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The influence of beneficiary participation on sustainability of donor-funded projects in Tanzania a case study of OLMULO water project in Arusha

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Abstract
Sustainability of donor-funded water projects is a major challenge in developing countries such as Tanzania. Water point Mapping survey conducted in 2009 by Water Aid in 51 districts including Arusha region found that 46% of public improved water points in rural areas of Tanzania are not functioning for a variety of undocumented reasons. This has accelerated a challenge in regards to access safe water in Arusha region. Beneficiary involvement has widely been cited as one of the factors in project sustainability. The study sought to examine the influence of beneficiary involvement on sustainability of donor-funded projects using OLMULO water project in Arusha region as a case study. The study adopted explanatory research design covering a target population of 30,000 community members who are beneficiaries of OLMULO water project from Oljoro, Murriet and Losinyai wards, Water Users Association, funding and implementing agenesis in Arusha region, Tanzania. Data was collated from a stratified simple random sample of 395 respondents through questionnaires and focus group discussions. Descriptive and inferential statistics were used to analyze the data. Pearson correlation and regression techniques were employed to assess the influence of beneficiary involvement on sustainability of donor-funded projects in Tanzania. The study revealed that beneficiary involvement in project planning and implementation in donor-funded projects influences project sustainability in Tanzania.

Keywords: beneficiary involvement, project planning, project implementation, donor-funded projects, project sustainability

Introduction

Literature on the dismal performance of water projects in most African countries has been informative and thought-provoking. Much funding has been spent in Africa on building boreholes and wells that became useless because they are not maintained or fixed when they break down. On average, only one third of water points built by NGOs in Africa region are functionally working and the remaining are in disrepair IIED (2014). According to World Bank (2014) [29], it is projected that by 2025 more than 3 billion people will be living in water stressed countries. A huge uneven distribution of fresh water resources combined with climate change is already deepening water related problems World Bank (2010) [30]. The demand for water is rising at an alarming rate due to increasing population in both urban and rural areas and it is becoming a challenge for developing countries to provide safe and clean water for their citizens (Akpor and Muchie, 2011) [1]. Lack of clean water and basic sanitation services remains one of the world's most urgent health issues. It is estimated that 1.1 billion people in developing countries do not have access to safe drinking water and 2.6 billion people lack access to basic sanitation (UNDP, 2006; WHO & SIDA, 2010; UNICEF and WHO, 2005) [20, 18]. Access is limited to those living in rural communities; Africa being the worst where only 22% of rural people had access to a safe supply (Black, 1985). In Sub-Saharan Africa, about 250 million people in rural areas lack safe and accessible water. It is also observed that inadequate water supply, insufficient sanitation and unsafe hygiene cause and reinforce poverty and deepen the disparity between rich and poor (Hodgkin and Nicol, 1994 & 2000; SIDA, 2004) [7]. It is both rural and urban poor communities who are mostly impacted by inadequate water supply and sanitation services.

Harvey and Reed (2006) argue that traditionally water supply sector in sub-Saharan Africa has been heavily dependent on external support from international and bilateral donors. Donors have significant influence on policy decisions and often work in partnership with governments. Tanzania is among one of the many countries that receives loan from the World Bank for water projects. According to United Republic of Tanzania 2012 population census report, the country has a population of about 44,928,923 million people of which more than 80% live in rural areas. It is estimated to grow from 34 million people to about 63 million people by 2025 (URT, 2000 & 2006) [23, 24]. Tanzania ranks 164 out of 177 countries in the UNDP's Human Development Index (UNDP, 2005) and 36% of the mainland population is below the basic needs poverty line according to Household Budget Survey report (UTR, 2000). It is forecasted that, the increase in population would create more challenges with regard to water supply and basic sanitation services. As of 2006, drinking water coverage was 50-60% in Tanzania (UN, 2006) with only 45% of rural residents and 54% of the entire country having received improved water sources (WB, 2008). According to the Ministry of Water and Livestock Development (2002), about 73% of the urban population and 50% of rural population in Tanzania had access to reliable water supply. The proportion of people served by the 19 urban water authorities who use drinking water from improved sources increased from 74% in

2005 to 84% in December 2009 (URT, 2011) [25]. From June 2003, rural water coverage had gone up to 53% from 49% in 2000 (URT, 2005) [24].

