

Full Length Research Paper

Enhancing community participation to improve sustainability of irrigation projects in Geita District, Tanzania

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The research on which this paper is based was conducted in Geita District, Tanzania, to assess the nature of community participation in irrigation projects in three villages (Nzera, Lwenge and Nyamalulu) to find out whether community participation used in the projects was likely to lead to their long term sustainability. A cross-sectional research design was adopted in which a combination of purposive and simple random sampling techniques was employed to select a sample of 120 respondents. Quantitative and qualitative data were collected through questionnaire survey, key informant interviews and Focus Group Discussions. Quantitative data were analysed using the Statistical Package for Social Sciences (SPSS) to compute descriptive statistics and do inferential analysis while qualitative data were analysed using content analysis. The results showed that community participation in the projects was inadequate to lead to their long term sustainability due to low (< 50% except in terms of contribution of resources) participation in all implementation stages. The understanding of community participation among the beneficiaries was limited (<50%) in all aspects. Women participation was limited (37.5%). Hence community participation was used more as a means than an end. Therefore, it is argued that community participation needs to be enhanced in order to improve sustainability of irrigation projects. Hence, it is recommended that that there should be concerted efforts to sensitise and mobilise the community members to participate effectively in all aspects of the projects from problem identification to implementation.

Key words: Community participation, participatory approaches, community empowerment, project sustainability.

INTRODUCTION

Community participation is considered critical for the sustainability of irrigation schemes, especially when used both as a means and as an end. Community participation, defined as engaging users of schemes in the decision-

making processes for the planning and implementation of irrigation projects, is critical for the sustainability of irrigation schemes (Yami, 2013). However, community participation is likely to lead to long term sustainability of

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development projects if it is used both as a means and as an end (Komalawati, 2008).

According to Komalawati (2008), when used as a means community participation is used only as a tool to achieve project sustainability by developing the sense of ownership of the people concerned. On the other hand, community participation as an end is an active and dynamic form of participation that leads to an increasing role of local people at every development activity (Howllett and Nagu, 2001; Russell et al., 2008; Mwakila, 2008).

Irrigation, as Kayandabila (2013) points out, plays a very important role in mitigating vagaries of weather due to climate change. In the right environment and with correct practices irrigation provides more yield than rain-fed agriculture (Tekana and Oladele, 2014). According to Svendsen et al. (2009), it stands out strongly among other productivity-improving capital investments and technological inputs (fertilizer, advanced seed delivery systems, post-harvest processing facilities, and access to markets) because of its role in stabilizing yields in the face of climatic variability, which has increased notably in recent times. However, reports show that the irrigation sector's contribution to agricultural output is relatively small (Lebdi, 2016).

According to Lebdi (2016), Africa could irrigate 42.5 million hectares, based on available land and water resources. However, although the irrigated area has nearly doubled to 13.6 million ha (from 7.4 million ha in 1960s), in 2006 African countries irrigated just 5.4% of their cultivated land, compared with a global average of around 20% and almost 40% in Asia. Geographical coverage is also skewed since a large proportion of irrigated land is concentrated in five countries, namely South Africa, Egypt, Madagascar, Morocco and Sudan.

Irrigation development is currently very prominent in Tanzania's major agricultural and poverty reduction policies and strategies, and cited as one of the key strategies for achieving food security and agricultural growth (Oates et al., 2017). However, the development of Tanzania's irrigation potential is still modest. According to reports (URT, 2009), it is indicated that irrigation potential is estimated to be 29.4 million hectares (2.3 million hectares of high potential, 4.8 million hectares medium potential and 22.3 million hectares of low potential). Yet, only 450,392 (1.53%) is used. Furthermore, only 5% of households use irrigation facilities.

Reports show that, in line with Tanzania's national Policies the irrigation projects in Geita District form an important part of agricultural development projects that are implemented under the Agricultural Sector Development Programme (ASDP). The projects are reported to be implemented on a participatory basis, giving an opportunity for the community to participate fully in decision making and implementation (GDC, 2009). However, some recent studies in Tanzania, for example Matekere and Lema (2012); and Mahoo et al. (2012)

indicate that there has been a decline in performance of some of the projects which is attributed to ineffectiveness of community participation among other reasons.

