women in the monitoring and evaluation of community-based water projects. It was recommended to increase participatory monitoring and evaluation of water projects, including active involvement of women in the monitoring and evaluation of these projects. Mensa (2015) revealed that women who participate better in decision-making and planning of water projects were those who have a high level of education, are older, unmarried, and very courageous. Furthermore, those who are driven by the need to serve the community, the need for water, and future aspirations.

Theresia et al (2014) argued that the effectiveness of water projects depends on the extent to which the roles of both men and women are recognized. Involving women effectively in the management of water projects contributes to increased effectiveness of the project, especially considering that women will have their own contribution towards the project. Gebreegzabher (2018) revealed that women's participation in the management of water projects in Ethiopia is still low. This is because there are few women in the water committee of the local community and the water resource management sector, but their participation in decision-making is still insignificant. Therefore, it was recommended to place increased emphasis on policy at the national and regional levels to enroll more women in the management of projects.

Seidmekiye (2018) revealed that many women do not participate effectively in the management of water

projects. The study revealed that women had limited experience in the management of water projects because they were not effectively involved in the management of those projects. The study further revealed that women lacked experience in decision-making because of ongoing perceptions of the roles of women and were given little opportunity to make decisions or develop management skills outside the family context. Helgeson, (2015) revealed that there was a low level of participation of women in the implementation and management of water projects. The findings further revealed that women were denied the opportunity to participate in the management of projects because they had been socialized into believing that they did not deserve senior positions. The study by Ram and Mrim (2024) revealed that the participation of women in water projects is low. Women participate in water projects to a small extent because they lack sufficient training in leadership in water management. Leadership and decision-making roles are restricted by traditional gender roles and patriarchal norms.

3. Methodology

A mixed approach comprising quantitative and qualitative approaches was used in this study. This is because the study consisted of numerical data, which are quantitative, and non-numerical data, which are qualitative. The study employed descriptive research design. This design was used due to its usefulness in providing answers to what, where, and when questions. The study was conducted in Bahi District, Dodoma Region, Tanzania, involving five villages in four Wards, namely Ibihwa village (Ibihwa Ward), Chikola village and Chimendeli Village (Chikola Ward), Mzogole Village (Mpinga Ward), and Bankolo village (Lamati Ward). These villages were selected given that they had completed water projects and thus making it easy to find out the level of participation of women in all stages of management of those projects. The study involved community members, community development officers, water committee members, councilors, village leaders, and district officials.

The sample size of this study was 136 respondents, including 100 community members from the five selected villages, 5 Community Development Officers (CDOs), 20 water committee members, 2 district managers, 4 councilors, and 5 village leaders. A convenience technique was used in selecting community members who were conveniently available during data collection. This technique was used because it led to flexibility in the

selection of respondents while also avoiding reliance on a certain individual to provide information. A purposive sampling technique was used in selecting wards and villages that have implemented water projects. Furthermore, it was used in selecting key informants knowledgeable about information necessary to meet the purpose of the study to participate in key informant interviews. These included Community development officers, water committee members, district officials, councilors, and village leaders.

Data was collected through questionnaires, which were distributed to community members. The questionnaire method was used because it offered a fast, efficient, and inexpensive means of gathering information from the targeted population of the study. Also, the interview method was used in collecting data from Community development officers, water committee members, district officials, councilors, and village leaders. Furthermore, the observation method was used to witness the status of water infrastructure available in the study villages, while the focus group discussion method was used to collect data from community members who were distributed in 2 groups of 8 members each. Finally, the documentary review method was used to review reports, National Water Policies, strategies, and District by-laws. Descriptive analysis was used to analyse quantitative data to generate measures of central tendency, such as percentages, tables, bars, figures, and graphs. Thematic analysis was used in analyzing qualitative data through the use of quoted sentences.

4. Results and Discussion

The section presents findings obtained from respondents of the study using questionnaires, interviews, focus group discussions, as well as findings obtained from observation. These include findings on demographic characteristics of respondents and findings on the Extent of Women's Participation in the Management of Rural Water Projects.

4.1 Demographic Characteristics of Respondents

Demographic characteristics of respondents, which are presented in this part, include age, gender, education level, and marital status. These had a close relationship with the management of rural water projects.

Table 1: Socio-Demographic Characteristics of Respondents (n=84)

Characteristic	Frequency	Percentage (%)
Age		
28-35 years	16	19
36-43 years	36	43
44-51 years	28	33
52 years and above	4	5
Gender		
Male	30	36
Female	54	64
Education Level		
No Education	0	0
Primary Education	21	25
Secondary Education	33	39
College Education	20	24
University Education	10	12
Marital Status		
Married	44	52
Single	28	33
Separated	8	9
Widow	4	5

The findings in Table 1 show that 43% of respondents were aged between 36 and 43 years, while 33% of respondents fell between 44 and 51 years. Furthermore, it was revealed that 19% of respondents were aged 28–35, while a minority of respondents (5%) were over 52 years. The findings imply that there were many youths who could participate effectively in the management of projects. Ngomano and Ramasamy (2023) revealed that youths are active in participating in the management of community development projects. Therefore, a larger number of youths in the communities at Bahi District could be useful in implementing and effectively managing water projects.