Despite the progress made, it was reported that about 30% of the rural water schemes were not functioning properly due to poor operation (World Bank, 2001) [27]. For example, a study conducted by Water Aid in Dodoma region has revealed that one hundred and nine (109) water projects out of three hundred fifty seven (357) projects are not functioning (Kariba, 2002). In addition,a study conducted by Ben Taylor in 2009 for Water Aid Tanzania shows that sustainability of rural water supplies is a major challenge in Tanzania. Water point Mapping (WPM) survey conducted in 51 districts found that only 54% of all public improved water points are functional. Nearly half (46%) of public improved water points in rural areas of Tanzania are not functioning (Taylor, 2009) [17]. Resultantly, this dismal performance on water projects in the country has led almost 46% of people in Tanzania to not have access to safe water (Water Aid, 2016).

Development scholars argue that the reason why most water project fail to be sustainable is because beneficiaries are not engaged throughout the project cycle especially at the design stage, planning, implementing and managing water projects (Gelar, 2008) [5] and (Lewis, 2009). This problem has been attributed to donor agencies and government top-down approaches. Studies conducted by Kumar (2002), Schouten and Moriarty (2003) [16] assert that participation is a key instrument to create self-reliant and empowered communities and to stimulate community level mechanisms for collective action and decision-making as well as to increase the sense of ownership over water supply within community members. The Dublin principles adopted at the United Nations Conference on Environment and Development (1992), and the World Summit on Sustainable Development WSSD (2002) in all put more emphasis on beneficiary community participation in management of water resources.

Purpose

The purpose of the study was to assess the influence of beneficiary participation on sustainability of donor-funded water projects in Tanzania using OLMULO water project in Arusha region as a case study. The study sought to examine whether beneficiary involvement in project planning, implementation, monitoring and in management of the project could influence sustainability of donor-funded water projects in Tanzania.

Research Methods

The study adopt explanatory research design and targeted a population of 30,000 community members who are beneficiaries of OLMULO water project in Arusha region in Tanzania. Data were collated from a sample of 395 respondents through questionnaires and focus group discussion drawn from the population under the Cochran (1977) formula using stratified simple random sampling techniques out of which 309 responded, giving a response rate of 78%. According to Mugenda and Mugenda (2009), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Both descriptive and inferential statistics were used to analyze the data. Pearson correlation coefficient, Chi-square test, T-tests, ANOVA and regression techniques were employed to assess the influence of beneficiary involvement on sustainability of donor-funded projects in Tanzania. Descriptive analyses were conducted to describe the basic features of the data to provide simple summaries about the sample and the measures.

Results and Discussion

The sample size of the study was 395 out of which 309 filled the questionnaires and participated in focus group discussion giving a response rate of 78 %. Out of the 309 respondents, 27.8 % were male while 72.2 % were female. Of the 309 respondents, 70.9% were married and 27.2 % were singles. In terms of education level, 37.5% had a bachelor degree, 7.1% diploma, 40% had attended high school and 14.6 had never been to school. Majority of the 309 respondents were project beneficiaries accounting for 91.5 %, followed by 3.8 % Water Users' Association, 2.9 % implementing agency and 1.9 % funding agency staff members.

The influence of beneficiary participation on sustainability of donor-funded projects in Tanzania

The study was to examine extent to which beneficiary involvement influences sustainability of donor-funded projects in Tanzania using donor-funded OLMULO water project in Arusha region as a case study. To establish the relationship between beneficiary involvement and sustainability of donor-funded projects in Tanzania, the researcher focused on measuring the level of beneficiary involvement in project planning and implementation and their influence on sustainability of donor-funded projects.

Influence of beneficiary involvement in project planning on sustainability of donor-funded projects

The study sought to establish whether beneficiary involvement in project planning could influence sustainability of donor-funded projects. Several questions were asked to which the respondents were to indicate their extent of agreement with each statements. The findings indicated that 97.4% of the respondents strongly agree that beneficiary involvement in project planning truly influences donor-funded project sustainability while 2.6% of the respondents strongly disagree.

Table 1: Level of beneficiary involvement in project Planning.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	8	2.6	2.6	2.6
	Strongly Agree	301	97.4	97.4	100.0
	Total	309	100.0	100.0	

Extent to which beneficiaries were involved in project planning by donors

The study further sought to establish extent to which beneficiaries were involved by donors in project planning. From the findings, 31.1% of the respondents indicated that their involvement in project planning was very high, 59.2% indicated that they were involved to high extent while 9.7 % indicated that their involvement was very low.

Table 2: Extent to which beneficiary were involved in project planning by donors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	30	9.7	9.7	9.7
	High	183	59.2	59.2	68.9
	Very High	96	31.1	31.1	100.0
	Total	309	100.0	100.0	

Extent to which beneficiary involvement in project planning influences sustainability of donor-funded OLMLO water project

The study sought to establish extent to which beneficiary involvement in project planning has influenced sustainability of donor-funded OLMULO water project. From the findings, all 309 (100%) respondents cited or agreed that their involvement in project planning has influenced sustainability of donor-funded OLMULO water project as shown in Table 3.