Given this low level of irrigation development in Africa, particularly Tanzania, and its attribution to ineffectiveness of community participation, there is a need for understanding the way it is used in the projects, and to find ways to enhance it. This is in order to avoid the shortfalls of community participation practices which contributed to failure of other participatory agricultural development projects in the past.

Reports show that Agricultural production in Tanzania has increased slowly, and for some reasons Community participation has not played a major role to make irrigation projects sustainable to benefit farmers. It is reported that from 2006 to 2012, the share of the agriculture sector in total GDP decreased from 27.7 to 23.2%, while the shares of industry and service sectors increased from 20 to 22%, and from 46 to 49% respectively during this period (URT, 2016). In general the Government of the United Republic of Tanzania and decision makers are aware of community participation as an important factor in implementation of the irrigation projects (Kiseto, 2014; URT, 2016; Mwakila, 2008). However, most of the available studies which are closely related to community participation in irrigation projects such as that by Phadnis et al. (2010) Karamjavan (2014) and Yami (2013) pay little attention to how such participation is used. Therefore, it is important to assess the nature of community participation in irrigation projects to determine whether it is used both as a means and as an end. Being in line with the Tanzania's National Strategy for Growth and Reduction of Poverty phase II (NSGRP II) priority of improving food security through community based irrigation schemes for food crops (URT, 2010a), the findings from the study could provide a basis to enhance the likelihood of sustainability of the irrigation projects in Geita and other parts of Tanzania.

RESEARCH METHODOLOGY

Description of the study area

As shown in Figure 1, the research on which this paper is based was conducted in Geita District, one of the 5 districts of Geita Region. According to its 2013 Socio-Economic Profile (GDC, 2013), the district covers 5,702 km² of which 4,652 km² is dry land and the remaining 1,050 km² is covered by Lake Victoria. The district is made up by 4 administrative divisions, 35 wards and 146 villages. It is located on the shores of Lake Victoria, lying between 2° 28' and 3° 28' South and 32° to 32° 45' East.

The main economic activity for more than 90% of the population in Geita District is agriculture. The district's location makes access to rice markets of the neighbouring countries of Uganda and Kenya more convenient. All these factors combine to create a high demand for rice which is one of the most important staple cereals next to maize. Therefore, searching for ways to make the rice irrigation schemes sustainable in this district was considered to be important.