In terms of gender, the findings revealed that the majority of the respondents (64%) were female, while a minority of respondents (36%) were male. The findings imply that the study had a larger number of female respondents who knew better how women are affected by water projects implemented. Façanha (2021) found that female participation leads to better budget discipline and fewer instances of mismanagement. Therefore, effective involvement of women in the management of rural water

projects in the Bahi District could contribute to the proper budgeting process and improved management of projects.

Regarding education levels, the findings revealed that 39% of respondents had completed secondary education, followed by 24% with college education and 12% with university degrees. Only 25% reported primary-level education, while no respondents indicated a complete lack of formal education. The findings imply that most of the respondents had at least a secondary education, which was good enough to influence knowledge on the role of women in the management of rural water projects. The findings relate to those in the study by Mohamed et al (2018), who revealed that community participation in the implementation of development projects was influenced by the level of education.

Finally, in case of marital status, the findings revealed that 52% of respondents identified as married, 33% of respondents were single, 9% of respondents were separated, and 5% of respondents were widows. It was revealed that the majority of respondents were married. The findings relate to those in the study by Kamuzora (2024), who revealed that women's participation in

community development projects was affected by Marital status.

4.2 Extent of Women’s Participation in the Management of Rural Water Projects

Participation was assessed across five distinct project phases: initiation, planning, execution, monitoring and evaluation, and closure. As illustrated in Figure 1 women’s involvement varies significantly across these stages, often diminishing at the most influential levels of decision-making.

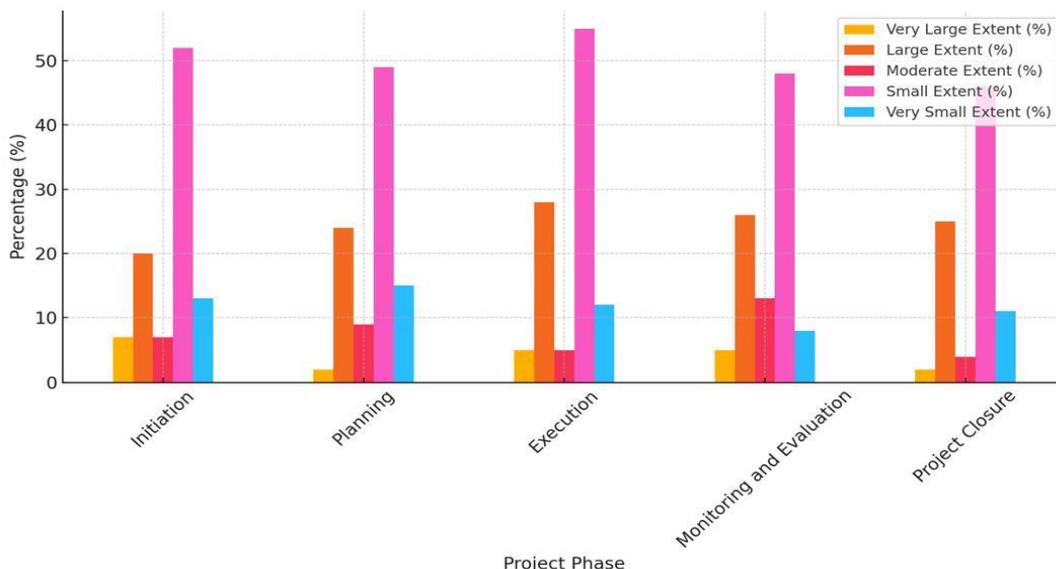


Figure 1: Visual Representation of Women’s Participation throughout the Phases

4.2.1 Initiation phase

The analysis shows that the extent of women’s participation in the initiation stage of water project management in the Bahi district was very low. About 13% of total respondents indicated that participation at the initiation stage was very small, 80% indicated that participation of women was low, while only 7% of respondents perceived women’s involvement as very high. During an interview with a water committee member, Participant 8 said:

The number of women participating in the initiation of water projects does not match the number of men who participate in this stage. This shows that women are not involved effectively in the initial stages of development of water projects; something which makes them lack enough information on water projects implemented in their areas. (KI, village A, April 2025).

Furthermore, during focus group discussions with men at Village A, participants highlighted:

Most of the implemented water projects in our villages were initiated with less participation of women. Men are given more priority in the initiation of these projects as compared to women. Women are seen as mothers who should remain at home and do domestic activities rather than participate in development projects. (FGD 1, Village A, April 2025).

The findings imply that there is limited participation of women in the management of rural water projects in the Bahi District. This is because only a few women are involved in the initial stage of the initiation of water projects. The findings relate to those of a study by Mandara et al (2017), who revealed that there was a low level of women’s involvement in leadership of community water projects, as the proportion of women in water management committees was below 50%.