Table 3: Extent to which Beneficiary Involvement in Project Planning has influenced Donor-funded OLMULO water project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	309	100.0	100.0	100.0

Beneficiary involvement in project planning and sustainability of donor-funded projects

Regarding whether there is a relationship between beneficiary involvement in project planning and sustainability of donor-funded projects or not, the researcher conducted correlation analysis using Pearson product moment correlation coefficient test. Correlation analysis results shows a coefficient of 0.605 with Sig (2-tailed) p-value of 0.00 as indicated in Table below; suggesting that there is a statistically significant, positive, and strong correlation between beneficiary involvement in project planning and sustainability of donor-funded projects.

The result is consistent with that of Davidson (2005), Chaikati (2009), Chizimaba (2003), Gilbert (1998) [4], Long (2001), Midgley (1986) [11], Mulwa (2008), Mselle and Nogowi (1998) [12], Pimbert and Pretty (1994) [14] who argue that "effective project sustainability is realized when the project beneficiaries are involved in project planning since they aim at attaining desired outcomes through understanding their needs and finding the means to address them".

Table 4: Correlation between Beneficiary Involvements in project Planning and Sustainability of Donor-funded projects

		Beneficiary Involvement in Project Planning
Sustainability of Donor funded project	Pearson Correlation	.605**
	Sig. (2-tailed)	.000
	N	309

**. Correlation is significant at the 0.01 level (2-tailed).

Beneficiary involvement in project implementation and sustainability of donor-funded projects

The study sought to examine whether beneficiary involvement in project implementation could influence sustainability of donor-funded projects. The respondents were asked questions to indicate their extent of agreement with each statement. On the questions as to whether beneficiaries were involved in project activity during the implementation of OLMULO water project, the mean was 2.69 with standard deviation of 0.913. On whether beneficiaries were involved in material and financial contribution, the mean was 2.96 while the standard deviation was .913 affirming great diversity in the opinions of respondents.

Table 5: Level of Beneficiary Involvement in Project Implementation

	N	Minimum	Maximum	Mean	Std. Deviation
Beneficiary were involved in project activity during the implementation of OLMULO water Project	309	1	4	2.96	.913
Beneficiaries were involved in material and financial contribution for the project	309	1	4	2.96	.913
Valid N (listwise)	309				

Extent to which beneficiary were involved in project implementation by donors

The study further sought to establish extent to which beneficiaries were involved by donors in project implementation. From the findings, 11.0 % of the respondents indicated that their involvement in project implementation was very high and 67.0 % indicated that their involvement were high, 9.4 % indicated that their involvement were low while 12.6 indicated that their involvement were very low.

Table 6: Extent to which Beneficiary were Involved in Project Implementation by Donors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	39	12.6	12.6	12.6
	Low	29	9.4	9.4	22.0
	High	207	67.0	67.0	89.0
	Very High	34	11.0	11.0	100.0
	Total	309	100.0	100.0	

Extent to which Beneficiary Involvement in Project Implementation has Influenced Sustainability of Donor-Funded OLMLO Water Project

The study sought to establish extent to which beneficiary involvement in project implementation has influenced sustainability of donor-funded OLMULO water project. From the findings, all 309 (100%) respondents strongly agree that their involvement in the implementation of the project has influenced sustainability of donor-funded OLMULO water project.

Table 7: Extent to which Beneficiary Involvement in Project Implementation has influenced Sustainability of Donor-funded projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	309	100.0	100.0	100.0

Beneficiary involvement in project implementation and sustainability of donor-funded project

Regarding whether there is a relationship between beneficiary involvement in project implementation and sustainability of donor-funded projects or not, the study carried out a correlation analysis using Pearson Product Moment Correlation Coefficient along with the Sig (2-tailed) p-value to establish the underplaying relationship between beneficiary involvement in project implementation and sustainability of donor-funded projects Table 8). The findings indicated that a Pearson Correlation coefficient of 0.750 with Sig (2-tailed) p-value less than 0.005; suggesting that there is a statistically significant, very strong and positive correlation between beneficiary involvement in project implementation and sustainability of donor-funded projects. The result is consistent with that of Mulwa (2008), Mselle and Nogowi (1998) [12] who suggested that "effective project sustainability is realized when the project beneficiaries are involved in project implementation since they aim at giving them a sense of ownership and be able to deal with potential challenges of the project after donor withdrawal".