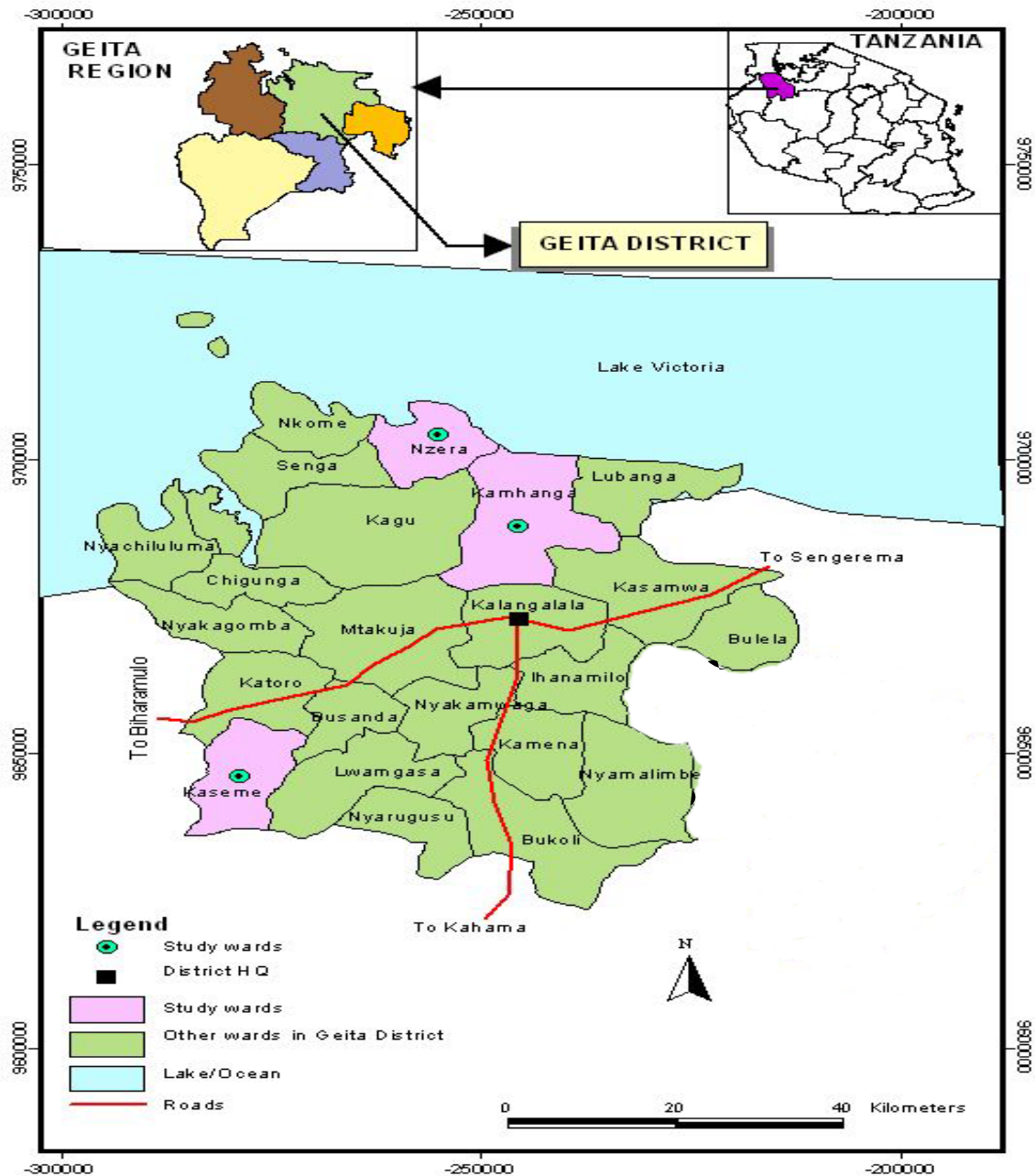


Figure 1. A map of Geita District showing the study area.
Source: Adopted from GDC (2013).

Research design, sampling and sampling techniques

The study adopted a cross-sectional research design, but during the study period there was shortage of time to perform the activity as planned. The design is cost-effective and allows one to collect the required data in a relatively short period of time. According to Bailey (1998), the design involves collection of data on more than one case, at a single point in time and is typically associated with both quantitative and qualitative research.

According to Bailey (1998), the minimum sample or sub sample for a research in which statistical data analysis is to be done is thirty (30)

cases. Therefore, the study covered a sample of 120 respondents from three villages with 40 respondents from each village. To obtain the sample a combination of different sampling techniques, that is purposive sampling and simple random sampling.

Data collection

The researcher used both qualitative and quantitative method of data collection. A combination of the methods was suitable for this

Table 1. Distribution of respondents by participation in the projects (n=120)..

Variable	Yes		No	
	(n)	%	(n)	%
Participated in initial stages	58	48.3	62	51.7
Participated in decision making meetings	56	46.7	64	53.3
Participated in irrigators' Associations	44	36.7	76	63.3
Participated by contributing resources for project implementation	68	56.7	52	43.3
Participated in Monitoring and Evaluation	41	34.2	79	65.8

Table 2. Beneficiaries' understanding of participation (n=120).

Understanding	No. of respondents	Percentage
Contributing in terms of manpower or cash	33	27.5
Involvement in planning meetings	18	15.0
Formation of groups	19	15.8
Learning	9	7.5
Do not know anything	15	12.5
Involvement in the planning process	26	21.7

type of research because they helped in soliciting full, in-depth accounts of the levels of participation of the project beneficiaries in the target communities. As observed by Tagarirofa and Chazovachii (2010), this complementary usage of the methods helps in the acquisition of comprehensive data about the variables under investigation.