4.2.2 Planning phase

The findings revealed that 49% of the respondents reported women's participation as small and 15% as very small—only a minority, 26% combined, perceived women as having moderate to considerable involvement. During interviews, Participant 2 responded:

There are representatives from communities who are invited to the planning for the implementation of rural water projects. In some communities, the majority of those who participate effectively are men, while some women may either be denied the opportunity to participate by their husbands or be less interested in participating. (KI, village B, April 2025).

Furthermore, during focus group discussions with women at Village C, participants highlighted:

The level of participation of women in the planning of water projects is still low because most women do not participate effectively in meetings held to plan how the water project is to be implemented. Others do not get information on time regarding these meetings, while others are busy with their domestic schedules. (FGD 1, Village C, April 2025).

The explanations provided show that the level of women's participation in the planning of rural water projects is still low, which shows that there is ineffective participation of women in the management of rural water projects. During observation, it was noted that a meeting concerning the planning phase of rural water Management was taking place at Village B, but had few women participating. The findings are similar to those of a study by Mommen et al (2017), who revealed that there was moderate involvement of women in committees for the management of the water system. This is because women represented only 16% of committee members.

4.2.3 ExecutionPhase

The findings revealed that 55% of the respondents perceive women's involvement in the execution phase as minimal, while 28% regard it as substantial, indicating some operational engagement, possibly in supportive or logistical roles rather than in leadership positions. The findings imply that women in the Bahi District participate in the execution of rural water projects to a low extent. During interviews, Participant 8 said, "In most projects, fewer women participate in executing projects. They only participate in using water from implemented projects". (KI, Village C, April 2025).

During observation, the researcher saw many women fetching water from the implemented projects. Limited participation of women in the execution of rural water

projects results in the implemented projects lacking gender equality and overall community ownership. The findings are similar to those in a study by Yuerlita (2017), who revealed that the sustainability of rural water and sanitation projects was hindered by ineffective participation of women in the planning and execution of these projects. This shows that water projects that lack the effective participation of women fail to be sustainable.

4.2.4 Monitoring and Evaluation Phase

The findings revealed that 48% of the respondents reported a small extent of participation in monitoring and evaluation, and a minority of respondents (5%) reported an extent of participation as very large. During interviews, participant 5 said:

There is a low rate of participation of women in the monitoring and evaluation of water projects. After initiation of the projects, most women only focus on the usage of water rather than monitoring whether the implemented projects are in a good state or not. (KI, Village A, April 2025).

Furthermore, Participant 31 said:

Most of the women in our villages do not participate in the monitoring and evaluation of water projects. They perceive that this is the responsibility of leaders, something which makes only a few women who know well about the projects participate, while the majority of them fail to monitor the projects. (KI, Village B, April 2025).

The findings imply that women in the Bahi District participate in the monitoring and evaluation of rural water projects to a low extent. Lack of women's participation in monitoring and evaluating projects denies them their basic right to determine whether implemented water projects are in line with their needs or not. The findings are similar to those of a study by Yuerlita (2017), who revealed that the sustainability of rural water and sanitation projects was hindered by the ineffective participation of women in the planning and execution of these projects.

4.2.5 Project Closure Phase

Finally, during the project closure phase, participation of women remains low, with 46% describing it as minimal. Project closure is an important phase in project management, which provides a lesson on the extent of community satisfaction with the implemented project. The ongoing exclusion of women from closure discussions highlights systemic marginalisation, which

may undermine institutional learning and sustainability efforts.

During interviews, Participant 30 explained:

Previous implemented projects, which have been closed, did not involve women's participation in the closure stage. They did not participate in closing up projects, which either failed, and this is attributed to a lack of information on the closure of the project. (KI, Village D, April 2025).

The researcher also observed previously closed water projects that failed to be sustainable, which shows that there was a problem with the sustainability of some projects. The findings are similar to those of a study by Mgoba and Kabote (2020), who revealed that there was limited involvement of women in the monitoring and evaluation of community-based water projects. Furthermore, the findings are also similar to those of a study by Naiga et al. (2024), who revealed that, regardless of the existence of policies and legislative regimes, women's participation in the management of water projects was still remarkably low.

5. Conclusion and Recommendations

5.1 Conclusion

The conclusion drawn from the study is that the Bahi District experiences limited participation of women in the management of rural water projects. Participation of women is low at some stages of the management, which include initiation, planning, execution, monitoring, evaluation, and closure of water projects. Limited participation of women in these stages of water project management leads to the misuse of resources allocated to the projects, limiting the sustainability and effectiveness of rural water projects. The absence of women in decision-making structures reflects a systemic issue that extends beyond isolated project failures—it highlights an entrenched gender imbalance that persists despite existing national policies advocating inclusion.

5.2 Recommendations

The study recommends that bold, enforceable actions are needed to ensure that gender equity is more than a rhetorical commitment. National and local governments should institutionalize gender quotas within all rural water governance structures. At the community level, change must commence with awareness and dialogue. Community-based organizations, in partnership with civil societies and religious leaders, ought to spearhead educational campaigns that underscore the significance of

women's involvement in development in general. From a practical standpoint, project implementation must adapt to the realities of women's lives. Meeting schedules and decision-making timelines should be designed with flexibility, considering women's caregiving responsibilities.

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