Table 8: Correlation between beneficiary Involvement in Project Implementation and Sustainability of Donor-funded projects

		Beneficiary Involvements in Project Implementation
Sustainability of Donor-funded projects	Pearson Correlation	.750**
	Sig. (2-tailed)	.004
	N	309

**. Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

The Model summary (Table 9) shows extent to which each independent variable influences the dependent variable. The reported R-square (coefficient of determination) is 0.766 which implies the total variation in project sustainability is explained by beneficiary involvement in project planning and implementation.

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.761[a]	.766	.764	.388	1.465

a. Predictors in the Model: (Constant), Involvement in Project Planning, Implementation.

b. Dependent Variable: Sustainability of Donor-funded project in Tanzania.

The findings in Table 10 shows that taking all other independent variables at zero (as were excluded or dropped out in the model estimation), a unit increase in beneficiary involvement in management of the projects leads to 0.925 (92.5%) increase in the sustainability of donor-funded projects in Tanzania while a unit increase in the planning, implementation and beneficiary involvement in project planning and implementation jointly (altogether) leads to approximately 0.75 (7.5 %) an increase in sustainability of donor-funded projects.

Table 10: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.150	.275		.543	.588
	Beneficiary involvement in the project planning and implementation influences sustainability of donor-funded project	.925	.070	.605	13.306	.000

Dependent Variable: Sustainability of Don-funded project in Tanzania

Conclusions

The finding shows that beneficiary involvement accounts for only 36.6 % for sustainability of donor-funded projects in Tanzania. Hence, based on the findings, the researcher concluded that beneficiary involvement is crucial for sustainability of donor-funded projects in Tanzania. The study also highlights that project sustainability must or must not only depend on beneficiary involvement in planning, and implementation but instead, there is potential for increasing project sustainability by paying close attention to other factors that constitute about 63.4 % towards sustainability of donor-funded projects. Furthermore, the findings indicate that 'beneficiaries only' should not be blamed for donor-funded projects failures in Tanzania and in general in developing countries. However, following limitations of the study, the findings and arising policy implications of this study are as well not foolproof and thus the empirical evidence at this stage is only suggestive and is open for further research.

Recommendations

Frequent pipe burst and leakage, blockage of pipes, scarcity of underground water, increased domestic water users and rationing needs to be addressed according to water users association in line with questionnaire. The increasing rate of water project failure especially in the rural areas should be addressed in order to achieve reliable supply of safe and clean

water to the rural populations. Local governments, donors and communities should make sure that capacity buildings for project management to the community and water user association members become a sustainable process for the attainment of water project sustainability.

In order to enhance transparency among WUG and VWC towards management of water funds, there should be good and timely quarterly progress reports on expenditures and incomes accrued from water services which should be submitted in the village assemblies so that immediate measures can be taken in cases where operational problems emerge. Beneficiary participation is a useful means for achieving sustainable development in rural areas.

In order to achieve sustainable development, interactive and self-mobilization types of participation are recommended whereby people are actively involved in all stages of project identification, planning, implementation, monitoring and evaluation for sustainable development. In this case, donors, the central government, Local governments and donors when planning to initiate a project for the community, they should seek for a really participation of all beneficiaries.

The study recommends strengthening of Water user organizations; Water user entities and user groups are the lowest appropriate management level for Rural Water Supply and Sanitation services (RWSS). COWSOs and WATSAN committees, established in villages are responsible for the planning, management, and Operation and Maintenance (O&M) of the facilities. This includes designing sub-projects and preparing proposals, getting approval and subsequent funding, monitoring construction, setting tariffs, collecting revenue, and providing reliable services to the consumers.

Further, there is need to strengthen Village council (water committees) capacity in the village council is formed by different committees of various sectors of concern. Each committee is responsible to take care of all matters falling under a particular sector. Water committee is essential in strengthening and sustaining established water structures and service. Water committee is important to enable detailed monitoring and finding solutions to various problems confronting proper functioning of the installed water infrastructures. In this perspective Water committee members are elected to manage projects on behalf of the whole community.

Proper training and technical support at all levels and for all groups engaging in water project implementation and management should be given priority. Water attendants should be given basic technical training to enable minor repairs in system breakdowns. Beneficiaries should be mobilized to build interest in sustaining the initiated project services. Mobilization should start at the initial stage of project implementation. Community members should be well briefed at the beginning of water project about cost sharing. Cooperation among the key stakeholders is important especially among the LG leaders and WC, and between WC and the community, as well as technical experts at the municipal and institutional level.

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