Quantitative methods were used to measure variables that were linked to the research problem in the study area. The rationale behind using qualitative methods, in addition to quantitative methods, was to increase understanding of the dynamics, opinions and perceptions of people in the study area about the effectiveness of their participation in implementation of the irrigation projects.

Data analysis

Descriptive analysis was used to analyse quantitative data. Quantitative data from the questionnaire were collected, edited, summarised, coded and thereafter analysed by using the statistical package for social sciences (SPSS). SPSS was used to generate descriptive statistics which included frequencies and percentages. Analysis of the qualitative data was done through content analysis.

RESULTS AND DISCUSSION

One of the objectives of the research on which this paper is based was to assess the nature of community participation in the irrigation projects in Geita district, Tanzania. This was achieved by focusing on community participation by stages of a project, the understanding of community participation and participation by gender.

Participation by project stages

The results (Table 1), show that with the exception of

contributing resources (56.7%) community participation is generally limited (<50%) in various project project stages. This finding is in conformity with other recent studies such as a study by Mbevi (2016). This is a very important finding as far as the projects' sustainability is concerned because as some other studies, for example Masya (2016) demonstrates, in some cases the importance of community participation tend to be underestimated. According to Mbevi, the findings from the study indicated that communities have not fully participated in project cycle especially in monitoring and evaluation, training, resource contribution and decision making. According to Masya (2016) only water availability, technology used in irrigation systems, institutional and financial factors are considered to have a significant influence on success of irrigation projects. However, other recent studies, for example (Oduor et al., 2018) reveal that farmer participation in project control has significant influence on sustainability of smallholder irrigation schemes.

Beneficiaries' understanding of community participation

The findings (Table 2) show that over a quarter (27.5%) reported of understanding participation as referring to contributions in terms of manpower or cash. Furthermore, the findings show that involvement in planning meetings had (15%) of respondents, while formation of groups had (15.8%) of respondents. This suggests a lack of clear understanding of community participation among the project beneficiaries. This finding is important because as Kuruvilla and Sathyamurthy (2015) notes, community

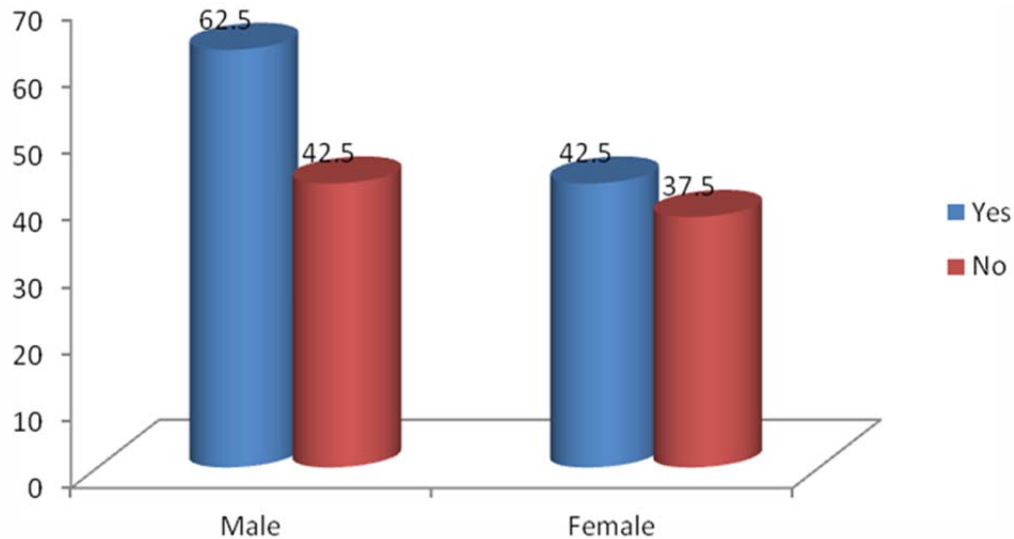


Figure 2. Gendered participation in the irrigation projects.

participation has not yet got its status in the development circle. In this case the participants seem to have a fragmented understanding of the concept. However, according to Kuruvilla and Sathyamurthy (2015), participation includes people's involvement in decision making process, in implementing programmes, their sharing in benefits of development programmes and their involvement in efforts to evaluate such programmes.

Participation in the projects by gender

Figure 2 show that only 37.5% of female respondents reported of participating in the projects as compared to 62.5% of male respondents. The findings indicate that the participation of women were generally limited. The finding is of great importance since as Yami (2013) found, Water User Associations (WUA) committees are male-dominated and the views of women are hardly represented in the decision making. This highlights the need to promote women's participation in decision-making for water management and also suggests ways in which women's access to water can be improved through equitable development (Tekana and Oladele, 2014). However, as Koopman et al. (2001) notes, participation in irrigation projects is more effective when women are involved.

The quantitative findings in relation to the nature of community participation in the projects are further confirmed by the qualitative findings from key informant interviews and FGDs. During the key informant interview it was remarked that:

“Formulation of the three Irrigation projects (Nyamboge/Nzera, Lwenge and Nyamalulu) was based

on a systematic assessment of the existing situation and was developed through a participatory approach involving key agricultural stakeholders. A team of agricultural stakeholders at the district level in collaboration with the field extension officers from the respective wards prepared an initial focus question on how low income households and households with food insecurity problems caused by low agricultural productivity would be addressed, which was later presented to the communities to get a shared perception of the problems they wished to overcome” (Geita District Irrigation Officer-DIO).

However, for effective community involvement in irrigation projects, it is required that the project team has to spend considerable time with the beneficiaries to outline the strategies for implementation of the project and seek their inputs. It is in this way that effective community participation in initial stages can be ensured (Irrigation Futures, 2011).

The concern for lack of active community involvement in the design of the projects featured in almost all of the Focus Group discussions (FGDs). In all villages the discussants raised concern over lack of effective mobilisation for the communities to participate in early stages of the projects, inadequate community meetings concerning the projects, lack of clear information regarding their involvement in the formed irrigators' associations and setting of the contributions for the projects. One participant remarked that:

“Generally, I can say that our involvement in this irrigation project, as a community, is limited. We were not consulted to give our views, may be our leaders. The project team came from the district with their ideas and the meeting was just used as a rubber stamp to inform us about their pre-conceived ideas. We are also informed

that each beneficiary will be required to contribute a bag of rice per year for the project operations and maintenance fund, but we were not involved in discussing all of these issues” (a young man from Nzera village).

These remarks further highlight the lack of active community participation in initial stages of the projects. Thus, in the light of ‘community participation as a means’, it can be considered that the communities were just mobilised to get things done, a top down type of mobilisation, which was enforced to achieve the pre-determined project objectives imposed from above. This remains a case while literature on community participation shows that giving the beneficiaries an opportunity to actively participate in all aspects increases their sense of ownership of development projects and in turn leads to sustainability of the projects (Komalawati, 2008; Ahmad and Talib, 2010).

CONCLUSION AND RECOMMENDATIONS

The findings show that community participation in the projects was generally inadequate. This is indicated by a small percentage of respondents who reported participating (<50% in all aspects except participation by contributing resources to the project); a relatively large percentage (27.5%) of respondents who reported understanding participation as contributing in terms of manpower or cash and a limited use of participatory techniques (mainly relying on O&OD only) as reported in key informant interviews. In the light of ‘community participation as a means versus community participation as an end’ this means that community participation was used more as a means than an end.

Therefore, in view of the finding that community participation in the projects was inadequate; this paper recommends that there should be concerted efforts to sensitise and mobilise the community members to participate in all aspects of the projects from problem identification to implementation. Participation should be enhanced by applying more innovative participatory approaches like PRA in addition to O&OD. Local government officials should be trained on the use of participatory approaches with a focus on participation as a means and participation as an end. Community members should be facilitated to understand deeply the meaning of participation and their roles in participatory processes. Provision of gender education to local government officials and community leaders should be strengthened. Regular monitoring of the projects should be undertaken to identify gaps in participation and act on the situation accordingly.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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